

Back to First Canadian Place — the big peel

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Cynthia Vukets

In just four months, Pat Crosbie designed a 113,000-kilogram scaffold that hangs from the roof of the tallest office building in Canada and is being used to peel an old marble skin off a Toronto landmark.

“It was a fun project,” he says of designing the suspended construction rig that is integral to the remodelling of First Canadian Place.

The building is getting a new face, but first, workers have to peel off the old one. That means removing 45,000 slabs of marble weighing 90 kilos each; some from as high up as 275 metres.

Crosbie, the project manager at Atlantic Hoisting & Scaffolding, needed a plan.

“The stone was not holding up,” explains Jim White, vice president of construction for Brookfield, the building owner.

So Crosbie designed a three-storey movable platform with 14 separate sections that would be suspended from the top of the building and slide up and down as work was completed on each floor. A team of architects, construction managers and engineers developed a plan to strip the building of its original marble and “re-clad” it with high-tech fritted glass.

The work is done in mid-air, on a three-storey platform. From the bottom “floor” of the platform, workers remove the marble panels and transport them down a hoist to the ground for repurposing. The marble will be recycled into smaller tiles, ground up and used as white ballast for roofs and even turned into sculptures.

The rig’s middle level is mechanically connected to the building through use of turnbuckle and brackets connected to the building’s steel. Those are detached when the platform needs to slide down a floor and reattached to the floor below.

And the top storey on the platform is where the brand-new glass is attached. Glass panels are lifted up the hoist three at a time and winched into place with a series of trolleys, then installed on the building. This process will happen 72 times until the entire building has been stripped of marble and refitted with glass.

The rig is suspended in mid-air, accessible only by four hoists — narrow elevators wrapped in aluminum mesh — and built to hold 160 people plus tonnes of marble and glass. The entire platform is wrapped in mesh, to ensure nothing, and no one, falls out and down.

Winches on the roof run bridge cables through window washing tracks, attaching to each section of the platform. Most of the platform’s weight, explains Crosbie, is borne by the cables.

The platform is currently at floor 50. The goal is to be down to floor 10 by December.

“We don’t want to spend another winter up here,” says Ellis Don construction manager Mike Brodigan.

The rig was winched all the way to the top in June 2010. Crosbie says the crew made him be the first to ride up in his invention. After everything ran smoothly, work began in early July.

The platform has its own lighting and electrical outlets, helpful during the “night” shift from 3 a.m. to 7 a.m. There are three shifts, says Brodigan, with the nighttime shift designated to do the loudest demolition work, so that office workers during the day aren’t disturbed.



Jim White, V.P. construction, Brookfield; Mike Brodigan, construction manager, Ellis Don and Pat Crosbie, of Atlantic Hoisting, are framed by First Canadian Place, which is undergoing a dramatic makeover as all the marble tiles are removed and replaced with triple layer glass sheets. May 18, 2011.

BERNARD WEIL/TORONTO STAR

“The thing that’s so cool is that it’s unique. It’s never been done. It’s Canada’s tallest building,” enthuses Melissa Coley, Brookfield’s vice president of communications.

Of course, this all started when a slab of marble came loose in 2007 and plummeted 50 storeys. No one was hurt, but one can imagine the mass panic inside Brookfield’s offices at the thought of the tower crumbling piece by piece onto the street below, crushing unlucky passersby.

First Canadian Place, designed by Edward Durrell Stone and Bregman+Hamann Architects, was built in 1975. The marble to cover it was imported from Italy. But the stone didn’t fare well in Canada. Now, New York-based architecture firm Moed de Armas & Shannon is on-board to help with the redesign.

Architect Dan Shannon helped choose the triple-glazed laminated glass with ceramic fritting in a triangular pattern to create the 2.4 by 3-metre panels of glass. Each one replaces eight marble panels.

Shannon explained the stone slabs — at three centimetres — were simply too thin to hold up in Canada. The glass, which is manufactured in Brampton, should last and help the building achieve LEED certification. Plus it looks pretty.

“We didn’t want to create a new building. We wanted to re-establish First Canadian Place to its prominence in Toronto,” says Shannon. “As we’re seeing it unveiled, I think we’ve achieved that.”

By the numbers

45,000 — number of marble panels that have to be removed from the building and repurposed

1 — number of marble slabs that fell from the building’s 50th storey in 2007, prompting the recladding project

90 — weight, in kilograms, of each slab

100 — cost, in millions, of the recladding and interior redesign project

72 — floors in the building, the “tallest occupied building in Canada”

113,000 — kilograms the construction rig weighs

160 — people who can be up on the construction rig at any one time

3 — days it takes the current crew of 80 workers to finish a floor

15 — height, in metres, of the suspended three-level construction rig

265 — wind speed, in kilometres per hour, the rig can withstand

Marble vs. glass

How does the old material stack up against the new?

90 vs. 453 — weight, in kilos, of each panel

35 vs. 100 — lifespan, in years, of each material

320 vs. 80 — number of panels needed to cover a floor

45,000 vs. 5,625 — number of panels that will cover the entire building

Being ground and used as white ballast for rooftops, repurposed as tiles, carved into art pieces vs. should stay on the building for a very long time

Naturally veined vs. triple glazed, fritted glass with triangular design to mimic marble’s ability to catch light

Made in Italy vs. Made in Brampton

Dull and dirty from pollution vs. bright, sparkling white