

THE NOVA AWARDS - 2005
TABLETOP STRUCTURE - Ontario College of Art & Design Redevelopment Project
INNOVATION DESCRIPTION - The Tabletop Concept

Located in downtown Toronto, the fifty year old Ontario College of Art and Design needed additional space to support its growing student population but was extremely limited by its surroundings. The only open land was a small 1225 square metre parking lot south of the existing building and a traditional vertical expansion on the existing building was not structurally feasible. Furthermore, the college's neighbors, a condominium apartment complex on one side and the Ontario Art Gallery on another had their own opinions as to the nature of any expansion especially as to how it might relate to a public park adjacent to the college.

The most pronounced design feature of the Tabletop is the twelve sloping steel columns which allow the structure to float over the existing building. Architecturally the columns were intended to be located in a random fashion which could have been accommodated in the steel superstructure but the foundation conditions required a balanced arrangement to resist horizontal forces created by the sloping columns. The solution was to provide the columns in pairs, each pair with its own axis of symmetry but to achieve the effect of randomness no two pairs are aligned identically. In this fashion the lateral forces at the base of each column are counterbalanced by tie beams below grade.

**Ontario College
of Art & Design
Redevelopment Project**

Photography by:
Richard Johnson | interiorimages.ca

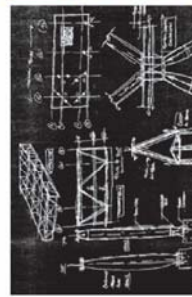


The round columns are slender, only 914 millimetres in diameter and 28 metres long but to further enhance their slenderness, the ends are tapered down to 450 millimeters at both ends. High strength pipe produced for the petroleum industry was used for the columns.

The "Tabletop" now named the Sharpe Centre for Design, with its unique solution for an urban expansion has created excitement in the design community both inside and outside the college.

The design solution developed by the architect and engineers was the "Tabletop", a two storey building 30 metres wide by 80 metres long supported on slender steel columns high above the existing building. By floating the structure 26 metres above the street, the effect on the neighbors is minimal maintaining and improving access into the park. Furthermore, the tabletop could be constructed above the existing building with little disruption to the school activities. All support for the new structure is outside the existing building although almost half the tabletop is over the existing building.

The structure of the building similar to a rigid box. Two storey deep trusses span both transversely and longitudinally within the building but are detailed to allow easy access within the building. Classrooms and studios are located between trusses and corridors pass through the trusses.



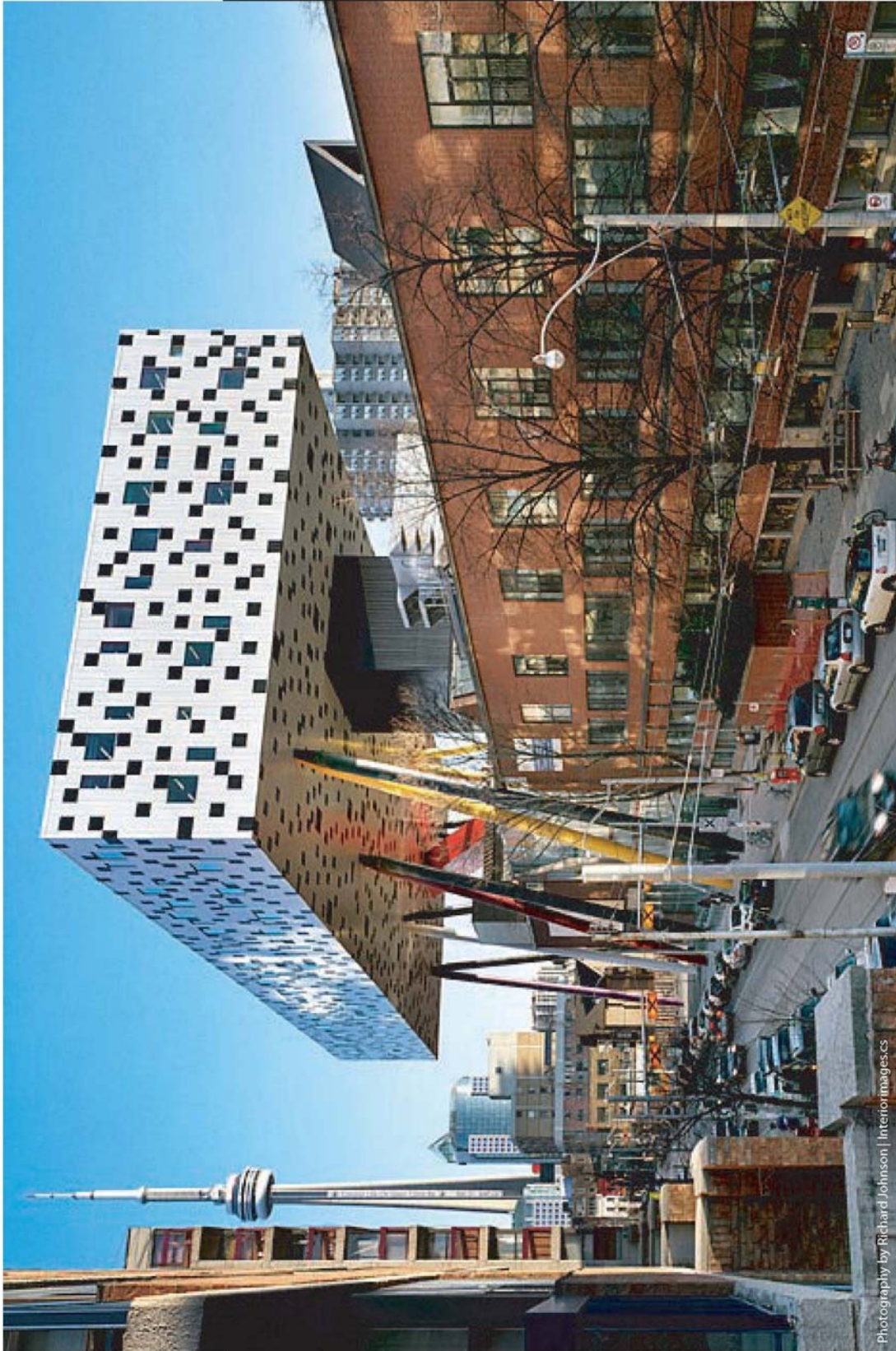
Ontario College of Art and Design Redevelopment Project - Sharp Centre for Design
Structural Engineering Development of the



Carruthers & Wallace Limited
Consulting Structural Engineers

**Contact: • Paul Sandford • Carruthers & Wallace Ltd • 970 Lawrence Ave West, Suite 600
Toronto, Ontario M6A 3B6 • Canada • 416-789-2600 ext 222 • Fax 416-789-3600
psandford@cw-eng.com • www.cw-eng.com**

THE NOVA AWARDS - 2005
TABLETOP STRUCTURE - Ontario College of Art & Design Redevelopment Project
INNOVATION ILLUSTRATION



Photography by Richard Johnson | Interiorimages.cs

