

Speed and LEED® - is it asking too much?

Child Development Centre goes for LEED Platinum and still demands more

Going green looks like one big problem

The University of Calgary had a clear vision for their new 11,200 m² Child Development Centre; create a building that was certified LEED® Platinum, achieving all ten LEED credits for optimization of energy, and diverting 75% of the construction waste from landfill. They wanted the entire project fast tracked too!



Their demands faced additional challenges. A large photovoltaic array was required to maximize the optimization of energy. They wanted to support the photovoltaic system from the side of the building which had never been done on this scale in Canada.

Diverting construction waste was difficult due to limited recycling opportunities and few end users in the City of Calgary. Add to all this a heated construction market with a shortage of skilled

labour and rising material costs and the challenge in achieving LEED Platinum in Alberta became quite a task.

The Road to Platinum!

To meet the demands of the U of C, every design element had to be considered – functionality, efficiency, budget and aesthetics. To do this the project would need to start with the right team who could work collaboratively together. It would take the cooperation from a project manager, construction manager, sub-consultants, client, stakeholders and users. The team that was put together included a strong commitment from the client, designers with LEED experience and knowledge, researchers from the U of C, LEED consultants and LEED experienced construction personnel who were committed to the Integrated Design Process. This multi-faceted experienced team formed the basis for success to achieve LEED Platinum.

To achieve all 10 energy credits involved innovative thinking. A collaborative partnership was formed with the University. Through this partnership a strategy was devised for installing the largest solar array to the side of a building in Canada. The panels would convert the sun's energy into electrical energy that would go directly into the building power supply, generating approximately 12 per cent of the energy needed to operate the building. What is unique is that the panels were installed as a design feature providing solar shading for the windows on the south facing side.

To address the construction waste, EllisDon worked with the Alberta government, The City of Calgary,

and local waste haulers to find solutions for recycling as many products as possible.

LEED Platinum Success

After two years of construction the results are in.

- The Child Development Centre is Certified LEED Platinum by the Canada Green Building Council (CaGBC). This building is the second building in Canada to achieve this status achieving 57 of the 58 credits.
- The building has an energy savings of 66% and a reduction of Green House Gas emissions of 436.5 tons of CO2 per year.
- 12 per cent of the buildings consumed energy is renewable
- The new solar array is distinguished with the Canadian Solar Industry Association's PV Project of the Year Award for its innovative 43.4 KW photovoltaic array that produces power more efficiently than a typical roof-mount array and doubles as a building shading system.
- Construction waste was diverted at rate of 78%; or, 345,538 kg (345 tonnes) of waste was diverted from the landfill.

Through cooperative teamwork and innovative thinking the client's demands were achieved but also a green environment was created for both children and adults. There is no doubt that other communities and projects will benefit from the research and success of this collaborative project.

The Specifics

Building Specifications

125,000 square feet

Location

Calgary, Alberta, Canada

Client

University of Calgary

Project Team

Architect: Kasian Architecture Interior Design and Planning Ltd.

Construction

EllisDon

Value

\$28 million