

September 24, 2010

## Tilt-up panel the largest ever created by SiteCast Construction

Ottawa's SiteCast Construction Corp. has long been a champion of tilt-up construction techniques.

The building team recently erected the largest tilt-up panel in the company's 20-year history — a single 47-tonne unit forming the front entrance of a Staples retail outlet at the Kemptville Colonnade retail centre in Kemptville, about 50 kilometres south of Ottawa.



SITECAST CONSTRUCTION CORP.

A massive tilt-up concrete panel is lifted into place for the Staples outlet in Kemptville, Ont.

"The project broke ground this spring, but the outlet had to be completed in time to take advantage of summer back-to-school sales," says Mark Doll, project manager with SiteCast. "When we were awarded the contract to build the retail outlet, the construction method wasn't pre-determined. Staples told us what the building should look like if it were a typical cavity-wall building, and we made the engineering case that tilt-up offered the best solution and the shortest construction times."

Tilt-up construction offers load-bearing walls that are held in place by the roof structure of the building. With no perimeter columns, the store can make full use of the space, with stock and display shelving placed right up to the outside wall without obstruction.

"There's also greater efficiency in heating and cooling, because of the mass of concrete and because the panels have built-in Styrofoam insulation," says Doll.

The largest of the wall panels measured 13 metres across, 7.2 metres tall and a metre thick. While the other panels were cast exactly in place for tilt-up, the size of this panel required the construction team to cast it further from the building, then move it into place with a crane.

"We offset the casting bed near the front of the building where there was more room, but we couldn't move it too far, or the crane we engaged for the job might have difficulty in raising it and placing it that distance," says Doll.

Although the face panel was thicker than the other wall panels, much of the thickness resulted from adding architectural details required by the retailer to match its corporate identity and the look of the other retailers in the shopping complex.

Casting and curing of the front panel required a little more than a week, with three separate pours — first to form the face of the panel, next to add the insulation layer and structural members and finally the inside surface.

In final construction, the insulation layer of the panels join up with the other wall panels and ceiling to create a continuous building envelope.

"The casting also required us to include some other complex features in the walls, including cast emergency, data and electrical outlet conduits that went from the junction box to the roof," says Doll.

SiteCast engaged the largest crane offered by Regional Crane Rentals in Ottawa, a 300-ton Grove machine. "Our only limitation for panel size and weight is the availability of the cranes to lift them," says Doll.

The project was constructed in mid-April and, with co-operative weather, the exterior of the building was completed in just a few days. Local sub-contractors completed the building interior.

SiteCast continues to promote tilt-up construction in the Ontario and area market — it's currently a more popular construction method in British Columbia and along the U.S. west coast. Doll says he often has to explain the distinction between the terms "panel" and "slab" when he discusses tilt-up projects with people who are less familiar with the technique.

"Many people refer to the walls as 'slabs,'" he says. "I think that's because they originally see them cast horizontally like floor slabs. They may look like slabs until they're cured, but when we tilt them into place, they're panels."

SiteCast continues work at the Kemptville Colonnade, building a ScotiaBank branch and multi-tenant retail plaza, which will also employ tilt-up construction techniques.

### Source:

Daily Commercial News – October 20, 2010  
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