

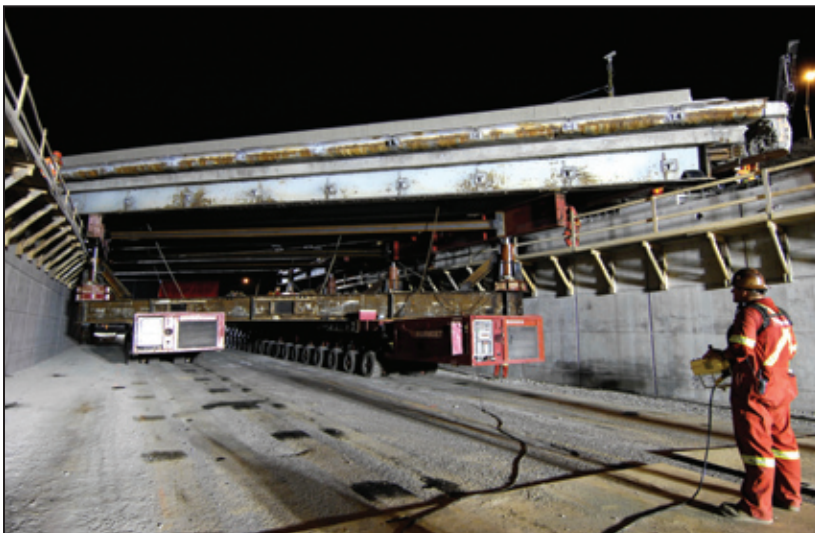
Island Park Drive – Rapid Bridge Replacement

The Island Park Drive project included the replacement of both the eastbound and westbound overpass bridge decks of Hwy 417 that travel over Island Park Drive. The eastbound and westbound bridge decks carry four lanes of traffic with spans of 25.2 metres. The replacements were done in a single weekend shift utilizing rapid bridge deck replacement technology that has never before been integrated in Canadian highway construction projects.

On Saturday, August 11th, in a 14-hour duration, the two existing concrete decks weighing over 650 tonnes were exchanged with two new decks that had been built in an adjacent staging yard.

The contract called for the construction of a staging area in Hampton Park, which is adjacent to the overpass. As the substructure is rehabilitated, two new superstructures were constructed in the staging area to be then “switched” with the existing decks during a pre-determined weekend in the beginning of August 2007. To facilitate the replacement, Hwy 417 would be closed for a period of 15 hours to traffic that commenced on a Saturday August 11th, at 8 pm.

There would be three weekends of traffic lane closures prior to the rapid lift weekend to allow for approach slab removal and saw cutting of the structure to “free” it from the existing abutments. An additional two weekends to allow for the construction of the new approach slabs and the completion of the median barrier wall after the rapid lift was also required.



- Owner:** Ministry of Transportation of Ontario
- Engineer of Record:** McCormick Rankin Corporation
- General Contractor:** Dufferin Construction Company
- Material Supplier:**
- Lafarge
 - Mammoet Canada Eastern Ltd.
- Additional Participants:**
- Brown and Co. Engineering
 - Genivar Consulting Engineers
 - Harris Rebar
 - International Union of Operating Engineers, Local 793
 - Ironworkers Local 765
 - LIUNA Local 527
 - National Concrete Accessories
 - Stantec Consulting
 - WP Engineering



The equipment used to lift the new and existing decks of the overpass are called “self propelled modular transporters” or SPMTs. They are made up of a series of special flatbed trailers that can be combined end-to-end and side-to-side in different configurations depending on the size and shape of the load. Engines are attached to a group of SPMTs so that the assembled unit can move itself.

Rapid Bridge Replacement has been an accepted method of construction in Europe for over 20 years. In recent years, the United States has initiated the concept in a number of states. The Ministry of Transportation of Ontario has taken a leadership role in bringing the new technology to Canada for use in highway construction for the first time.

Although there were a few complications with the replacement, the project was seen as a huge success. It had set the stage for multiple opportunities for the new technology to be utilized across the province on Ontario’s rapidly aging bridge network that includes approximately 2,800 bridges with an average age 37 years.

The decision by the MTO to incorporate rapid bridge replacement technology in the Island Park contract had significant positive impact on many levels. The project was completed in a single construction season vs. the conventional approach that would have taken two seasons. The overall project cost savings to the owner was conservatively estimated at greater than two million dollars. Equally important, the safety of the workers and travelling public was improved while the project impact on the environment and community were greatly reduced. The Island Park project has shown that given the right environment, rapid lift technology can be implemented to complete the project and realize overall project cost savings.



2008 Ontario Concrete Award winning project for
Specialty Concrete Applications

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



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