

## PLACE & HISTORY

### Skwxwú7mesh NATION TERRITORY

This is traditional Coast Salish Territory. The ELC is built on Skwxwú7mesh (Squamish) Nation territory. The Coast Salish people of the Skwxwú7mesh Nation lived for centuries in the present day Skwxwú7mesh River watershed, where they hunted for bear and deer in the coastal forests and fished the local rivers. The name of the Ch'iyákmesh (Cheakamus) River comes from the indigenous village Ch'iyákmesh and means "People of the Fish Weir" in the Coast Salish Language. Skwxwú7mesh translates to "Birthplace of the Winds."

### NATURE BY DESIGN

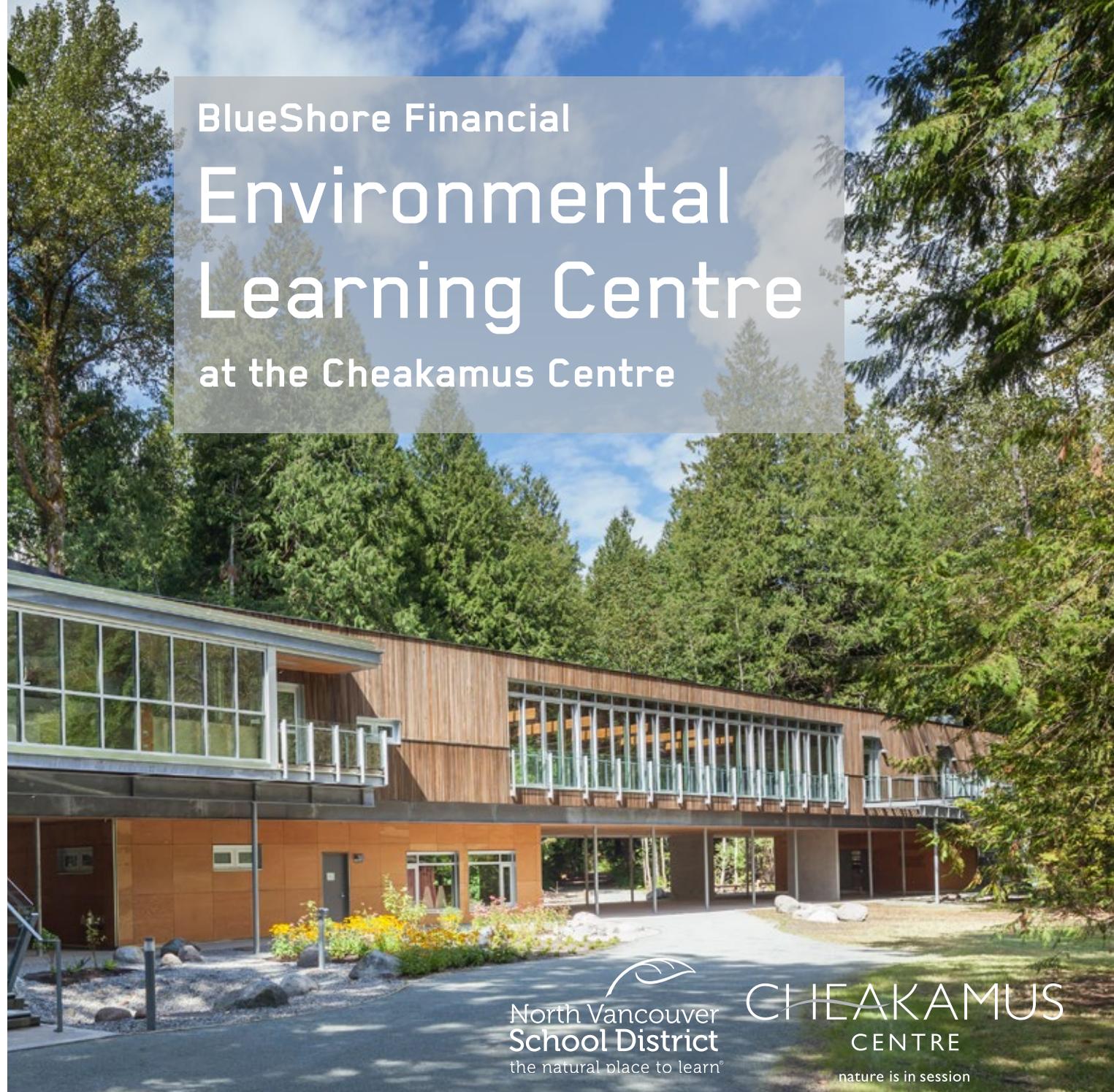
The Environmental Learning Centre incorporates elements of the natural landscape. The ELC sits on 165 hectares of ecological reserve land. This diverse temperate rainforest habitat includes stands of old growth cedar, Douglas fir and lodge pole pine. It features wild salmon streams and is a major centre for wintering bald eagles. The materials, orientation and design of the ELC reflects these natural surroundings. Ecological systems in the area are used to heat, cool, supply water, provide fresh air and process waste for the building.

### BUILDING ON A FLOOD PLAIN

The building is designed to survive a major flood. The floor of the ELC has been raised 3 meters above the valley floodplain. This elevates the building into the forest canopy, creating a 'tree house' feel. Orienting the 'nose' of the building into the flow of potential floodwaters, like a salmon swimming upstream, protects the building in the event of a major flood. The cedar trees surrounding the ELC tell us that the site has not been an active flood zone for over 200 years.



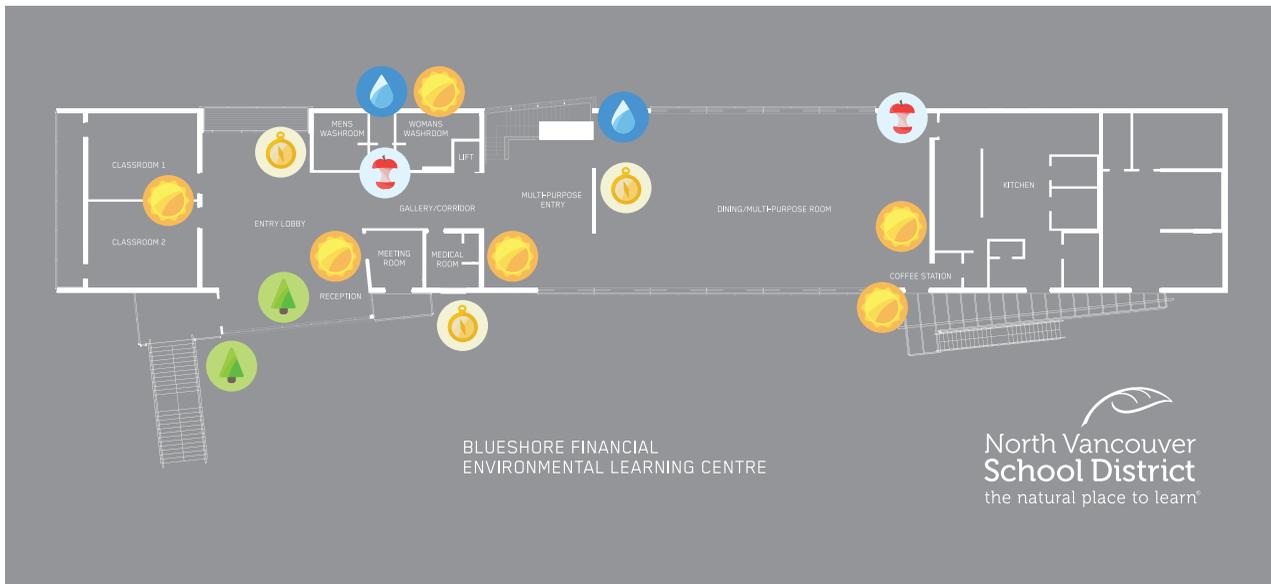
# BlueShore Financial Environmental Learning Centre at the Cheakamus Centre



  
North Vancouver  
School District  
the natural place to learn®

CHEAKAMUS  
CENTRE  
nature is in session

## Green Building Tour



## Green Building Tour

Welcome to the BlueShore Financial Environmental Learning Centre (ELC) at the Cheakamus Centre in Paradise Valley, BC.

Built in 2012, the ELC features a number of design innovations that save energy and water, reduce the impact the building has on the environment, and reflect the natural character and history of the Ch'iyákmesh (Cheakamus) River and the Skwxwú7mesh (Squamish) area.

Follow the icons on the map above and read about the green features that make the ELC the natural place to learn and host events.

## We're Here

Cheakamus Centre South  
1600 Paradise Valley Road  
Brackendale, BC V0N 1H0  
604.898.5422

## Bookings

info@cheakamuscentre.ca  
604.898.5422  
Toll Free 1.888.6776665

## SAVING WATER

### RAIN & WELL WATER SUPPLY



**Toilets use rainwater to flush waste.** Rainwater is used in the urinals, toilets and fire sprinkler system. It is collected on the roof and stored in a water cistern inside the building. Before entering the cistern, the rainwater passes through two filters and an ultraviolet disinfection system to remove debris and kill any bacteria. Drinking and tap water is provided by a separate potable water system from a local well.

### FIRE SAFETY

**Sprinklers put out fires with rain and pond water.** Rainwater is stored in a water cistern in the building. In the event of a fire, this rainwater would be pumped through the building's sprinkler heads. An external hydrant would draw water directly from the canoe pond to supplement the rainwater in the cistern.



## REDUCING WASTE

### ELIMINATING WASTE



**Washroom waste is composted on site by microorganisms.** All wastewater and flushed material is removed from the building to underground holding tanks. It is then pumped to a septic field, located under the power lines, where it is broken down to compost through anaerobic digestion by natural microorganisms.

### WASTE AS FOOD

**Your apple core may be the resident pig's next meal.** The site maintains a recycling and composting system to reduce the amount of garbage entering the Squamish landfill. Whenever possible, food waste is used to feed the pigs and chickens that live at the Outdoor School farm.

## SAVING ENERGY

### HEATING & COOLING WITH GROUNDWATER



**Groundwater heats and cools this building.** When heat is required, a pump submerged 55 meters in the ground pulls water from an underground aquifer up into the mechanical room. Before returning the groundwater to the aquifer, several degrees of heat energy is extracted from the water and transferred to a liquid in the heating and cooling system. A highly efficient electrical 'heat pump' warms the liquid further before the heat is distributed through the radiant heating system in the floor. When cooling is required, the process is reversed and the system removes heat from the building.

### A BREATHING BUILDING

**Crowds raise CO<sub>2</sub> levels. Our system responds by bringing more fresh air into the building.** The ELC's ventilation system distributes fresh air throughout the building. Warmed air pools above the floor vents and is gently pulled through the space by the air handling unit, located behind the kitchen. Before returning this air to the outside, a heat wheel in the air duct removes heat from the used air to warm the new incoming air. Carbon dioxide sensors dictate how much new air is brought into the building based on the number of people 'breathing'.

### PREHEATED HOT WATER

**Tapwater is warmed using recycled heat.** Two electric hot water tanks provide hot water for the building. Before entering these tanks, water from the well is preheated using excess heat from the building's heating and cooling system. The electric hot water tanks then bring the water up to the required temperature for use in the kitchen and other ELC taps.



### SMART LIGHTING

**Lighting sensors monitor your entrance and departure.** The north-south orientation of the building and multiple skylights provide the maximum possible amount of natural light. The lighting system consists of fluorescent lights that adjust according to the amount of natural light available. When a space is vacant, occupancy sensors ensure that the lights are off. The light levels can also be manually controlled.

### BUILDING ENVIRONMENTAL CONTROLS

**Sensors help to automatically control building systems.** The ELC is equipped with meters and sensors that collect data on all building systems. This control system allows the building to run more efficiently while responding to the changing needs of the people using the space. With the information that is collected, many of the building systems are designed to turn on and off automatically as needed.

### EFFICIENT KITCHEN APPLIANCES

**A magnetic field is used to cook your food.** The kitchen has been equipped with induction stoves. These stove tops are built with coils of copper wire that create a magnetic field, which produces an electrical current. The current flows through the cooking equipment and heats the food faster and more efficiently than gas or electric ranges. The kitchen also features a grease interceptor tank that uses enzymes and bacteria to consume kitchen grease.

## BUILDING MATERIALS



### THREE R's OF BUILDING MATERIAL

**The ceiling in the lobby is made from reclaimed timber.** Most of the materials used in the building are reclaimed, recycled or regionally produced. The ceiling in the main entrance features reclaimed timber from Lonsdale Elementary School in North Vancouver. The timber was originally harvested in the early 1900s. The concrete used in the building base contains 67% post-industrial recycled materials and the structural reinforcing steel is made from 90% recycled material. The timber floor panels and ceiling beams were manufactured in BC and built with locally harvested trees.

### MINIMIZING CONSTRUCTION IMPACTS

**92% of all construction waste was diverted from the Squamish Landfill.** The site of the ELC was formerly a roadbed, resulting in minimal site disturbance during construction. A local waste management company separated wood waste, drywall and other construction by-products for recycling, diverting 92% of the construction waste.

