



Children's Hospital makes a grand entrance

Community relies on local talent to bring its newest addition to the Medical Mile.

With the opening of its new facility, the Helen DeVos Children's Hospital (HDVCH) has literally carved out its own place on the Medical Mile. Standing proudly beside Spectrum Health's Butterworth Hospital in downtown Grand Rapids, the Children's Hospital was the product of more than five years of creativity, problem solving, and collaborative effort.

The window-curtained exterior is impressive, with its pedestrian bridge extending across Michigan Street to connect the Children's Hospital with Tower 35, an office building and parking ramp. Less obvious is a pedestrian tunnel 40 feet below Michigan Street, linking the Children's Hospital with the Lemmen-Holton Cancer Pavilion.

"These are two identifiable parts of the hospital that we can hang our hat on," said Prein&Newhof Project Manager Jim Kirkwood, P.E. "We did the topographic and construction surveys for both the pedestrian bridge and tunnel."

Other Prein&Newhof contributions to the HDVCH include the design of underground utilities and all site improvements, as well as the engineering to reconstruct Bostwick Avenue and the south lane of Michigan Street, each running alongside the hospital.

In addition to its design work, P&N provided construction surveys for the building foundation and all site improvements. And, when Spectrum Health's Butterworth West Wing showed signs of settling after the adjacent parking garage was removed to make room for the new Children's Hospital, P&N was called in to perform survey monitoring.



Photo: Eric De Witt // edewitt.com

P&N also stepped in to assist Soils & Materials Engineers prepare construction drawings for a temporary earth retention system that was required for the 40-foot-deep excavation of the hospital foundation.

Any construction project of this magnitude — each of the hospital's 14 floors is larger than a football field—is complicated. But, when you factor in the medical requirements of a state-of-the-art hospital with the constraints and risks of tucking this massive structure into a demolition site, connected to an operating hospital on

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Project Challenges

- HDVCH's east wall abuts Butterworth Hospital.
- The site changes 35 feet in elevation from the main entrance on Michigan Street to the emergency entrance on Bostwick Avenue.
- The hospital's walls have a zero setback distance from the right-of-way of both streets.
- HDVCH's underground and aerial connections to surrounding buildings were each designed by two different consulting teams.



The interior of the pedestrian bridge across Michigan Street.

Good communication keeps airport project on-track



Turning a stack of plans into a finished structure is never simple. No matter how thoughtful the design, the real world always presents a few surprises. And when it does, hands-on knowledge of the site is invaluable.

Prein&Newhof recently helped smooth the process for Gerald R. Ford International Airport's new parking structure. Staff at the Kent County Department of Aeronautics (KCDA) were having communication challenges with architect Gresham, Smith & Partners (GS&P).

It was thought a familiar face would help, so GS&P added P&N to its team for the construction phase of the project. P&N has worked on more than 75 projects at the airport and is intimately familiar with the airport, its staff, and its way of doing things.

P&N's Jeff Bergstrom, P.E., became the project's Construction Inspector for all civil construction and some architecture aspects — working with the airport, designers, and contractors to quickly resolve issues in the field.

"The link between the designers and contractors is very important," said Bergstrom. "You have to make sure they understand each other. And when problems arise in the field, you work with both groups to resolve them."

Like many P&N engineers, Bergstrom has extensive field experience, which helps him design constructible solutions that work well in the field.

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"Jeff works well with everybody. He kept me in tune and informed, took a firm hand when he needed to, and was very detailed and knowledgeable. I trusted him completely to be honest."

— Ward Walters, P.E.
KCDA Civil Engineering
Manager

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HOSPITAL – continued from front

the side of a steep hill, in an established downtown area — you see an amazing union of science and art.

“This project required real teamwork and a willingness to roll up your sleeves to find workable solutions,” said Kirkwood. “Prein&Newhof was chosen from the start to be part of the design team for our experience and because we are local.”

Both of these qualifications were essential when the project took an unexpected twist in the spring of 2010. The City of Grand Rapids decided to improve an additional 300 feet of Bostwick Avenue along the Children's Hospital and asked Prein&Newhof to design the street reconstruction including water main replacement. It was imperative that this work be completed by August 2010, so Bostwick Avenue could reopen in time for the fall start of Grand Rapids Community College.

“We had four weeks to design and get this part of the project approved so that the contractor could complete the work in time,” said Kirkwood. “We made the deadline. It's what needed to be done.”

If you would like assistance with your development project, contact **James Kirkwood, P.E.**, at (616) 364-8491 or jkirkwood@preinnewhof.com.

PARKING – continued from front

For example, P&N was able to help GS&P improve the parking structure's storm water system to better fit Michigan's climate. Bergstrom was able to find a feasible, low-cost solution that didn't delay construction or significantly increase costs.

“The best response is always to be pro-active,” said Bergstrom. “When there's an issue, you don't go to the client and ask, ‘What do you want us to do?’”

“You work with the contractor to figure out what materials they have available, what their time frame is, and what will be feasible in the field. Then you find some solutions and make a recommendation to the client.”

Bergstrom's understanding of local systems also came in handy when a portion of the storm sewer adjacent to the structure needed to be quickly redesigned to fit between other existing underground utilities.

During the course of the project, Bergstrom gained experience with welding, post-tension systems, and parking structures.

“Jeff works well with everybody,” said Ward Walters, P.E., Civil Engineering Manager at KCDA. “He kept me in tune and informed, took a firm hand when he needed to, and was very detailed and knowledgeable. I trusted him completely to be honest.”

If you need help turning your plans into reality, contact **Jeff Bergstrom, P.E.**, at (616) 364-8491 or jbergstrom@preinnewhof.com.

Prein&Newhof

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Prein&Newhof specializes in civil and environmental engineering, environmental consulting, surveying, GIS, and laboratory testing.

Grand Rapids

3355 Evergreen Dr. NE
Grand Rapids, MI 49525
616-364-8491

Byron Center

365 84th St. SW, Suite 4
Byron Center, MI 49315
616-878-9296

Kalamazoo

7123 Stadium Dr.
Kalamazoo, MI 49009
269-372-1158

Muskegon

4910 Stariha Dr.
Muskegon, MI 49441
231-798-0101

Laboratory

3260 Evergreen Dr. NE
Grand Rapids, MI 49525
616-364-7600

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