



Redevelopment & Expansion – Joseph Brant Hospital

by CHRISTINE MORRISSEY

Burlington in Ontario has been consistently ranked as one of the best places to live and work in Canada, and so when the Ministry of Health and Long-Term Care, Infrastructure Ontario, the City of Burlington and the Local Health Integration Networks (LHIN) announced plans to collaborate on a new project to redevelop and expand Joseph Brant Hospital, it was welcomed with open arms by the rapidly growing community.

The project was completed in two distinct phases. Phase one saw the construction of the Halton McMaster Family Health Centre, hospital administration, and new parking facility, while phase two saw renovations to the existing hospital and the construction of the seven-storey Michael Lee-Chin and Family Patient Tower, which consists of a podium and penthouse level, and contains the main hospital lobby, information desk, gift shop, emergency department, cancer clinic, surgery, ICU and acute medicine.

The highly anticipated refurbishment and addition, which is now complete, is part of the hospital's long-term plan to lead the way to a new era of modern medicine. "There's a lot of evidence to show that a patient's environment can have a huge impact on recovery," says Mario Joannette, chief communications officer at Joseph Brant Hospital. "We want it to feel warm and welcoming and not add to people's stress. We wanted to deinstitutionalize the institution."

According to Henri Dekker, director of redevelopment and facilities

at Joseph Brant Hospital, there were two major areas that were the focus of redevelopment. "The first was a new ambulatory care area, which is something the hospital didn't have in the past. We were able to take what was in essence the old emergency department and rebuild it into a state-of-the-art ambulatory care unit." Dekker adds that the second was the expansion of the diagnostic imaging department, to provide a better and more efficient service to the community.

To minimize impact on daily hospital operations, the new tower was built first to allow spaces to be emptied in the existing structure and then renovated. "We spent a lot of time training and preparing staff, community partners, and volunteers ahead of the move," explains Joannette. "It takes a lot of good communication with the public as well – we couldn't have people showing up to the old emergency department seeking help once it had been closed."

The site design for the hospital was predicated on sound urban design principles that are aligned with Joseph Brant Hospital's vision and the Campus Master Plan. "Central to the design is the concept of integrating a modern facility sensitively and respectfully into the existing fabric of the site as well as creating a fully accessible, walkable, health-care campus that respects and establishes strong connections with its immediate man-made and environmental context," explains Domenic Virdo from Adamson Associates Architects.



As is common with such projects, when it came to the construction, general contractor EllisDon and the structural consultants RJC Engineers were faced with the challenge of laying foundations on a tight site. "With Lake Ontario so close, deep foundations were needed, but drilling caissons require a certain amount of space for the machinery," says Jennifer Watson, lead structural engineer from RJC Engineers. "The new patient tower also has taller floor-to-floor heights, as per modern recommendations, so we needed to develop a strategy to connect the existing structure with the new build."

To establish this clear connection between the existing and new building, Parkin Architects ensured strategic placement of the elevators. "The result of this vertical linkage allows the discrete movement of patients between all levels of the existing and new components of the hospital without traversing public areas," says John Christie, lead project architect and clinical planner from Parkin Architects Limited. "Additionally, the entrance to the existing hospital [which was

maintained], the new entrance on the lake side, and the bridge connection to the parking structure are all linked to create an intuitive and obvious patient and visitor journey with natural light, seating, retail, and architectural features along the way."

As for the tower, Virdo says that while iconic in stature, its modern aesthetic is made approachable along the entry sequence from Lakeshore Road through the development of a building massing that consists of a series of cascading forms, a sensitivity to materiality (in particular the use of transparency, warm tones and textures), careful detailing of elements closest to and along the pedestrian condition as well as connections to the natural environment.

Along Lakeshore Road, the massing strategy institutes a large set-back above the podium level that creates a human scaled street wall condition along the eastern edge of the site and then again above the last occupied inpatient floor. "In doing so, the building becomes non-imposing, appropriately sized, and is never overwhelming," says Virdo.

High degrees of transparency along the public sequences – such as the main entrance, pedestrian bridge, and cafeteria – establish a visual connectivity between the Hospital and the public realm by blurring the lines between interior and exterior spaces. “Attention to the detailing of elements along pedestrian routes, such as the use of wood panel cladding at canopy soffits, help create a warm and welcoming ‘invitation’ to patients, visitors, and staff,” says Virdo.

In keeping with this welcoming theme, large windows have been strategically placed to allow plenty of natural daylight into the building, and to showcase views from patient recovery rooms of Lake Ontario, the bay, and the escarpment. Dekker adds that this creates an experience that is more akin to being on vacation, “which helps contribute to the healthy recovery of our patients.”

When it came to the mechanical and electrical systems, emergency backup power for the new patient tower was engineered to maintain operations in the event of temporary or sustained power failure. Real Time Locating Systems (RTLS) were implemented to facilitate operations from patient, staff, and equipment

management perspectives. “IP-based systems reside on a converged network, designed to enable ‘intelligent building’ operations,” says Domenic Bonavota, VP at Mulvey & Banani International Inc.

The new tower incorporates an energy efficient mechanical system that ensures a healthy and comfortable indoor environment is maintained for both staff and patients. “The supply air system that provides conditioned air throughout the tower delivers 100 percent filtered and conditioned outdoor air,” notes John Ferguson, a managing principal of The HIDi Group. “None of the air is recirculated. Energy wheels on each air handling unit recover heat [in winter] or cooling [in summer] from the air exhausted from the tower to minimize energy use. A digital building automation system controls all of the mechanical equipment to ensure optimal operation, and automatically activates redundant equipment in the event of a failure.”

Outside, landscaped forecourts at the building entrances, a Healing Garden/Dining terrace, and pathways through the protected wood lot “soften” the surroundings by providing patients, visitors, and staff

opportunities for visual, textural, and sensory distractions. In keeping with the Hospital’s commitment to sustainability, environmental initiatives have been incorporated including green roofing systems on the podium and ambulance garage roof.

Additional planting has been installed along Northshore Drive to provide further landscape treatment. “Planting areas along the street were minimal so planting was restricted to ornamental grasses,” notes James Melvin, principal at PMA Landscape Architects Ltd. “The hospital also installed a large pump structure at the main north entrance area, requiring some changes in the grading and layout of the drop-off drive.”

Planting adjustments around the pump infrastructure were made to hide the exposed utility items, but the grading and layout were a consideration in the design. “In order to meet a four percent maximum slope, carefully placed planters were installed to increase slope distances,” explains Melvin “The entry drop-off area eliminates curbs and replaces them with bollard control features and tactile surfacing, providing accessibility to the front door for all users.” **A**

LOCATION
1245 Lakeshore Road, Burlington, Ontario

OWNER
Joseph Brant Hospital

**PROJECT MANAGER/
PROCUREMENT LEAD**
Infrastructure Ontario

ARCHITECTS
Parkin Architects Limited /
Adamson Associates Architects

DESIGN BUILD FINANCE CONTRACTOR
EllisDon Corporation

STRUCTURAL CONSULTANT
RJC Engineers

MECHANICAL CONSULTANTS
The HIDi Group Inc. / R.G. Vanderweil, LLP.

**ELECTRICAL/ICT/
SECURITY ENGINEERING/
AUDIO VISUAL DESIGN CONSULTANT**
Mulvey & Banani International Inc.

LANDSCAPE ARCHITECT
PMA Landscape Architects Limited

CIVIL CONSULTANT
WalterFedy

ACOUSTIC CONSULTANT
Valcoustics Canada Limited

TOTAL SIZE
400,000 square feet

TOTAL COST
\$450 million

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