

Coal Harbour & the Vancouver Convention Centre



Aerial photograph of Coal Harbor and the Vancouver Convention Centre
Headquarters Magazine, April 2011

Overview

Coal Harbour and the Vancouver Convention Centre has seen dramatic change in the past ten years. Since the 1990s, Coal Harbour has been the site for extensive redevelopment, transforming the old railroad terminus into a high-density mixed-use development. Several different development groups were responsible for each section of Coal Harbour, providing diversity in housing types and architectural details. Completed in April 2009, the expansion of the Vancouver Convention Centre has been an iconic addition to the Coal Harbour waterfront and an economic boon for Vancouver.

The redevelopment of Coal Harbour has allowed for a reclaiming of public space along the waterfront. Waterfront walkways, public art, and nearly 18 acres of public open space have been provided with the development of Coal Harbour, providing a green connection from Stanley Park to the Convention Centre.

The expansion of the Convention Centre, Convention Centre West, was built over both land and water, and showcases pedestrian-minded civic spaces as well as ecologically-sensitive design. The expansion increased convention space to over 1 million square feet. The Convention Centre was used during the 2010 Olympic Games as a broadcast center for the event.

Convention Centre Expansion Details:

Project Owner: BC Pavilion Corporation (PavCo)

Architects: LMN Architects, Musson Cattell Mackey Partnership and DA Architects and Planners

Project Costs: \$883 million (CAN)

Project Size: 1.2 million sq. feet

Project Completed: April 2009

“the...edge was designed to create a diverse urban waterfront experience” - City of Vancouver

“Coal Harbour: Marathon Lands Development

Gross Area: 41 acres
 Population 3800
 Density: 56 du/acre
 Housing Units: 2,300
 Non-Market Units: 450
 Parks/Open Space: 16 acres”

-City of Vancouver

“Convention Centre West

- 223,000 square feet of exhibition hall
- 60,000 square feet of meeting rooms
- 55,000 square feet of ballroom
- 95,000 square feet of retail space
- 400,000 square feet of walkways, bikeways, public open space and plazas”

– From LMN Architects, Vancouver Convention Centre West Press Kit

The Convention Centre project was a collaboration between Seattle-based LMN Architects, Vancouver-based Musson Cattell Mackey Partnership and DA Architects & Planners. The architects focused heavily on green design and technologies, the most visible being the “living roof” but the building also interacts with the water it’s built over by providing habitat shelves which allow marine life to flourish despite building construction over the water. The project achieved the LEED Canada Platinum certification in 2010 and has won numerous awards for its design.



History and Site Context

Coal Harbour was originally the terminus point for the Canadian Pacific Railroad. Located along the northern edge of Downtown in Vancouver Harbour, the area presents a great opportunity for redevelopment. Coal Harbour is composed of a series of precincts, the Marina neighborhood, Harbour Green, Burrard Landing and Bayshore Gardens, as well as the location of the Vancouver Convention Centre.

The Eastern portion of the Convention Centre, named Canada Place, was first used at the 1986 World’s Fair Expo. The site of the Western expansion was a former brownfield industrial site. Redeveloped into its current form, the building was used in the 2010 Winter Olympics as the broadcasting headquarters. The Western expansion triples the space for conferences and events

Planning Approaches

Coal Harbour has developed over time by a series of different forces. Each precinct of the neighborhood, as well as landmark buildings, have had different designers and architects involved. However, an overall guiding vision of Coal Harbour and its future have informed how the neighborhood has evolved.



Coal Harbour and the Convention Centre. LMN Architects

Coal Harbour was developed with several visions in mind. Creating destination points along the harbor, varying the types of land uses, evoking the site’s railroad history, as well as providing substantial public use were all parts of this vision. This site incorporated extensive communication between the city and developers during the design process, allowing both parties to negotiate before a final submittal is made.

The City of Vancouver established design guidelines in 2002 to guide future development of the the new Convention Centre. The guidelines gave much leeway to the architects in creating a landmark building, leaving much of the architectural details, such as materials or colors unspecified. Instead, the guidelines addressed a desire to develop the site with a sense of place, provide for pedestrian uses beyond event-goers, and create an iconic building that contributes to the Vancouver waterfront. The guidelines looked at pedestrian and vehicular access and circulation to the site, as well as street and civic space treatment.

Waterfront Treatment and Civic Spaces

The Vancouver Convention Centre and Coal Harbour are located in the center of a number of civic spaces along the shores of the Vancouver Harbour. To the west is Harbour Green Park, the project was designed to provide “a functional program, while integrating the city’s public realm” (MCM Architects). This goal was achieved through the connection to the waterfront park. Both the convention center and the park are located at the edge of downtown, providing close access to the city’s business districts as well as the historic Gastown district just to the east of the project site. The city has developed an extensive green pedestrian corridor along the Coal Harbour waterfront, now connecting Stanley Park to the Convention Centre.

Built on an old railway pier directly to the east of the convention center is Canada Place, which is an iconic building in the city’s landscape and serves a similar purpose as the convention center creating a civic hub along the waterfront.

Coal Harbour and the Vancouver Convention Centre

“Vancouver Convention Centre West Sustainable Features:

- Certified LEED® Canada Platinum
- Six-acre living roof, the largest in Canada and the largest non-industrial living roof in North America
- Shoreline and marine habitat restoration
- Water conservation and reuse system that features black water treatment and desalinization
- Seawater heat pump system for cooling and heating
- Energy efficient lighting fixtures
- Advanced energy management systems
- Natural ventilation
- Extensive use of controlled daylighting
- Local materials, including locally harvested Douglas fir and Hemlock wood finishes
- Radiant floor cooling and heating
- Natural ventilation in west prefunction rooms
- Shoreline replacement and continuation
- 100% irrigation reduction and 60%-70% water use reduction
- Low-VOC flooring”

– From LMN Architects,

“The Vancouver Convention Centre West [was designed] as a compelling vision of what a civic building can be—a celebration of people and place and a model of sustainability” -LMN Architects

Connections to the City

The Convention Centre West takes full advantage of its settings, creating transparency between the building and its surroundings. With panoramic views of the mountains, water and Vancouver skyline, the building utilizes floor-to-ceiling windows to take advantage of these views and to create permeability for visitors within the building. The new West expansion also contributes 400,000 square feet of public space surrounding the Convention Centre. The primary focus of this public space is to serve both as a place for the public to gather, but also as a point for circulation and connections to the city.



Living Roof on the Vancouver Convention Centre. LMN Architects

The site is intended to function “simultaneously as a building, an urban place, a park, and an ecosystem”. The design of the space and building were strategic to connect to the existing street grid in downtown as well as to keep important view lines to the waterfront.

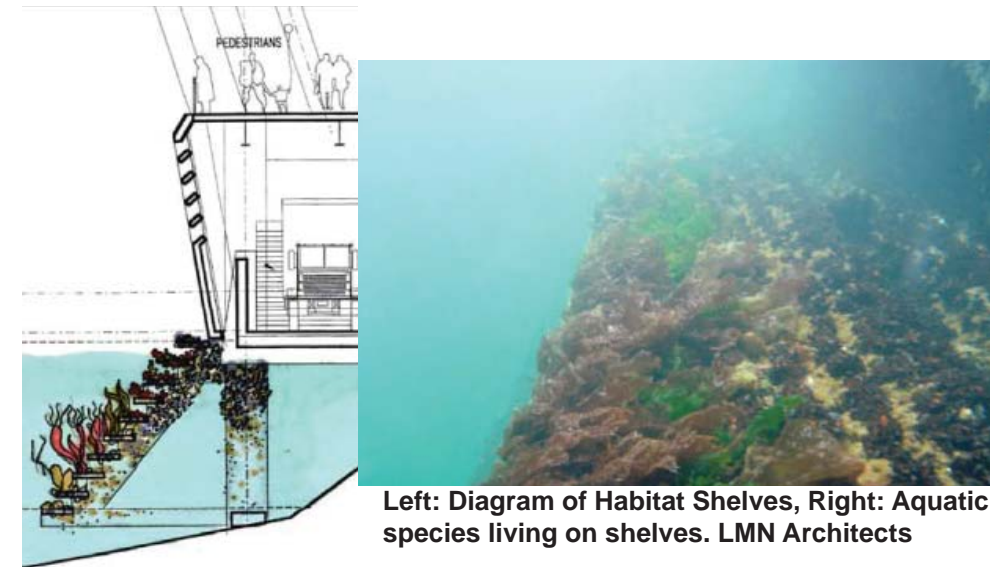
Convention Centre Design Features

The Vancouver Convention Centre sets a new standard for environmental design, civic buildings and public space. Architects of the project envisioned the Convention Centre expansion as a “a celebration of people and place and a model of sustainability.” The site sits on approximately 22 acres, with 14 acres on land and 8 acres over water. The design considers a series of elements, including civic space, ecological function and economic and social connections to downtown Vancouver.

Habitat Provision

The focus of the project has been rooted in accentuating the natural ecosystem while creating a vibrant focal point. The most evident example of this focus is in the building’s 6-acre green roof, the largest in Canada. The roof is home to 400 thousand native plants and 4 bee colonies. The roof helps to regulate temperatures within the building throughout the year, providing insulation from the elements. The green roof contributes to a larger series of waterfront parks along the harbor, comprising a vegetation corridor for wildlife. Rainfall collected on site through a catchment system will water the plants much of the year.

With approximately 35% of the site over water, the building has presented challenges in terms of nearshore habitat and aquatic life. As part of the project, plans were developed for the restoration of 200 feet of shoreline and 1,500 feet of marine habitat. An artificial reef was created as part of the Convention Centre foundation to create new habitat for aquatic organisms such as seaweed, salmon, barnacles, crustaceans, and other species. Additionally, tidal zones were created by inserting runnels, or narrow channels, underneath the Convention Centre building.



Left: Diagram of Habitat Shelves, Right: Aquatic species living on shelves. LMN Architects

Sustainability

Despite a 22-acre footprint, Convention Centre West has been constructed to optimize local features and minimize its environmental impact. Achieving LEED Platinum rating, the site has many green features too numerous to detail extensively. Some highlights to mention:

Convention Centre West takes advantage of many on-site features to run the building. Seawater is used in a heat pump system to provide consistent temperatures in the building throughout the year, cooling the building during warm months, and heating the building during cold months.

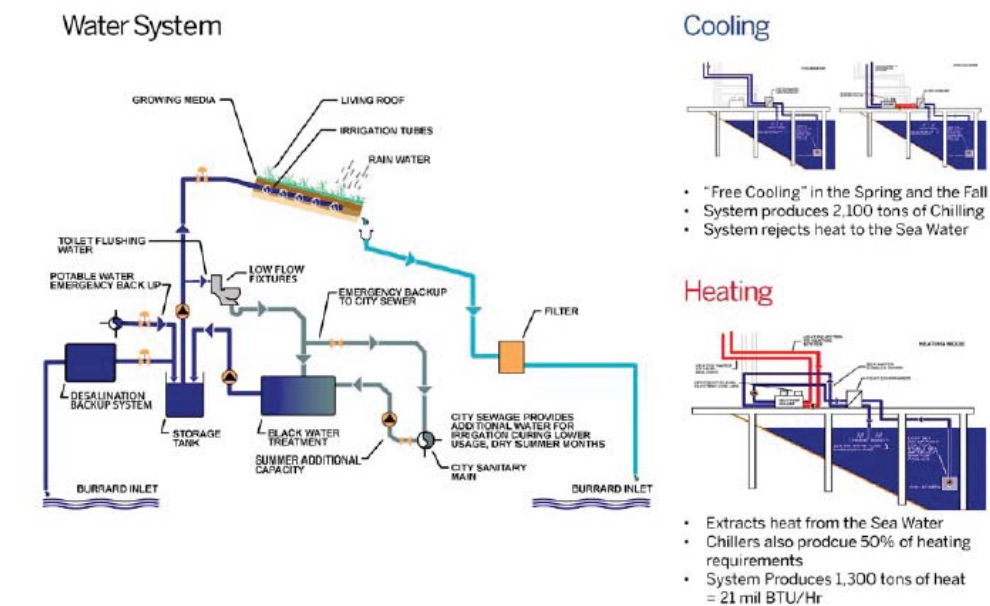


Diagram of the sea water heat pump system in the Vancouver Convention Centre Expansion. LMN Architects

“Harbour Green Park has become a major waterfront public space, connecting back to the north-south streets and mediating the grade change” - City of Vancouver

The building utilizes a grey water treatment system and desalinization system to provide water on-site for nonpotable uses, such as use for toilets and landscape irrigation. The grey water system can provide about 80% of the water necessary for these nonpotable uses, the desalination plant provides the additional 20%.

In addition, the site provides substantial habitat for native plants, wildlife and aquatic species. With the provision of a 6-acre living roof and artificial reefs below the water (discussed above), the West expansion helps restore the Vancouver waterfront while allowing for civic and economic uses.

Other sustainable features of the site are the use of natural daylighting, natural ventilation and heating. The building also utilizes locally sourced materials, such as timber. Building operations, post-construction, has also been sustainable. Locally-grown and organic foods are used in the kitchens, such as the honey produced by bee colonies on the building's roof. As well, excess foods are donated to local charities and half of the waste produced on the site is recycled.

Comments

A major criticism of the expansion is the overruns in construction costs. Originally estimated at a cost of \$495 million in 2000, the project's cost ballooned to \$883 million by 2009 when the project was completed. Although numerous unanticipated costs, such as increases in the price of materials, pushed the price tag higher, the decision to showcase the building for the 2010 Olympics has been considered the major contributor.

Upon visting the Convention Centre, it seems a little cut off from the urban core of the city. One would not realize that it is supposed to be a civic space of the city if entering from Canada Place just to the south of the building. It only feels like a civic space if coming from Harbour Green Park.

More focus could have been placed upon making the convention center feel like it is a place for Vancouver residents, instead it has more of a tourist feel. This may be attributable to the fact that it is located near Gastown as well as hotels and restaurants which rely on the convention center for much of their business.

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