

# case study



## Setting New Standards for Building Integration

Toronto's Menkes 25 York Street tower pushes the envelope of intelligent building design.

**Honeywell**

# The Power of Integration: New Toronto Commercial Tower Pushes the Envelope in Intelligent Building Design

In the spring of 2005, the Toronto commercial building market was on the move with a number of major organizations in the area evaluating relocation options. With a strong and thriving business environment — spurred by growth in financial services and technology — many local companies were quickly outgrowing their existing spaces. In an attempt to meet the varied needs of these potential tenants, several developers began searching for sites to build new facilities.

Menkes, one of the leading real estate development companies in Ontario, located and acquired a site on York Street in Toronto's downtown waterfront district that for years had been unused, abandoned railway land, and began developing specifications for a new building. Engineers envisioned a facility that would not only meet the functional needs of its tenants, but also use environmentally friendly materials and building practices per the Leadership in Energy and Environmental Design (LEED®) requirements.

"We knew from the beginning we were aiming to build a LEED-certified facility," said Gary Handley, project manager at Menkes. "It was something that was very important to Menkes in our efforts to be good stewards of the environment. And very often, it is becoming important criteria in many tenants' evaluation processes when selecting new space."

As the building design took shape, Menkes secured TELUS, the country's

second largest telecommunications company with more than 6,100 employees in the Toronto area, as its anchor tenant for the new facility. TELUS was attracted to the new site in part as a green facility that supported its own corporate social responsibility initiatives. However, the company was also very interested in maximizing its personal control of the space to be aware of what was happening across the building at a much greater level of detail than ever before.

To that end, TELUS worked with Building Intelligence Group, an independent consulting firm that provides technical and strategic consulting services, to develop a detailed report outlining their vision for the world's most intelligent green building.

"TELUS handed us the report and told us to 'go build it,'" Handley said. "If the technology was available, they wanted to make sure we evaluated it for potential inclusion in the new space. Their expectations were high, but we

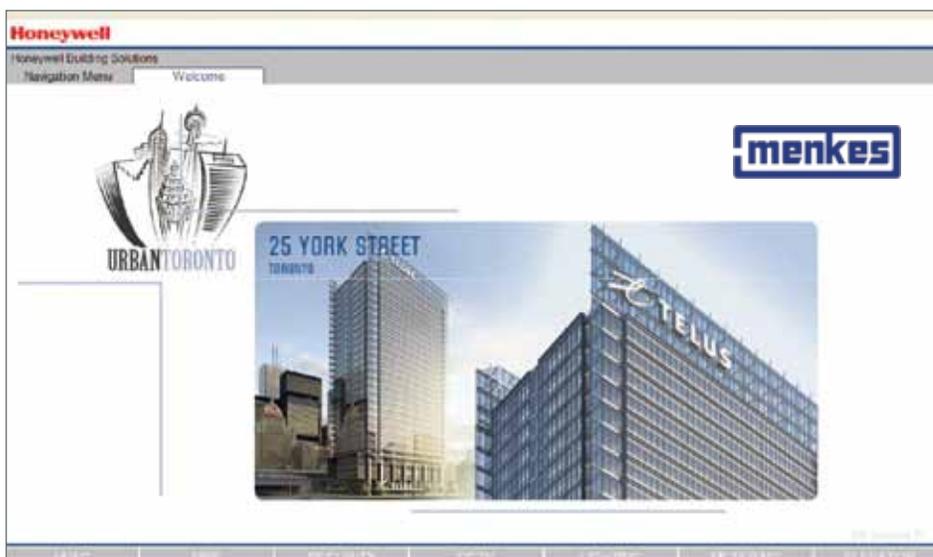
knew that many of the ideas for building system integration were achievable and would help reduce the total life cycle cost of the facility in the long term."

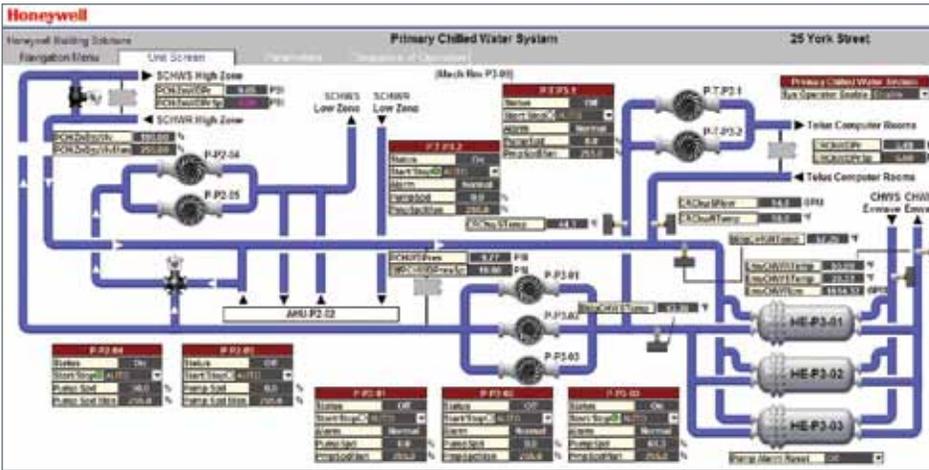
## Why an Integrated Building?

According to the Continental Automated Buildings Association (CABA), total life cycle cost of a facility has become one of the primary drivers in intelligent commercial construction. While some green specifications and standards focus on the "skin and skeleton" of a building, a truly integrated building also addresses the performance and costs of the internal systems themselves — from construction and ongoing changes and upgrades to operating, maintenance and utility costs.

An integrated building allows systems like heating, ventilation and air conditioning (HVAC), access control, life safety and lighting to share information and strategies with an eye on reducing energy consumption, improving security, providing value-added functionality and making the building easier to operate. An integrated system can not only increase energy and operational efficiency by 20 to 30 percent based on industry averages, it can also provide a level of occupant control unmatched by single-purpose, non-integrated systems.

Because Menkes had budgeted for conventional building systems as part of the initial specification, it wanted to ensure an integrated system would not increase project costs and limit its ability to meet other tenant needs and requests. So to help identify the right technology and approach, the developer turned to Honeywell, a global leader in building systems and services.





## The Power of Integration

Today, 25 York Street is one of the most intelligent and energy-efficient buildings in the world. Every system that helps manage the more than 750,000 square-foot tower is part of an enterprise-wide solution that allows sensors and devices to share information that helps provide value and comfort to tenants. Across the facility, there are more than 50 aspects of integration between all the systems, including:

- Building automation/HVAC
- Lighting control
- Energy metering
- Access control
- Digital video surveillance
- Elevator control
- Parking control
- Life safety/fire alarm

At its core, the entire system operates on a fiber-optic Ethernet network and is controlled via the Honeywell Enterprise Buildings Integrator (EBI), a facility management platform that helps reduce operating costs by integrating core building technologies. Facility managers access EBI through a centralized graphical interface, which puts control of all building systems at their fingertips, enabling them to manage and monitor system operations from a single location.

There were skeptics that the level of system integration specified for the building could be achieved, but by the end of the project all parties were very pleased with the results. As Roy Budgell, general manager of 25 York Street commented, "When I first reviewed the scope of the Honeywell systems integration, I thought that we would have major issues implementing a system this complex into our property. To my delight, the Honeywell system has been fully integrated and works beautifully."

Using the open BACnet® communication protocol, EBI can provide the ability for individual tenants to have their own Web-based access to systems in their space, including temperature control, access control and energy monitoring, should the property manager wish to make this feature available to their tenants. Web access is configured for remote or off-site access, delivering an extremely adaptable system that can be expanded as tenant needs change.

"The entire building system is extremely configurable through EBI," Handley said. "Because every system is so tightly integrated, we've realized efficiencies and identified opportunities to improve building performance that we frankly hadn't considered during our initial design considerations."

## The Road to LEED Gold Certification

With the \$250 million construction project complete and occupancy at 100 percent, 25 York Street is today considered one of Toronto's most impressive office towers.

Through an intense focus on building integration and an eye toward green building, Menkes has already delivered significant energy and environmental benefits to its tenants. Compared to a traditional office tower of its size, 25 York Street uses 47 percent less energy. Menkes also used 15 percent less raw material by incorporating recycled building supplies during construction.

The building has also recently gained recognition within the commercial real estate community, including receiving the 2009 "Office Development of the Year" award from the Greater Toronto chapter of NAIOP, the Commercial Real Estate Development Association.

Based on its combined energy, environmental and integration achievements, Menkes achieved LEED Gold certification, one of the US Green Building Council's highest designations for excellence in green building design.

"Some people describe this building as a spaceship when they talk about its capabilities," Handley said. "From advanced building automation, innovative lighting strategies and access control, 25 York Street is a showcase example of the power of building integration."



## Building Automation and Lighting Control

The building automation system employs Honeywell ComfortPoint™, allowing for the extension of automatic temperature control to the entire space. Once connected to the base building system, operators can manage temperature settings through a Web interface, allowing scheduling based on time of day, occupancy or any other criteria.

ComfortPoint allows for an unlimited number of controllers and devices to be installed in each tenant area as well. The base building system is comprised of controls for the HVAC units serving the displacement ventilation system. This includes automatic damper control for individual offices and meeting rooms, as well as any supplemental HVAC equipment that is installed, such as server room air-conditioning units and exhaust fans.

In addition, automated peak shaving programs can be implemented, which lower the electrical demand at peak periods by slightly adjusting temperature and lighting levels. And to ensure employee productivity, carbon dioxide sensors are also incorporated to monitor air quality and introduce more ventilation in areas such as meeting rooms during high occupancy periods.

## Access Control

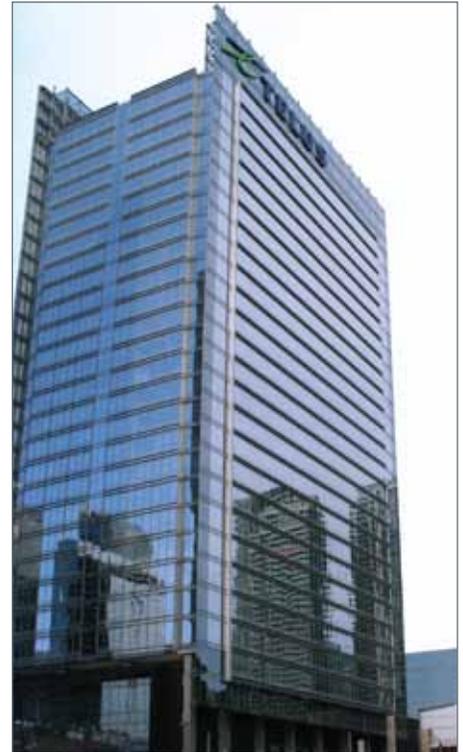
The access control system fully ties together parking entrance, elevators, floor access and any other areas requiring security. The base security systems, which employ Honeywell

Temaline™ smartcard readers and Honeywell Digital Video Manager™, are configured in a client/server arrangement which allows tenants to have their own password protected and encrypted security management. This architecture allows for unlimited addition of card readers, as well as fixed and pan-tilt-zoom cameras that support video viewing and recording.

Honeywell Security Manager integrates access control and surveillance technology into other building systems, including an IP-based intercom system for reception and other unstaffed areas, such as underground parking. Security Manager is also linked to the elevator management system, allowing tenants to lock down sensitive floors to only those with a valid access credential. Security Manager is integrated to elevator video media screens, providing two-way visual communication between elevator occupants and security personnel should assistance be requested. This feature provides building occupants with a sense of comfort knowing a live person is there should a situation arise.

In addition, video cameras can record and store images of all staff and visitors as they enter and leave the facility (including time and date stamp). Plus, card credentials and elevator control can be used to track occupant access after-hours so tenants are fairly and accurately billed for their energy use.

“Tenant comfort is unparalleled,” Handley said. “Through advanced integration, occupants enjoy a brighter space with better air quality and a more secure work environment.”



## Find Out More

To learn how an Energy Savings Performance Contract can save money for your facility, contact your Honeywell representative, visit [www.honeywell.com/buildingsolutions](http://www.honeywell.com/buildingsolutions) or call **289-333-1369**.

## Honeywell Building Solutions

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SL-53-2407  
July 2012  
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