

SUSTAINABLE CONCRETE CONSTRUCTION

BRIDGEPOINT ACTIVE HEALTHCARE



PROJECT CREDITS

OWNER

Bridgepoint Active Healthcare

PLANNING, DESIGN & COMPLIANCE ARCHITECTS

Stantec Architecture / KPMB Architects

DESIGN, BUILD, FINANCE & MAINTAIN ARCHITECTS

HDR Architecture / Diamond Schmitt Architects

ENGINEER OF RECORD

Halsall Associates

DESIGN BUILDER

PCL Constructors Canada Inc.

FORMING CONTRACTOR

Alliance Forming Ltd.

MATERIAL SUPPLIER

St Marys CBM

ADDITIONAL PARTICIPANTS

- A.M. Candaras Associates Inc.
- Aluma Systems Inc.
- BASF Canada Inc.
- Brian Ballantyne Specifications
- Brook Van Dalen & Associates Ltd.
- Carpenters Local 27
- E.R.A. Architects
- Harris Rebar
- Ironworkers Local 721
- Isherwood
- J.E. Coulter Associates Ltd.
- Johnson Controls
- LIUNA Local 506
- Plenary Group
- RCG
- Read Voorhees & Assoc

PROJECT FACTS

LOCATION Toronto, Ontario

COMPLETION April 2013

BUDGET \$315 M

VOLUME

- 37,800 m³ concrete (building only)
- 153,000 concrete blocks installed
- 161,000 square feet of curtain wall installed
- 101,630 m³ of bulk excavation below grade

QUICK PROJECT FACTS

The new Bridgeport Health is a state-of-the-art concrete building that has been designed to meet the specialized care needs of people with complex chronic disease and disability.



- Rowan Williams Davies & Irwin Inc.
- Smith + Anderson
- SOTA Glazing Inc.
- Terraprobe Design Ltd.
- The MBTW Group
- The Ventin Group



Bridgepoint Active Healthcare in Toronto is the largest facility of its kind in Canada focused on the treatment of complex chronic disease and rehabilitation. Bridgepoint's leaders envisioned a new way of delivering healthcare in a new kind of hospital: a civic building - an urban centre - in which healthcare and community come together. The intent is to blur the traditional distinction of institutional space and public access and to provide an inspirational setting to assist patients in their recovery.

The design response recognizes the role landscape, nature and community play in supporting health. Capitalizing on an advantageous setting, the building design optimizes the therapeutic benefits of natural light, access to nature, and views of the surrounding park and city skyline to ensure patients and staff feel constantly connected to the world outside. The intent is to inspire patients to be participants in shaping their return to active life. With an average patient stay of three months, there was strong impetus to create an environment that facilitates recovery and wellness. Bridgepoint is the manifestation of the belief in the restorative power of good design. Using a concrete structural framework allowed us to meet these goals.

The building envelope incorporates durable and low-maintenance materials including local stone, concrete, zinc metal panels and lpe wood. Architectural details, textures and finishes de-emphasize the feeling of being in an institution and instead offer comfort and provide an appropriate human scale and a feeling of intimacy.



Bridgepoint's distinctive building envelope contains a fenestration pattern of 495 projecting 'pop-out' vertical frames – one for every patient ed – interspersed with the predominant horizontal fenestration as counterpoint. The massing rests on a concrete flat slab structure with cantilever floor plates around the perimeter. The prominent western façade features cascading terraces made up of large cast in place concrete planters and gently stepping stairs leading north to Riverdale Park. On the east side, a stone-clad concrete cantilevered ribbon delineates the patient room fenestration from the lower public floors. At the south entrance, the concrete cantilever forms an expansive two-story covered drive-thru and main entrance for the day clinics. Large concrete columns support the upper clinical floors and create a sense of arrival and permanence at this important side of the building. Exposed concrete provides an aesthetic contrast and compliment to wood soffits, terrazzo floors and backlit textured glass panels, on both the exterior and interior of the building.

Fully 37,800 cubic metres of concrete was poured for this facility. There were 152 structural caissons drilled for a combined drill depth of 1,052 metres. There was approximately 2.4 kilometres of underground storm/water/sanitary pipe installed. Masons installed 153,000 concrete blocks during construction of this robust building.

This facility opened in 2013 and re-casts Bridgepoint Health as an iconic landmark on a site with 150 years of reform and rehabilitation service. The previous Bridgepoint Hospital was demolished, allowing for greater access to Riverdale Park. A cluster of formed concrete 'mushroom caps' that attest to concrete's versatility and which are emblematic of mid-20th century design, are preserved in situ. The adjacent Don Jail (1864) has been restored and repurposed as the hospital administrative building, now accessible to the public for the first time with interpretive exhibits on what was North America's largest reform facility. The majority of the existing thick stone floors and wood floors were carefully removed so that new concrete slabs could be poured to reinforce the building due to the removal of the prison cells. The heritage finishes were then reinstalled so that the modern interventions are not visible. A dynamic contrast is established between the restored

masonry of the Don Jail and the contemporary materiality of the new Bridgepoint facility. An enclosed elevated pedestrian bridge connects the two facilities.

The landscaping contains extensive concrete planters; accessible pathways and wood topped seating walls that encourage patients, staff and the community to inhabit the landscape and linger to enjoy the gardens. Forming the extensive accessible landscape out of concrete has allowed the design to meet the requirements of the rehabilitation focus of Bridgepoint by providing smooth, clean, navigable surfaces that are hardwearing and aesthetically pleasing. The terraces, steps and ramps are used to teach people with new mobility concerns, how to move through the city with confidence as they heal.

In the bowels of the building, structural gymnastics were required to incorporate a large loading dock area, an indoor swimming pool that hovers over a mechanical room, two levels of underground parking, and a fifth floor mechanical floor. Post-tensioned concrete girders were among the elements used to create the long spans required to transfer loads from the column grid above onto the more open plan below.



The overall master plan heals a site that had otherwise become disengaged with its surroundings. The new hospital building re-casts itself as an iconic landmark in the city in order to connect the entire precinct with the community and the city at large. Socialization is an important part of therapy, and the building offers many gathering spaces for patients, staff and the community, including a large ground floor terrace with a cafeteria, a therapy pool with picture windows onto the park, an expansive green roof terrace and park trail extensions through the hospital campus. A meditative labyrinth is located on the main floor facing the park. Because of the spiritual, earth-based nature of a labyrinth, it was constructed from poured in place, salmon red concrete. Alliance went back to its archives to find a concrete pigment that would not fade to pink, but would remain reddish even after years of use. Many mock-ups were constructed before the system was finalized. Here, a very smooth and durable surface is required to assist those in rehabilitation regain their ambulatory confidence and control. The pattern of the labyrinth was taken from the labyrinth at Chartres Cathedral in France and cast onto the insulated terrace ensuring minimal edges that could form trip hazards and incorporating changes in texture to aid those with visual challenges. The labyrinth has been used by the hospital for a number of clinical and social functions that benefit from the readily accessible, easily navigable outdoor space protected by windbreaks and surrounded by indigenous planting.

Bridgepoint Active Healthcare is LEED Silver registered, which means it is expected to performance at 29 percent below the MNECB. Hospitals have high rates of ventilation and a building envelope so fully glazed presented mechanical challenges to meet these targets. In addition to heat recovery solutions on the air handling system and high efficiency chillers, flue gas heat recovery from the boiler and energy-saving LED lighting throughout, concrete played an important part in the sustainable design narrative. The recycled content of the concrete materials contributed to the overall project recycled content for all construction materials, allowing the project to achieve 2 points. This included the equivalent pre-consumer recycled content of 75.2 percent for poured concrete, 72.5 percent for masonry concrete, 16 percent for masonry block, and 10 percent for masonry grout.

This facility presents a healing environment that is communal and accessible and supports wellness and recovery. The choice and variety of materials convey this objective. Patients and their caregivers are encouraged to convene in a social environment and have the option of many locales to do so, both indoors and outside on the landscaped grounds.

