

# >CIRS is a FOCAL POINT for Sustainability Research

*The entire UBC campus is an experiment in sustainability, a 402-hectare city in which to test, learn, teach, apply and share the outcomes of sustainability focused inquiries. Our goal is to apply—across the campus and, with the help of partners, in the marketplace—what is learned in CIRS.*

UBC students, faculty members, staff and partners come together in CIRS to explore new sustainability technologies, tools and approaches. The CIRS research program, a cornerstone of these collaborative efforts, studies three areas:

- > BUILDING DESIGN AND OPERATION. Researchers study predicted and actual performance of the building and measure its components, resource use, and how the inhabitants interact with the building.
- > COMMUNITY ENGAGEMENT. The BC Hydro Theatre provides advanced visualization and interaction technologies to engage audiences in exploring sustainable futures.
- > POLICIES AND PARTNERSHIPS. Researchers evaluate the gap between policy intent and actual results after implementation.

CIRS' research goals and strategies start at a regional level with activities in Vancouver and British Columbia. This local collaboration will result in a multitude of innovative strategies, technologies and policies and help springboard them to export and commercialization in the global marketplace. Partners take CIRS research beyond the UBC campus, becoming true agents of change.

CIRS exists to accelerate sustainability. If CIRS accomplishes its mission, it will not be at the forefront of sustainable building practice. It will be one of many truly sustainable buildings.

## Find us

CIRS Centre for Interactive Research on Sustainability  
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## Contact us

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The mosaic of sustainability: CIRS links partners in the private, public and NGO sectors.



## The CIRS numbers

0

Structural concrete or steel above the ground floor, creating a low environmental footprint.

500

Tons of carbon sequestered by wood used in CIRS.

0

Wall-mounted light switches and wiring through walls. Lighting is controlled through inhabitants' computers.

100%

Amount of building's water demand that comes from rain.

100,000

Capacity in litres of CIRS' rainwater storage tank.

275

Megawatt hours per year of surplus scavenged energy, making CIRS net positive on energy use.

100%

Liquid waste treated and recycled on-site.

4

Net positive categories: energy, operational carbon, water quality, and structural carbon.

1

Projected to become first UBC LEED Platinum building and first certified Living Building.

# CIRS is a place for BIG IDEAS that make BIG IMPACTS."

— John Robinson, Executive Director, UBC Sustainability Initiative

## SUSTAINABILITY

defines UBC as a university. Little wonder our newest project redefines the term "green building."

The Centre for Interactive Research on Sustainability (CIRS) is designed to be the most innovative high-performance building in North America. CIRS is a focal point for sustainability research and partnerships, teaching and learning, and operational activities on the University of British Columbia's Vancouver campus. CIRS is a research centre that addresses some of the world's most pressing global sustainability challenges.

## A REGENERATIVE

building process

CIRS is a test bed demonstrating that buildings can draw from a site's available resources and contribute back to them. Researchers evaluate how a building can become restorative by being net positive, reducing a community's energy use and emissions, improving water quality, and sequestering more carbon than emitted in construction and decommissioning at the end of its life.

## A LIVING

laboratory

CIRS provides an opportunity to monitor energy, water and mass flows as well as impacts. Treating the building as a process rather than a product facilitates interactions between inhabitants and the building as well as key building components and systems development. This ongoing study will enable continual improvements.

## A HUMANE

building

A restorative building improves environmental quality on a campus and in a city, as well as increasing human quality of life. CIRS researchers measure this through extensive data collection and analysis.

## A platform for CHANGE

CIRS accelerates sustainability by bringing people, projects and processes together in new ways. Support from CIRS strategic alliance partners—BC Hydro, Modern Green Development Inc., Honeywell and Haworth Inc.—as well as other CIRS funders and supporters, ensures it is home to some of the most progressive research and studies happening worldwide. It integrates disciplines and industries to address immediate and future needs of communities and policy makers.



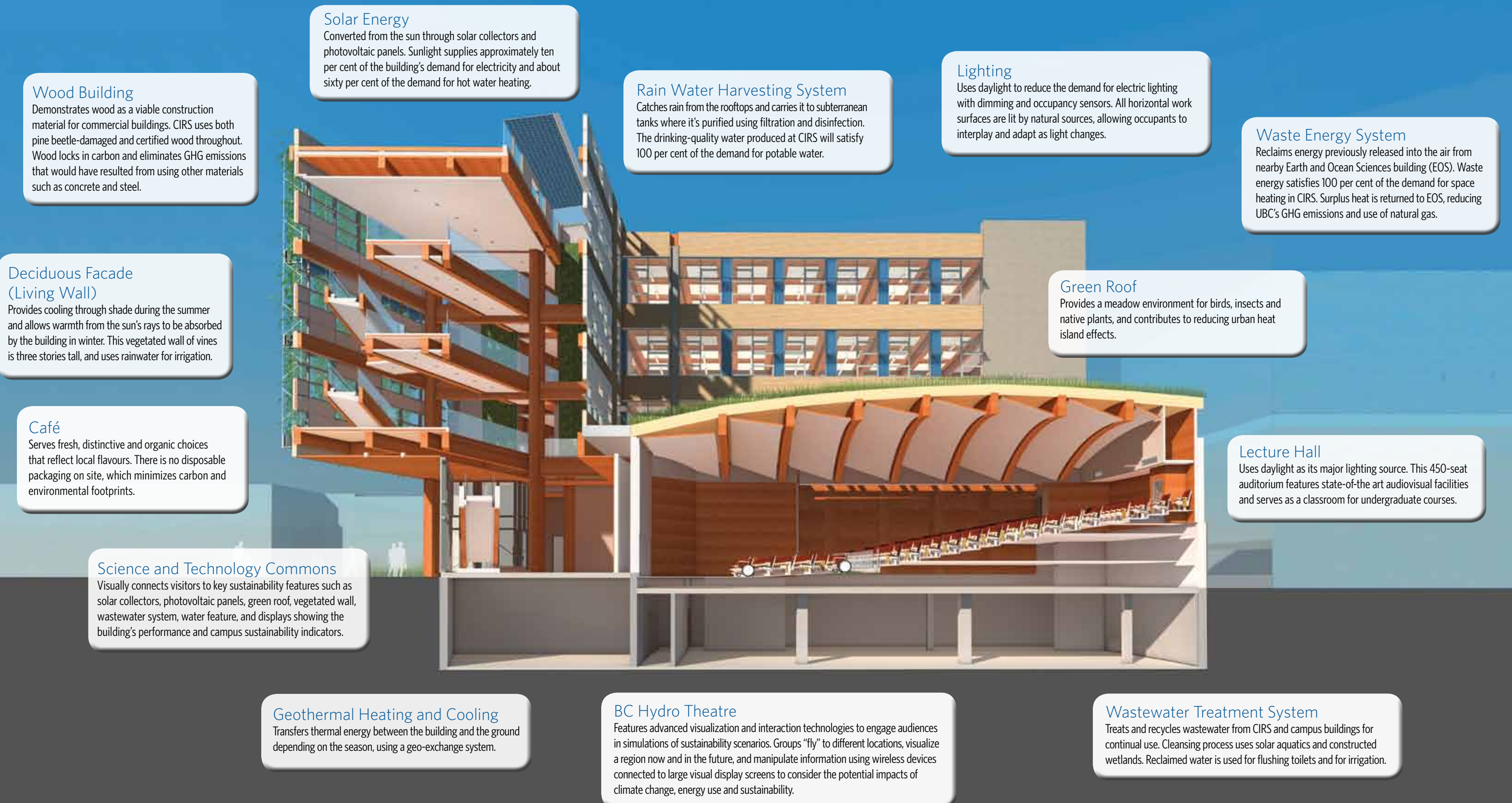
a place of mind

THE UNIVERSITY OF BRITISH COLUMBIA



# THE CIRS BUILDING

is extraordinary in architecture and regenerative features.  
It is a living laboratory for sustainability.



## Wood Building

Demonstrates wood as a viable construction material for commercial buildings. CIRS uses both pine beetle-damaged and certified wood throughout. Wood locks in carbon and eliminates GHG emissions that would have resulted from using other materials such as concrete and steel.

## Solar Energy

Converted from the sun through solar collectors and photovoltaic panels. Sunlight supplies approximately ten per cent of the building's demand for electricity and about sixty per cent of the demand for hot water heating.

## Rain Water Harvesting System

Catches rain from the rooftops and carries it to subterranean tanks where it's purified using filtration and disinfection. The drinking-quality water produced at CIRS will satisfy 100 per cent of the demand for potable water.

## Lighting

Uses daylight to reduce the demand for electric lighting with dimming and occupancy sensors. All horizontal work surfaces are lit by natural sources, allowing occupants to interplay and adapt as light changes.

## Waste Energy System

Reclaims energy previously released into the air from nearby Earth and Ocean Sciences building (EOS). Waste energy satisfies 100 per cent of the demand for space heating in CIRS. Surplus heat is returned to EOS, reducing UBC's GHG emissions and use of natural gas.

## Deciduous Facade (Living Wall)

Provides cooling through shade during the summer and allows warmth from the sun's rays to be absorbed by the building in winter. This vegetated wall of vines is three stories tall, and uses rainwater for irrigation.

## Café

Serves fresh, distinctive and organic choices that reflect local flavours. There is no disposable packaging on site, which minimizes carbon and environmental footprints.

## Green Roof

Provides a meadow environment for birds, insects and native plants, and contributes to reducing urban heat island effects.

## Lecture Hall

Uses daylight as its major lighting source. This 450-seat auditorium features state-of-the-art audiovisual facilities and serves as a classroom for undergraduate courses.

## Science and Technology Commons

Visually connects visitors to key sustainability features such as solar collectors, photovoltaic panels, green roof, vegetated wall, wastewater system, water feature, and displays showing the building's performance and campus sustainability indicators.

## Geothermal Heating and Cooling

Transfers thermal energy between the building and the ground depending on the season, using a geo-exchange system.

## BC Hydro Theatre

Features advanced visualization and interaction technologies to engage audiences in simulations of sustainability scenarios. Groups "fly" to different locations, visualize a region now and in the future, and manipulate information using wireless devices connected to large visual display screens to consider the potential impacts of climate change, energy use and sustainability.

## Wastewater Treatment System

Treats and recycles wastewater from CIRS and campus buildings for continual use. Cleansing process uses solar aquatics and constructed wetlands. Reclaimed water is used for flushing toilets and for irrigation.