



Bluewater Health

Sarnia/Lambton, Ontario, Canada



When Bluewater Health began planning for a major renovation that combined two facilities under one roof and added five floors, they wanted maximum flexibility because they knew change was inevitable. So they opted for reconfigurable solutions in more than 80 percent of the new facility. They realized almost immediately they had made a very wise decision—which continues to yield benefits today.

Anyone working in healthcare today knows that the dynamics are constantly shifting and that change is inevitable. From technology upgrades to improved work processes to new regulations, nothing, it seems, remains static.

More Than 80% Reconfigurable Solutions

So when Bluewater Health began making plans for a renovation that combined two facilities under one roof, adding 285,000 square feet (five floors) of new construction and updating five floors (335,000 square feet) of the existing facility, they planned for change by choosing the most flexible and “forgiving” solutions available. Indeed, they opted for reconfigurable solutions rather than fixed built-ins in more than 80 percent of their new facility.

Case Study

The renovation was the largest public sector redevelopment project in Sarnia-Lambton's history and one of Herman Miller's most comprehensive solutions of reconfigurable casework and walls in North America. These reconfigurable components displaced traditional fixed millwork and fixed wall construction in more than 20 areas of the hospital, from lab and oncology to surgical suites and intensive care units.

"I can't stress enough the importance of having flexibility when planning spaces," says Lisa Regan, Bluewater's Director of Transition Planning. "Our work processes are changing all the time as we implement continuous improvement initiatives."

Like many hospitals today, Bluewater is focused on mitigating risks relating to the care and safety of patients. Design Development was a highly consultative process involving staff, stakeholders, architects, Herman Miller clinical strategists, and the Herman Miller dealership, Facility Resources, who all provided input into the flexible design solution. "It's hard to see what the future will hold, but we did our best based on the way we work," says Regan.

Change Is Inevitable

And as Julie Sless, Vice President Herman Miller Canada Healthcare Division, points out, even though you may be using the most up-to-date design standards and practices when starting a construction or renovation project, by the time a facility is complete, those practices may already be outdated.

"For example, the whole thought process around medication room design was changing while Bluewater was still in the construction phase," says Sless. "It would have been very costly to go in and start making changes at that point, but because everything was reconfigurable, we knew we could change things around later without too much disruption or downtime."

And that's exactly what happened. Hospital staff realized almost immediately after moving in to the new hospital that some adjustment would have to be made, from work area layouts to entire department reconfigurations. As Regan and other staff members learned, "You really have to 'live' in your space awhile before you understand how it's going to work for you."



The care station in the Maternal/Infant/Child area was reconfigured after the initial move-in to open up the work space and reduce distractions in the medication area.

Case Study

Fortunately, the reconfigurable solutions they had chosen, including Ethospace® Nurses' Stations and the Co/Struc® system, gave them the ability to easily change things that weren't working. And that's the beauty of reconfigurable, says Sless. "You don't have to get it perfect because you know you can make changes down the road."

Two Areas Requiring Immediate Change

Two areas in particular were identified as most critical in needing changes, the Emergency Department (ED) and Maternal/Infant/Child (MIC).

In the ED, where nearly 97,000 patients are seen annually:

- There was too much congestion in the caregiver station and not enough workspace to support work flow.
- There was minimal space in the medication preparation area and lack of privacy made concentration difficult. Public access to the Accudose posed a safety hazard.
- Space was too tight in the triage/registration area; patients were also concerned about a lack of privacy and confidentiality.

"From a risk and safety perspective and also from a work flow perspective, we knew right away it wasn't working," says Regan. "Plus, we were about to embark on a new initiative in that department to decrease wait times and improve service, so the space really needed to function well to support that."

Similar problems were occurring in the MIC area. Conditions were cramped in the medication room, and medication security was an issue. Because of the position of a dividing wall, the caregiver station was too cramped. And, work areas needed to be reconfigured to better support workflow.

Facility Resources and Herman Miller Healthcare's team worked closely with the managers of the two departments to observe and photograph activities in the problem areas. The team made suggestions and those ideas were discussed with staff.



The high acuity medication room in the Emergency Department was redesigned to reduce distractions and increase safety.



Co/Struc is ideal for exam rooms because the components are interchangeable to meet a variety of needs and are designed for quick access to supplies.

Case Study

Z-Axis A Real Time-Saver

Extremely beneficial during this period was Herman Miller's Z-Axis®, a visualization tool that provides three-dimensional drawings of layouts so that clinicians can see how the space will perform. "We would show the staff different scenarios in the actual room so they could see how their work would flow, then we'd get their input, make the necessary tweaks, and bring back the changes to show them, all in a matter of hours," says Sless. "And later, when they signed off on the drawings, they knew exactly what they were getting."

The re-design process took about six months. "There was a lot of back and forth during that time, but we really wanted to get it right," says Regan. "We all had our ideas, but the nurses are the ones who work with it every day, so their input was very valuable."

Involve Staff In A Meaningful Way

Indeed, Regan says two of the biggest lessons she learned throughout the whole process were 1) involve staff in the scenario planning and help them determine priorities for the redesign, and 2) don't rush into making changes.

"We needed to take our time to be sure we got to the root cause of the problem and not just provide a quick fix," she says. "Would the change in space help work flow? Would it increase safety? Would it provide better patient care and service?"

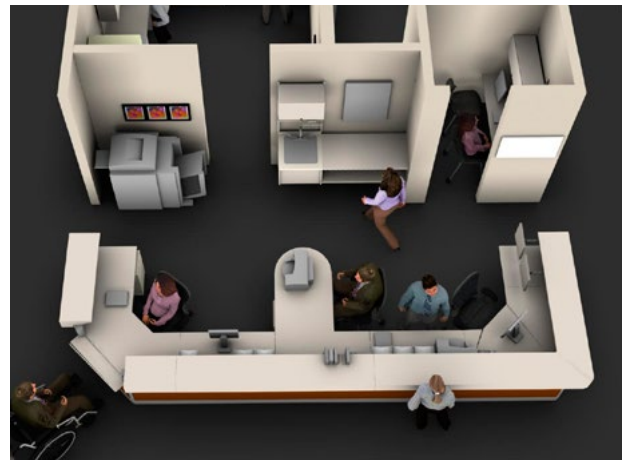
Once the changes were agreed upon, implementation began. Walls were moved, work areas reconfigured, spaces realigned; components were added to some places, taken away in others.

Minimal Downtime And Disruption

Had the hospital not gone with reconfigurable solutions to begin with, making changes like these would have been monumental, if not impossible—requiring a capital approval, building permit, engineering fees, construction dust barrier, major demolition, new construction, coordination of trades, and a significant relocation of existing patient services—and it would have taken months."



Herman Miller's Z-Axis 3-D visualization tool, which was extremely helpful during the reconfiguration process, shows the ED high acuity care station, medication area, and exam room before the changes were made.



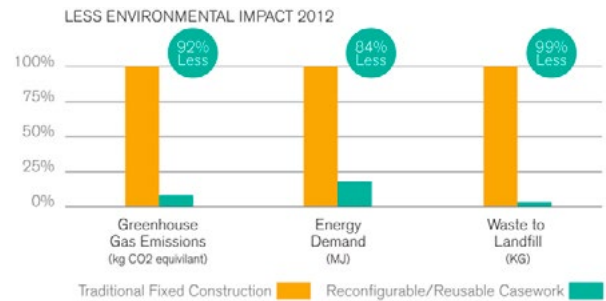
The nurse care area was reconfigured to improve workflow and the exam room was converted to a medication area, minimizing distractions and creating a safer place.

Case Study

But these changes were made in about 11 days,” attests Regan, “and it didn’t create the havoc it would have had if we had to tear out walls, minimizing not only the risk of infection, but the dust and noise and all the things that negatively impact patients.”

Multiple Benefits

Going with a flexible, adaptable environment has other benefits as well. It is more sustainable from a Life Cycle Assessment perspective. Reuse has less environmental impact relating to energy consumption and greenhouse gas emissions. Any leftover parts or pieces can be reused versus sending construction waste to the landfill. Says Regan, “We get requests all the time for a work surface here, an overhead bin there, and sometimes they are significant reconfigurations. I always tell people it’s like Lego.” Operational costs relating to change in a reconfigurable environment are much less expensive than with traditional fixed architecture.



The Intensive Care Unit’s central care station accommodates multi-disciplinary care team collaboration and the workflow on the unit.

Case Study

Immediate Impact

The impact of the changes was immediate as patient care and work flow improved dramatically. And in all cases the reconfigurable casework and walls were less expensive than conventional construction as illustrated in the “Less Cost” chart.

“I’ve heard nothing but positive comments since we made the changes in the fall of 2011,” says Regan, adding that the nurses “absolutely love the new med rooms, where there’s plenty of space and privacy so they can concentrate.”



Change Is The New Norm

As the staff at Bluewater look to the future, they see more changes on the horizon, as programs expand or new regulations arise, says Regan. “For example, right now Canada is implementing new accessibility laws for wheelchairs, and we can just go tweak our walls or doorways for the new dimension requirements, which will be a lot easier for us than for somebody who’s dealing with fixed architecture.”



Complex Continuing Care includes open, inviting, flexible care areas to support staff workflow and patient interactions.

Case Study

In fact, says Sless, “I think change is going to be the norm at Bluewater. And that’s a good thing. What’s bad is when hospitals can’t afford to make changes, so they don’t. That can lead to all kinds of potential problems in terms of patient care and productivity. But today’s flexible solutions make change both easy and affordable.”

*Bluewater Health was the first acute care hospital in Ontario to achieve LEED Certification, and one of the first in Canada. They were also the focus of a Herman Miller Life Cycle Assessment Study completed by a third-party research company, Five Winds, comparing the environmental impact of fixed and reconfigurable systems; reconfigurable won out in most every category, including energy consumption for initial build and for its reusability/replacement benefits. The post-post results from the reconfiguration demonstrate significantly lower environmental impact relating to greenhouse gas emissions, energy demand, and waste.

To read more about Bluewater Health, see research summaries:

- *A Life Cycle Assessment Comparing Fixed and Modular Systems*
- *Adaptive Facilities Correlate to Patient Satisfaction*



In the renovated part of the hospital, Inpatient Surgery care stations were designed to improve workflow and provide plenty of room for all who come and go in this busy area.

Case Study

Industry

Healthcare

Topics

Performance
Sustainability

Applications

Ambulatory Care
Caregiver Work Environments
Critical Care
Emergency
Exam Room
Healthcare Materials Management
Laboratory
Patient Care
Pharmacy
Surgical Services

Project Scope

285,000 sq. ft. consolidation of two facilities; 335,000 sq. ft. renovation of existing facility; five floors total; 320-bed hospital

Herman Miller Products

Action Office® System
Ethospace Nurses' Station
Co/Struc System
Procedure/Supply Carts

Programs/Services

Z-Axis
Herman Miller Clinical Consultants

Year Completed

2010 and 2011

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Co/Struc's reconfigurable casework and storage carts not only optimize supply capacity in a small footprint, they make it easy to quickly access supplies, which is critical in the ED's trauma room.

