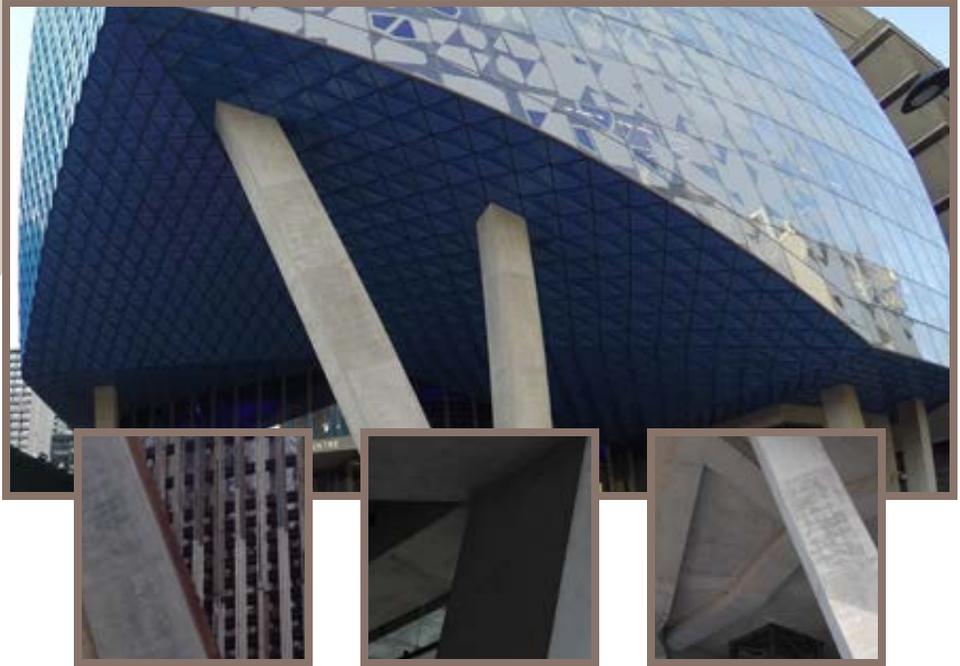


MATERIAL DEVELOPMENT & INNOVATION

**RYERSON
UNIVERSITY**
*Student Learning
Centre*



PROJECT CREDITS

OWNER

Ryerson University

ARCHITECT OF RECORD

Zeidler Partnership Architects

DESIGN ARCHITECT

Snøhetta

ENGINEER OF RECORD

CH2M Hill Canada Limited

GENERAL CONTRACTOR

EllisDon Corporation

FORMING CONTRACTOR

Alliance Forming Ltd.

MATERIAL SUPPLIER

St Marys CBM

ADDITIONAL PARTICIPANTS

- AGF-C&T Inc.
- Aluma Systems Inc.
- BASF Canada Inc.
- Carpenters Local 27
- Ironworkers Local 721
- LIUNA Local 506

PROJECT FACTS

LOCATION

Toronto, Ontario

CONTRACT VALUE

\$112 Million

SIZE

- 155,000 sq. ft.
- 8-storey building

TOTAL CONCRETE

11,655 m³

QUICK PROJECT FACTS

- Targeted LEED Silver
- At least 50% of the roof is green
- The storm water management design treatment system removes 80% of total suspended solids and 40% of total phosphorous





An Outstanding Environment to Study, Collaborate, and Discover

Architectural Merit

Designed by the architectural team of Zeidler and Snøhetta, the Ryerson Student Learning Centre (SLC) provides the university's students with an outstanding environment to study, collaborate, and discover. Located at the northeast corner of Yonge and Gould Streets in downtown Toronto, the new eight-storey SLC will mark Ryerson's new face on Yonge Street and provide a gateway to the ever-expanding Ryerson community. Featuring an elevated plaza and glass façade with bridges to the existing library, the SLC is home to a range of academic, study and collaborative spaces for Ryerson's students, faculty and staff. Yonge Street frontage features destination retail at and below grade, creating a prominent storefront and continuing the commercial fabric of the street.

The lightweight transparent high-performance glass skin features a surface design that will vary lighting intensity within the interior space. While the concrete structure is visibly rugged and heavy, the glass skin of the building is lightweight and transparent. A frit pattern emphasizes this delicate nature, while also creating varying lighting qualities within the interior. The fritted coating also acts to improve the shading coefficient and to increase thermal comfort and provide glare control. This allows students to find a place to study that could be in direct sunlight or under more diffused lighting conditions. As a further demonstration of Ryerson's long-time leadership in sustainability, the building is LEED® Silver compliant. At least 50 per cent of the roof is a dedicated green roof.

With links to the existing Library building, the SLC offers a variety of creative and inspiring learning environments and spaces. Each level has a distinctive character—some are open and interpretive with flexible furniture, while others are enclosed study rooms dividing the floors into various configurations. The 6th-floor “beach” is opened with terraced seating, ramps and furniture defining the casual study areas while the 7th-floor “forest” is divided by a wall of study rooms into quadrants to encourage independent quiet study and contemplation.

The program required establishing an educational building with an iconic presence on a commercial street known for its billboards and advertisement. To achieve this, the building has two faces: a retail face at grade along Yonge Street, and a series of stairs, ramps and seating areas which form a public plaza and the entry to the SLC.

Delicately clad glass fritted façades overlaid on a robust concrete armature. It announces and animates the entry to the Ryerson campus. A series of spatially interleaved floors animates the adjacent library that it supports. It gives life and renewed purpose to the existing building and proposes a new suite of spaces to support a range of learning options in a very public way.

The building seems to work as a gateway to the campus, and the materiality of the transparent glass skin, fritted with intriguing patterns, offers interesting views into the building, which is welcome along this portion of Yonge Street. It serves as a great visual portal

into the activities of the student centre, opening up the university to the city.

Not all university campuses have the privilege of giving shape and energy to their downtown cores. There are a handful in Canada that, through location alone, can extend their campuses beyond the gates and into the city. This building is a serious investment that Ryerson has made to its neighbourhood. From sheer energy and density of activity alone, the Learning Centre will transform Toronto's Dundas Square into a hybrid civic and campus commons. The building itself is richest in its sectional composition where it seems to unfold the city into its complex of interior spaces. The projects mandate to expose real-time energy consumption in a way that brings occupants and machines as close together as the dashboard of a car is intriguing. The high-performance glass skin will mediate between site and occupancy into a performance that is at once mechanical and artistic. Moves like these seem to transpose the elements and discourse of energy management squarely into the discipline of architecture where it should reside.

Material Development & Innovation and Specialty Concrete Construction

The project involved construction of angled architectural reinforced concrete columns that spanned many floor levels. Each column featured complex geometric shapes and a high-level of surface finish which require a superior concrete mix and specialized construction techniques to achieve the owners vision. The entire project team participated in a highly collaborative design-assist approach to the project and contributed in both the planning and on-site implementations.

Key challenges included the pouring of high strength architectural concrete into sloped multi-storied forms up to 14 metres without causing honey-combing or excessive bug-holing. To ensure the constructability of these columns full scale mock-ups were prepared and executed using the same materials and labour that would be used on site. It was particularly challenging to achieve the desired finish with conventional practices and materials, but with a highly skilled team and coordinated effort the results were spectacular.

The project was delivered using a superior cast-in-place concrete which enabled the creation of the complex columns, geometric shapes and a high-level finish for all exposed surfaces. St Marys CBM Lisa (Self-Consolidating concrete) was selected for the exposed columns due to its ability to enhance workability and finishability of close-tolerance surfaces. The flow enhancement of Lisa dramatically improved the concretes ability to flow along the forms and around rebar. The long term performance of this project was a major consideration in going with high performance concrete mixes and a quality ready mix concrete supplier. The performance of all the products was exceptional and successful in achieving the architects and owners vision.

