The remodernization of Maple Leaf Gardens involved the reconstruction of the historical building that dates back to 1931. The logistical challenge of this project was not only maintaining the historical integrity of this building, but demolishing it from within and reconstructing new facilities that range from a Loblaws Great Food grocery store to a lower level parking garage. Buttcon Limited also worked with Ryerson University to build its new sports field house. This project involved the new construction of a 250,000 square foot athletic centre with an NHL-sized rink, 4,500 seats, and a basketball and volleyball court.

In recognizing the objectives of the owner to accomplish the construction of this facility, Buttcon Limited provided construction management services to complete this challenging project on time and within budget. We looked at construction methodology, availability of materials, manpower and potential influencing factors to ensure cohesion with the budget and schedule that the client can sustain. The construction of the base building and the Loblaws Great Food grocery store was started in December 2009 and completed in November 2011. The completion of the Ryerson athletic centre followed in August 2012, bringing the total value of this re-modernization to $72 million.

Having demolished the interior of Maple Leaf Gardens to reconstruct various facilities within, concrete was a major construction material selected for this project. Buttcon Limited commends its effective utilization of concrete to meet the Owner requirements and create a structurally sound building. Various factors introduce themselves within the implementation of concrete to match the anticipated design. Factors considered included:

**Acoustics and Vibration:**
due to the fact that this building was intended for parking, retail and athletics purposes, a concrete structure was preferred over that of steel. Concrete was ideal for both sound and vibration concerns given the gymnasium and work out rooms located directly above the grocery store, and the ice rink and seating above that.
Exposed Structure: throughout the building concrete soffits were left exposed to showcase the aesthetically appealing historical elements of the pre-existing structure. As fire rating remains inherent in concrete designs, the concrete exposure was suitable to maintain the building design and safety standards.

Flat Rink Slab: the flat rink slab and the associated piping were set into 12-inch depressions in the structural slab. Both the structural slab and the rink slab were constructed to very stringent tolerances, which allowed for a leveled rink slab and created space for piping and structural necessities.

Framing Systems: the project utilized a combination of two-way slabs with tapered drops, one-way slabs on concrete beams and two-way slabs on concrete beams.

Interior Frame Supports Exterior Walls: the lateral stability of the building was originally dependent on the raked seating. After the seating was removed, the new internal concrete framing provided stability for both the new structure and the original exterior walls. Raked seating with six-inch thick risers and slabs, cast integrally with raker beams, were installed throughout the third floor rink slab.

The amalgamation between the architectural necessities, structural challenges and the use of new products and technologies, bring to life a new and excited Maple Leaf Gardens that will last for centuries.

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

2012 Ontario Concrete Award
Winning Project
Specialty Concrete Applications