

Redevelopment Update

Construction progressing on new patient care and research wing at University Centre

Building a firm foundation

You may find it hard to get excited about the foundation work for our new patient care and research wing. After all, when the building goes up, we won't even see the foundations. But in fact, this is among the most important, painstaking phases of the construction process. The foundation must be strong and stable enough to safely support the entire weight of the new wing – for many years to come.

Caissons – the first line of support

The first elements of the foundation - caisson support columns - are being installed and should all be in place by mid-February. The construction workers are using a mechanical digger to drill 32 round holes, each about 30 to 60 inches in diameter and 10 to 15 metres deep. As each hole is drilled, a metal liner is inserted to prevent the cavity from caving in. Then the workers use a crane to drop a wire cage, made up of steel reinforcing bars, inside the liner. The final step is to pour concrete around the cage to form a strong vertical column. The largest of the finished caissons will weigh about 12 metric tonnes or approximately 26,400 pounds.

“The load on each of these caissons is in the neighbourhood of 35 metric tonnes,” notes Guido Paniccia, Aecon’s Construction Manager for the project. “They are very significant to the supporting structure and many of them are being embedded into the rock bed for added stability.”

Elevator up/Excavation down

Once the caissons are in place on the east half of the site, work will begin on constructing the main vertical columns that will support the south elevator shaft for the new wing. The shaft will house four elevators. Meanwhile, a portion of the west side of the site will be excavated another 20 metres to accommodate the Challenging Environment Assessment Laboratory (CEAL), the centrepiece of Toronto Rehab's initiative to develop one of the world's most advanced rehabilitation research facilities. (For more information, visit www.torontorehab.on.ca/research). The sub-basement excavation should be completed by the end of February. Caisson columns will then be installed in this newly-excavated area just as they were on the rest of the site.



A preview of Toronto Rehab's new patient care and research tower, University Centre, 2011 (from south/west corner of Murray and Elm Streets)



Caissons A wire cage, with reinforced steel bars, is lowered into a pre-drilled caisson hole. Concrete is then poured in and around the cage to create a strong support pillar. The foundation of the new wing will be supported by 32 of these caissons, each about 30 to 60 inches in diameter and 10 to 15 metres deep.



Work is well underway on one of most important stages of the construction process - the new wing foundation.

Beams from Belgium

In late February/early March we'll receive a shipment of eight huge steel trusses that will support the ground floor over the Challenging Environment Assessment Laboratory (CEAL) area. According to Guido, the horizontal beams are "uncharacteristically large" for this type of work, but are necessary because of the wide open spaces – without any vertical supporting columns - that the CEAL needs to accommodate its specialized equipment.

Cast from extremely strong steel and weighing 24-42 tonnes each, the trusses are designed to span wide spaces and support particularly heavy loads. Components of the trusses are being manufactured in Belgium because there are no North American mills with the capacity to make beams of their dimension and strength. The trusses will be shipped to Canada by boat – a journey that will take about eight weeks.

Concrete Pour in the Spring

In late March or early April we can also look forward to seeing the concrete ground floor of the new wing being literally "poured". And from there, we can watch the exciting progress of the structure as it grows, floor by floor, at the rate of approximately one floor every three weeks, to completion.

Watch our progress

We have installed a webcam on the roof of a neighbouring building so that you can enjoy a great view of the new south wing as it begins to take shape. To view the site, go to www.torontorehab.com and click on the "Read about our Redevelopment" section.

What's happening when

Now – late February 2009

- Installation of construction supports (caissons) to anchor the new structure
- Excavation of the sub-basement level of the future Challenging Environment Assessment Laboratory (CEAL)
- Construction of main vertical columns to support the south elevator shaft for the building
- A trench will be dug on the north side of the main University Avenue entrance (through the lawn area) to accommodate ENWAVE deep lake cooling system pipe connections. The work will not impact access to the building. Every effort will be made to safeguard nearby trees.

March 2009

- Steel trusses delivered and installed over the future CEAL area

April 2009

- First concrete pour for the ground floor of the new wing
- Exterior construction begins

December 2009

- Roof is completed

January – March 2010

- New wing – interior work

Late 2010 – late 2011

- Internal renovations to the east and north wings of University Centre

NOTE: to help keep the project on schedule, the construction workers will be on site all or most weekends until the end of April 2009.

Questions? Concerns?

Email: redevelopment@torontorehab.on.ca

Call the redevelopment hotline at ext. 3343