RENDERING COURTESY CANNONDESIGN

LOCATION
4700 Keele Street, North York, Ontario

OWNER/DEVELOPER
York University

ARCHITECT
CannonDesign

GENERAL CONTRACTOR
EllisDon Corporation

STRUCTURAL CONSULTANT
RJC Engineers

MECHANICAL/ ELECTRICAL CONSULTANT
MCW Consultants Ltd.

LANDSCAPE ARCHITECT
Scott Torrance Landscape Architect (a division of Forrec Ltd.)

TOTAL SIZE
126,000 square feet

TOTAL COST
$50 million

New Student Centre – York University

by **LAURIE JONES**

The 126,000-square-foot New Student Centre at York University in North York, Ontario is unique in many ways, particularly since it is a levy-funded, student-driven project. Approved by a referendum in 2013 by the largest student-voter turnout in Canadian post-secondary history – with 90 percent voting in favour – the new centre is welcomed with open arms by everyone on campus.

"York University's student population has nearly doubled since the construction of the original Student Centre in 1991," says Siva Vimalachandran, executive director. "However student space, such as meeting, club office, study, multi-faith prayer, event, and recreational, remain at a premium. The student body decided to address this concern themselves by initiating a student-led project by way of a second student centre." The official opening will take place this spring.

"We have vetted the design through the lenses of community safety, accessibility, and environmental sustainability," says Vimalachandran. "The material that visually connects and harmonizes this design philosophy is wood, running from the ground to the top floor. It is woven through the building as its lifeline via the wooden geometric feature stair."

Two of the most impressive design aspects of the New Student Centre are the cantilevered blocks with full glazing, and the higher, south-facing section features two-storey Alaskan Yellow Cedar glulam fins. "This wood will age gracefully and enhance the character of the building," says Hector Tuminan, associate VP, CannonDesign. "On the west elevation we have a copper mesh embedded in the curtain wall, also giving it a unique finish. This was used for the double-height student lounge. There is a lot of student traffic there and we wanted to give it the importance it deserves. This section has iconic views because it is at the crossroads of pedestrian routes through the campus."

Tuminan says while glass buildings in Toronto are a regular sight, the product's use at the New Student Centre has special significance. "Culturally, York University's student population is phenomenally diverse and they wanted to showcase that. That's why the glass is important here. It is not only for esthetics, they wanted to have a living room feeling where people can see the student life on display." In the evening, when the Student Centre is lit up, it acts as a beacon with its striking appearance.

As the Centre is targeted for LEED Gold, sustainability is a key factor, but it can be a challenge to attain energy efficiency with a glass structure. "We worked with the consultants to make that happen, but the larger issue was dealing with bird collisions against the glass," says Tuminan. "We brought in a German glass product with UV patterns that humans can't see but birds can detect and avoid the windows. It was expensive but worth it, particularly because the Centre is adjacent to a park frequented by birds."

The team at EllisDon Corporation dealt with a wide variety of components during the New Student Centre build. "There are many unique elements on the facade of the building on multiple elevations," says Zyad Arous, senior project manager. "The sloped 3D metal panels, the curtain wall that contains copper mesh sheeting, and the exposed cedar wood vertical fins give the building's envelope an added effect of depth from any exterior vantage point." All of the exterior glazing has a Low-E coating with argon gas between the glass layers for added insulating properties.

Arous adds that the building's design takes into consideration accessibility needs through the extensive use of ramps, added warning textures at stairs, raised lettering and braille signage, as well as visual and audible emergency warning systems.

To create the cantilevered structures – 7.5 metres for the south side and 4.5 metres on the north side – RJC Engineers had to work outside of standard parameters. "To do the 7.5-metre cantilever, we used 2.8-metre deep trusses at the roof level and hung the floor beneath," says Kumbo Mwanang'onze, associate. "That allowed us to conceal the main structure in the high ceiling and keep the fourth floor structure quite shallow, which enabled the architect to create the profile of a box projecting out of the building without deep bands of hidden structure on the bottom. It was an interesting effect."

Mwanang'onze says the other interesting aspect for them was the staircase. "The main staircase in the building is built out of structural steel with support that starts on the floor and corkscrews up either once or twice before it hits the next level. In essence, it is like a big spring with risers and treads."

Adding to the energy conservation and sustainability of the New Student Centre, the mechanical design incorporated several options, says Ray Niepage, partner, MCW Consultants Ltd. "We included heat recovery systems, part load equipment operation and control, demand control ventilation, district heating and cooling, and low flow plumbing fixtures."

To ensure the Student Centre has reliable power supply, the electrical system has redundant sources fed from Keele and Steeles substations with emergency back-up generator supply from an adjacent building.

Attractive landscaping completes the grounds of the New Student Centre, with a bosque of nine red maple trees leading to the main entrance. "It's a nice shady area for students to sit under but in the winter their forms will still be quite striking," says Scott Torrance, practice lead - Landscape Architecture, Forrec Ltd. "The cluster of trees is functional as well. This is a very large infiltration area so it actually takes stormwater and directs it into the zone, then the trees get watered that way." He adds the tree zone is also the site of a buried time capsule.

Leading up to the Student Centre is a large grass area known as the Roy McMurtry Green. "On a sloping area in the front of the building we designed an outdoor amphitheater for concerts and performances, and behind that we created a rock feature with giant slabs of stone," says Torrance. **A**