UNIVERCITY CHILDCARE CENTRE

LOCATION
Burnaby, British Columbia

SIZE
530 m^2

COMPLETION
2012

ARCHITECT
HCMA Architecture + Design

STRUCTURAL ENGINEER
Fast + Epp Structural Engineers

GENERAL CONTRACTOR
Ledcor

PROJECT OWNER
Simon Fraser University Community Trust

Project Overview

Wood is a popular choice among architects for educational facilities for a number of reasons, including its ability to provide a warm and friendly learning environment. So, when Simon Fraser University (SFU) built a childcare centre in their UniverCity community, the decision to use wood was a logical one.

Besides providing care for 50 preschool-aged children, the UniverCity Childcare Centre is used by faculty and students in SFU's department of Early Childhood Education to research innovative childcare methods using a unique educational programming model that embraces sustainability and the environment. In response, HCMA took their sustainable building approach a step beyond the typical by designing the UniverCity Childcare Centre to meet Living Building Challenge (LBC) criteria.

UniverCity was the first childcare centre in the world to meet LBC's rigorous standards.

LBC is a green building certification program with a demanding set of building criteria, in which wood fits perfectly. The Centre is a net-zero energy building and wood's inherent thermal conductivity is lower than steel and concrete, which makes it easy to insulate to high standards. LBC criteria also requires that products used to construct the facility be sourced locally, so fabricators used wood from mountain pine beetle-affected forests to construct the roof and wall panels. Interestingly, even with these and other challenging requirements, the Centre was built at a cost of 18 percent less than that of comparable childcare facilities in the region.

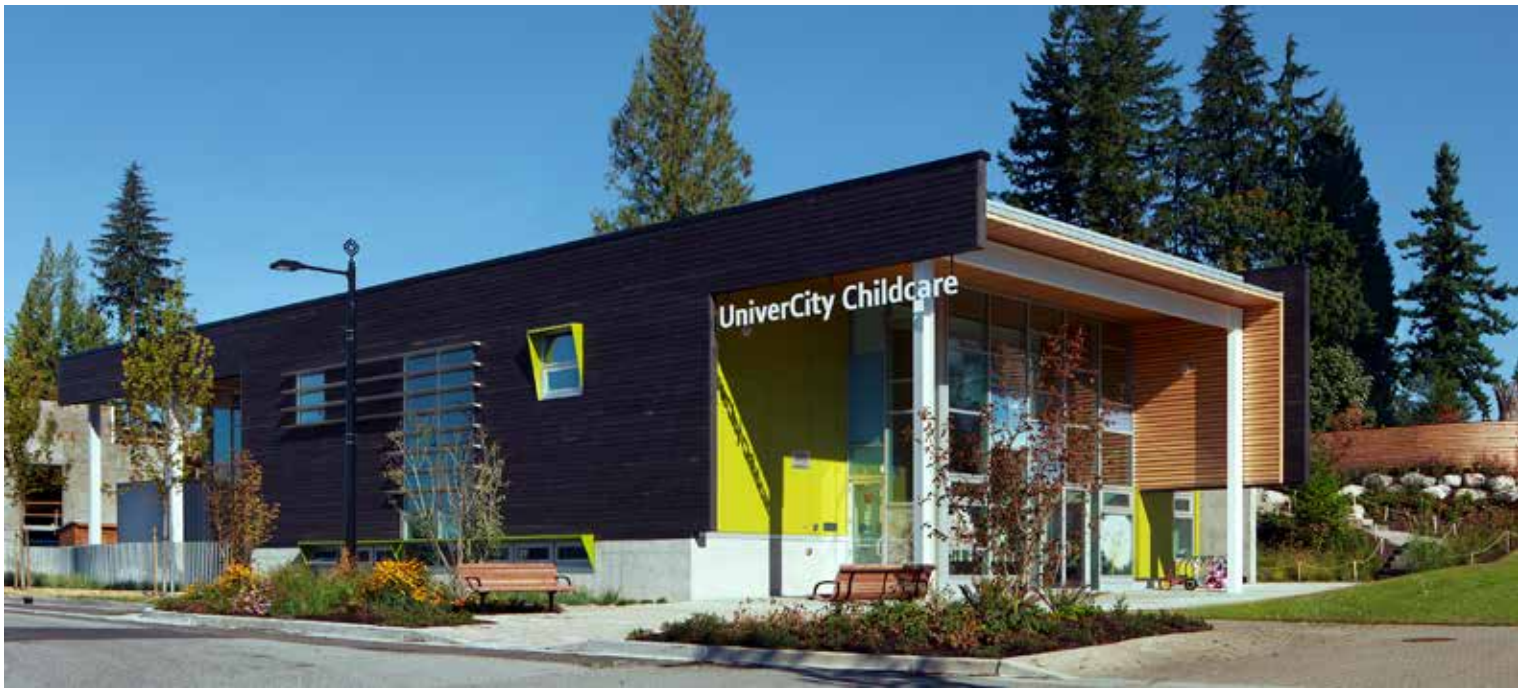

Photo courtesy of HCMA

"It was our intent to try to deliver the most sustainable building in Canada on a fixed budget and allow the youngest segment of our population to enjoy that building and come to expect that out of any building they occupy in the future."

Dale Mikkelsen
Director of Development, SFU Community Trust

Wood Use

Materials selection is critically important to LBC criteria. HCMA spent a significant amount of time and research to find compliant products. They chose to use an exposed steel frame which supports a solid wood roof and exterior wall structures constructed of nail laminated timber (NLT) panels. NLT panels are formed by nailing dimension lumber, stacked on edge, into a solid panel.

The NLT was fabricated onsite and used for both structure and interior finishes, providing acoustic benefits. Fabricators left the exterior NLT panel surfaces flat to allow for smooth adherence of plywood and roofing material, as well as for the roof-mounted solar panels which generate more energy than the facility requires. They staggered the interior NLT panel surfaces by using both 2x4 and 2x6 dimension lumber, resulting in a unique interior surface that not only provides visual interest but improved acoustics for the busy indoor space. The stairs and window sills were trimmed with salvaged wood, and cedar was used for the siding and landscape fencing which give the exterior a natural, familiar aesthetic.

The L-shaped building has two educational 'wings' connected by a shared community space. Salvaged lumber was refinished and used to construct the stage in the Community Room.

Photos courtesy of HCMA

The wood grain featured in this profile is western hemlock.

FOR MORE INFORMATION

This profile is published by Forestry Innovation Investment, the Government of British Columbia's market development agency for forest products.

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naturallywood.com