

The National Ballet School, Project Grand Jeté Stage 1: Jarvis Street Campus

The National Ballet School of Canada, located on Jarvis Street in Toronto, Ontario, is one of the world's finest ballet training institutions. The 700-student school offers professional dance training, academic education and residential living, all on one site, the only one of its kind in North America.

The site selected for the Ballet School featured several existing buildings. Northfield House and the Academic Building are both century-old heritage buildings, which the architects were keen to preserve and integrate into the new campus.

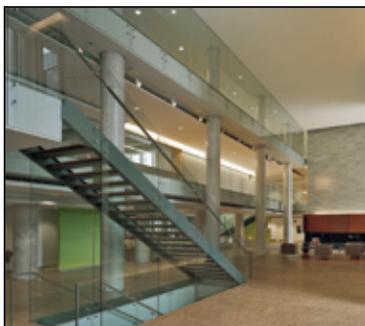
To act as a cohesive unit, all of the buildings needed to be interconnected below grade to allow for movement of material, services and equipment. This proved to be a challenge since the existing buildings were supported on rubble walls over shallow basements. Concrete construction was seen as the only viable option to enable the basements to be lowered and joined contiguously with the adjacent basement structures.

Dance Studios

The primary focus of the development was to improve upon the dance training studios that had been inadequate and in short supply for many years. The Celia Franca Centre is a new development that surrounds the existing Northfield House and connects to both heritage buildings as well as to the adjacent theatre building to the north. The dance studios are large, double storey spaces approximately 15m². The studio floor structures consist of concrete beams and slabs, depressed as required to incorporate sprung flooring systems unique to dance training. The architects were interested in developing a detail that would allow for full height glazing for the stacked dance studios that look out onto Jarvis Street. The concrete floor system was designed to incorporate a folded slab edge that provides a very thin profile along the glass façade. This thin concrete edge provides unobstructed views from within the studios. At the same time the glass façade is emphasized and passersby have an impressive view of activities within the dance studios.

Town Square

The most visible use of concrete on the project is within the Town Square, the meeting place for the students and staff. The square is defined as the space between the Northfield House and the Celia Franca Centre, with soaring ceilings and an abundance of natural light. On the north edge of the square are the slender columns that support the north bank of dance studios. The exposed circular concrete columns were formed and cast with liners that produced a clean, joint free surface. The columns' surfaces are reflective, resulting in a highly polished appearance.



Exterior

Exposed concrete columns are also adopted on many of the exterior elevations of the Celia Franca Centre. The architects were interested in setting back the glazing systems at the lower floors, thus clearly defining the structural supports for the spaces above. It was felt that their intent would be more pronounced by omitting any cladding around the columns and using exposed concrete columns instead.



Owner:	The National Ballet School
Architect of Record:	Kuwabara Payne McKenna Blumberg Architects / Goldsmith Borgal & Company Ltd.
Engineer of Record:	Halcrow Yolles
General Contractor:	Eastern Construction Company Limited
Material Supplier:	St Marys CBM
Concrete Reinforcement Supplier:	Gilbert Steel Limited
Formwork:	Canform Structures Ltd.
Additional Participants:	<ul style="list-style-type: none">• Carpenters Local 27• LIUNA Local 506• Ironworkers Local 721• Aluma Systems Inc.
Project Facts:	<ul style="list-style-type: none">• Completed December 2005• 16,700m²• Project cost of \$100 million



Ceilings

Although not designated in the contract documents as exposed architectural concrete, the undersides of the long span concrete beams are integrated into the ceiling spaces of the dance studios. The construction teams responded positively to the architects' request for a high quality finish, as the final ceiling designs were not completed at the time of casting. The result is a clean, bright, exposed ceiling that has been well received by the staff and students.

Acoustics

In addition to satisfying the architectural objectives for the project, the use of concrete as a design material afforded many acoustical and vibration benefits. The dance studios are arranged in stacked units, adjacent to washrooms, as well as mechanical and electrical service rooms. The concrete slabs, beams and shear walls were integral in eliminating unwanted noise and vibrations from entering the studios.

Architectural Finishes

The ability of the concrete slab and beam systems to incorporate finishes was a key factor in the overall architectural presentation. Several examples of this are apparent within the Celia Franca Centre. At the ground floor level the floor slabs were depressed to allow for the wood flooring systems, kitchen equipment and mechanical air supply. These depressions were easily adapted with the concrete slabs with minimal impact to the headroom below. The second floor corridor between the Town Square and the north dance studio block was purposely set back to allow the exposed columns to extend uninterrupted over two floors. A cantilevered concrete slab system supported from the dance studio slab extends southward, set back from the column line. The thin tapered slab edge profile desired by the architects was achieved through the use of concrete.

Conclusion

The National Ballet School of Canada has developed a remarkable facility, incorporating the existing heritage buildings within the site as well as state of the art dance training studios. The use of concrete was critical in enabling many of the outstanding architectural concepts to become reality. Most importantly, the facility has proven a great success for both the staff and students of the school.



In 2000, the Ontario Cast-In-Place Concrete Development Council (OCCDC) was formed to aid the owner/developer, architect/engineer and design-build contractor in the decision-making process of choosing the best construction material for the framing system of new cast-in-place structures.

OCCDC promotes the benefits of reinforced concrete as the construction material of choice based upon the following advantages:

- fast-track construction
- costs savings
- structural advantages
- environmental considerations
- local economy benefits

The Members of the OCCDC include (alphabetical order):

Aluma Systems Inc.
Carpenters District Council of Ontario
Concrete Forming Association of Ontario
Ironworkers District Council of Ontario
LIUNA—Ontario Provincial District Council
Ontario Formwork Association
PERI Formwork Systems Inc.
Ready Mixed Concrete Association of Ontario
Reinforcing Steel Institute of Ontario



365 Brunel Road, Unit #3
Mississauga, Ontario L4Z 1Z5
Tel: 905-507-1122
Fax: 905-890-8122
Email: buildings@occdc.org