

Toronto's financial district is spreading south of the tracks with the opening of the Southcore Financial Centre's first of three buildings, the 26-storey PwC (Price-waterhouseCoopers) Tower. Originally part of Toronto's waterfront, the site was later covered by rail lines and buildings, then fell into disuse before becoming a parking lot.

In September 2011, the building's namesake moved in, along with many other businesses (the tower is 98 per cent leased). "The building provides tenants with a supportive office environment that offers incredible access to daylight, seductive views, loft-like space and a LEED-Gold-targeted sustainability approach," says Chris Couse, principal-in-charge of KPMB Architects.

The building came together using an increasingly popular integrated approach, "synthesizing inputs of the various design professionals, numerous stakeholder groups within GWL Realty Advisors Inc, contracting forces, municipal and regulatory bodies, and adjacent land owners," says Gunars Robeznieks, regional manager with Pivotal Projects Inc and Pivotal's Project Director representative at the PwC Tower.

The philosophy of integration spread to the electrical systems. "We worked with the design team to implement systems convergence in the building using Cisco switches," says Joe Berardi, executive vice-president of Mulvey & Banani International Inc., of the building's Cisco Smart + Connected IP network. "All electronic components communicate over one common backbone: lighting control, window blind control, building automation system, security system, electronic metering system. And it's expandable. The same service can be offered to tenants."

"We got all the 'proprietaryness' of the system out of that facility," explains Stephen Foster, director of ICT services for EllisDon Corporation.

"PwC has 646 offices," Foster offers as an example. "They wanted to install traditional light switches and dimmers. We put the light switches on the phones and saved them \$342,000. There's a myth about smart buildings costing more to build. We have documented proof that we can build it cheaper and make it more efficient."

In Toronto, the stormwater runoff rate post-development must match the pre-development runoff rate. "A rainwater cistern provides both stormwater management and grey water for toilets and irrigation of the development's green roofs and planting beds," notes Kaid Al-Ani, associate partner with The Mitchell Partnership Inc.

"We developed an energy-efficient lighting system," says Berardi. "The whole tower has a dimmable lighting



18 York Street – PwC Tower

by Luigi Benetton

control system integrated with occupancy sensors as well as photosensors for daylight harvesting."

The hybrid Enwave/thermal storage concept may be the most innovative mechanical system in the building. "Many buildings in the downtown core run off Enwave deep-lake-water cooling," says Al-Ani. "The system is close to peak usage, but the off-hours market

was still wide open. At night, when the buildings are unoccupied and the solar load isn't there and the temperature drops, there's a substantial drop in load. We found a way to tap into that period of time, to store the energy at night and reuse it during the day."

Six 500-cubic-metre tanks, five of which are full of water at any one time, are part of a closed system used to cool

the building. The building cools the water in the closed system at night and uses it during the day, thus benefitting from lower off-peak Enwave rates. Both the lighting and cooling systems contribute to an energy model for the building that projects energy performance better than 37 per cent below the Model National Energy Code for Buildings (MNECB) guidelines.

"We are tracking in excess of 30 per cent recycled content versus a LEED target of 15 per cent," says Couse. "Recycled materials include recycled aluminum in curtainwall extrusions, recycled gypsum in gypsum board and recycled steel in concrete reinforcement."



COURTESY KPMB ARCHITECTS

Other innovation credits available to the project include 100 per cent underground parking and water use reduction of over 40 per cent.

Few green roofs sit as high as they do on the PwC Tower. "This required thoughtful consideration to deal with the severe microclimate and wind uplift conditions," says Couse.

PwC's third-floor podium provides access to a garden designed to mature

over time into a slice of Saint Lawrence Lowland ecology. "It will include 16 species of trees and shrubs," says Couse. "Silver maple, Canadian redbud and eastern hemlock will provide a canopy above an understory of 17 species including wild ginger, sweet woodruff, Jack-in-the-pulpit and, of course, trilliums." Plants consist of indigenous and native/adaptive species.

While commuters may see the third-floor podium garden from the trains, rail mishaps will not affect the building. "The four-foot-thick crash wall is designed to resist train impact," says Sobhy Masoud, senior associate, Halcrow Yolles.

"The crash wall at its closest point to the tracks is about 20 feet away and is about 20 feet above the tracks," adds Pivotal's Robeznieks.

A covered pedestrian bridge 18 feet above street level linking the PwC Tower to the office tower across York Street was built using structural steel trusses with small members to allow for better visibility. This bridge links to Toronto's underground PATH network. PATH will continue west to the other two Southcore buildings, the Bremner Tower and Delta Hotel, and onto a bridge leading to the Metro Toronto Convention Centre.

The structure is composed of a central concrete core and perimeter columns only with no intermediate columns. This allowed for 45-foot spans on typical office floors that are column-free.

Designers lavished luxurious interior finishes throughout the building. Ontario Algonquin limestone floor and wall finishes adorn lobbies and washrooms, walnut panelling and walnut doors accent public areas, acid-etched mirror ceiling and wall features draw the eye in washrooms and elevators, and stainless steel touches accent the entire building.

"The concrete raised access flooring system on tenant floors offers a conventional solidity under foot and provides underfloor air distribution (UFAD) as well as power and data access," Couse says.

The exterior is no less attractive and practical. "The streetscape, sidewalk materials and patterning are tied together for all three Southcore buildings," says Bruce Corban, a partner with Corban and Goode Landscape Architecture and Urbanism. "Frontage for all three buildings will have one consistent site treatment as a campus. When you're on this block, you will know that this block is tied together in a cohesive way by the paving underfoot, the way street trees are planted and the continuity of urban design." ■

LOCATION

18 York Street
Toronto, Ontario

OWNER

bciMC Realty Corporation

DEVELOPER

GWL Realty Advisors Inc.

ARCHITECT/INTERIOR DESIGN

KPMB Architects

CONSTRUCTION MANAGER

EllisDon Corporation

PROJECT MANAGER

Pivotal Projects Inc.

STRUCTURAL CONSULTANT

Halcrow Yolles

MECHANICAL CONSULTANT

The Mitchell Partnership Inc.

ELECTRICAL CONSULTANT

Mulvey & Banani International Inc.

COST CONSULTANT

Curran McCabe Ravindran Ross Inc.

(now Turner & Townsend CM2R)

BUILDING ENVELOPE CONSULTANT

Brook Van Dalen & Associates

LEED CONSULTANT

Halsall Associates

LANDSCAPE ARCHITECT

Corban and Goode Landscape Architecture and Urbanism

TOTAL AREA ABOVE GRADE

651,000 square feet

TOTAL CONSTRUCTION COST

\$200 million

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