A Paid Advertsing Supplement to the Denver Business Journal

WELL DESIGNED

INNOVATIVE ENVIRONMENTS THAT CHANGE HEALTHCARE – FOR THE BETTER

After testing the design flow and efficiency, Neenan then built a three-story, 60,000-square-foot facility for Coquille Valley Hospital in Oregon.

Neenan's 3-D designs illustrate workflow to clients

By Margaret Jackson

Creating 3-D simulations of a building before it is built enables The Neenan Company to help its clients solve space problems that otherwise could be costly and challenging to fix when the project is completed.

The simulations, a component of 3-D known as Building Information Models (BIM), are data-rich, object-oriented representations of a facility from which data can be extracted and analyzed to generate information that can be used to make decisions and improve the process of delivering the building. BIM allows all stakeholders to access the same information at the same time and serves as a shared knowledge resource for information about the facility.

"The fact that the software can illustrate in 3-D views allows us to create dynamic models and simulations," said Miguel Burbano, senior vice president of Neenan's health-care division. "They look like videos of what is being proposed. Those tools are valuable for architects, builders, construction staff and estimators."

When working on a new clinic for Mercy St. John's Clinic in Rolla, Mo., 3-D modeling helped the doctors and staff envision what the new facility would look like and determine what changes needed to be made to the original design, said Dr. Randall Huss, president of the clinic's Rolla division.

In keeping with Lean principles of eliminating waste and improving customer service, the clinic was designed with a small waiting area because the workflow had been improved to reduce the time patients wait to see their doctors. There are just eight seats in the reception area in a clinic that has six providers.

3-D modeling helps doctors and staff envision what the new facility would look like and determine what changes need to be made to the original design. The Neenan team can manipulate the model with the patient and staff schedules to explore outcomes and determine the most efficient use of the space."

The clinic was struggling with how to allow patients privacy to fill out registration forms in a small area where others may be waiting. Though 99 percent of the clinic's patients complete the registration process before arriving, there still needed to be a place for the 1 percent to fill out forms in privacy. It was able to find a solution using the 3-D technology Neenan has implemented to design buildings.

"We were trying to work around this issue of the waiting area," Huss said. "It opens into a galleria, and there is no closed door, so we put a private kiosk in the galleria that's wheelchair accessible."

Three-dimensional modeling is particularly valuable for the owners of a project because they can begin to familiarize themselves with the space before it's completed.

"Once clients see it, they can have deeper conversations about what's going on," said Dan Garofalo, vice president of business development for Neenan. "It's a lot easier and less costly to design space in a digital environment than it is to design and build it in the real world."

(L) 3-D design framework allows clients to walk through each room and see what each wall would look like to make modifications. (R) Mercy St. John's Clinic – Rolla reduced the size of its reception area and created a call center to handle scheduling.

Key benefits from the use of 3D models include:

- Improved project delivery achieved by accelerating construction progress, making construction more accurate and cost effective and increasing safety on the job site.
- Improved communication between key stakeholders
- Enhanced clash detection and identification of possible errors and inconsistencies in design before construction
- Better visualization of subgrade features and potential utility conflicts

"Once we had a basic floor plan established, Neenan was able to use the technology to put it into a 3-D design framework," said Dennis Zielinski, CEO and administrator of Coquille Valley Hospital. "We were able to walk through each room and see what each wall would look like. That was very helpful. It made it easier to make modifications, though we didn't make many."

Neenan built a three-story, 60,000-square-foot facility on a 45-foot sloping hillside between the existing hospital and clinic. The replacement hospital features private, single-occupancy patient rooms; and OB department; emergency department; imaging, including X-ray, mammography, dexa scan, ultrasound, CT and MRI; a three operating room surgery suite; lab; pharmacy; physical, cardiac and respiratory therapy; administration; and space for patient, family, staff and community education.

Neenan has started to take 3-D modeling to the next level, incorporating schedule and cost information for a project – making giving each project it designs five dimensions.

"The whole industry is shifting toward 5-D modeling," Burbano said. "It has barriers to entry – cost, training and risk – but it has benefits for all."

WORKFLOW continued on page 2

A community health and wellness campus in San Antonio, Texas that was designed and built by Neenan

Medical homes gain in popularity under Affordable Care Act

By Margaret Jackson

Imagine healthcare that helps prevent illness rather than just treating it, that gives you easy access to a team of experts, connects all your medical records and controls costs for you.

That's the concept behind patient-centered medical homes, a health-care model in which people use primary-care practices as the access point to comprehensive and integrated care. The goal is to prevent disease and maintain wellness while reducing the overall cost for health services. A team of care providers is responsible for a patient's physical and mental health-care needs, including prevention and wellness, acute care and chronic care.

Medical homes are gaining in popularity among both patients and care providers as the Affordable Care Act mandates controlling health-care costs and expanding coverage. The federal statute, signed into law by President Barack Obama on March 23, 2010, is the most significant regulatory overhaul of the health-care system since the passage of Medicare and Medicaid in 1965, and it's forcing health-care professionals to rethink how they deliver services.

"We assist our clients in creating the environments that will support those processes and developing the care protocols," said Miguel Burbano, senior vice president of Neenan's health-care division.

Among the strategies is creating Accountable Care Organizations, or ACOs, which are groups of health-care providers, including primary-care physicians, specialists and hospitals who work together and accept collective accountability for the cost and quality of care delivered to patients. The patient-centered medical home is the platform for providing that care, integrating patients as active participants in their own health. It's way or organizing primary care that emphasizes care coordination and communication to transform primary care into "what patients want it to be."

The wellness building on a medical campus with a full-size gymnasium, cardio rooms, weight rooms, daycare, kick-boxing and nutrition rooms.

"The major change is creating a collegial core or care-team model," said Annie Lilyblade, a medical planner at The Neenan Co., which has been working with clinics across the country to design facilities that promote coordinated care. "We have to create a work environment for all clinical staff to be able to work next to each other."

At Mercy St. Johns' Clinic in Rolla, Mo., for example, the leadership wanted to create the ambulatory practice of the future by focusing on patient-centric, physician- and cost-efficient care. The new facility also needed to provide for non-traditional types of care, such as e-visits, patient Internet access to the office and scheduling, telemedicine visits, group visits and team-oriented care.

The facility was among the first in the nation designed for electronic health records and the new workflows of the digital age. At the time, the clinic was transitioning to Epic, an electronic medical record software.

The collegial core or care-team model creates a work environment for all clinical staff to be able to work next to each other

"I didn't want to build the same old medical office building that had been built for the last 50 or 60 years," said Dr. Randall Huss, president of St. John's Clinic-Rolla Division, which ranked in the Top 3 integrated delivery systems from 2007-2011. "We knew that we could build something that was really designed for electronic workflows. We wanted to build something for the way we were going to work in the future."

Neenan's challenge was to bring practices and services from three buildings together; integrate clinic, lab, imaging, pharmacy and new hospital outpatient services into a one-stop shop; and transform the clinic from the traditional receptionist model to the call-center model.

Changes in health care are being driven not only by the Affordable Care Act, but also by the movement to electronic medical records. The reduced paperwork -- and corresponding need for less file space -- have changed the way health-care facilities are designed.

"As we're trying to go to a more paperless environment, it's really changing how providers are working," Lilyblade said.

In San Antonio, Texas, Neenan designed a new facility in two buildings totaling 71,611 square feet for CentroMed that includes community space for health education, training and wellness. Medical services also include family practice, pediatrics, dentistry, women's health, lab and dialysis. The wellness building features a full-size gymnasium, cardio rooms, weight rooms, daycare, kick-boxing and nutrition rooms. The building, which has 1,800 members, also hosts public meetings and events.

Neenan designers worked with the physicians, staff, patients and community to create the Gateway Community Health Center, a 63,500-square-foot world-class facility in Laredo, Texas. The new center more than doubled the clinic's health-care capabilities, expanding to 78 points of care to serve more than 20,000 patients in a low-income, medically underserved area on the Texas-Mexico border. Services include pharmacy, X-rays, maxillofacial, laboratory tests, prenatal care, primary mental-health care and many preventive health services.

"It's a more comprehensive delivery method of services where we have added mental health and counseling to the care team in order to ensure prevention and wellness," Burbano said.

WORKFLOW continued from page 1

Using a design tool called Revit, Neenan's collaborative project teams can update 3-D models in real time; discuss different versions of the design; merge structural, mechanical and plumbing models; and eliminate clashes – all early in the design stage.

"We can take the simulation model and evaluate patient workflow," said Whitney Churchill, a project architect with Neenan. "We can take a room and say this doctor is going to use this room on this day and see this number of patients. Then we can create a schedule so it can calculate how many patients you're seeing a day, which translates into revenue. You can manipulate the model so you get different outcomes and determine the most efficient use of the space."

Neenan integrated Lean workflow redesign with Lean facility design, while leveraging a robust electronic medical record at Mercy St. John's Clinic – Rolla.

Neenan uses Lean practices to eliminate waste in medical practices

By Margaret Jackson

For The Neenan Company, starting a medical building project doesn't begin with design. Rather, the Fort Collins-based design-build company immerses itself in a clinic or hospital's culture to understand how physicians, staff and patients move through the space.

Using tools gleaned from the Lean Process Improvement methodology, Neenan observes what happens from the time a patient enters a clinic until the time he leaves, recording each step taken by both the patient and the health-care professionals to ensure that when a new space is designed, it is the most efficient possible.

"It's different than working with other construction companies," said Tom Sanchez, director of clinical operations for The Vancouver Clinic in Vancouver, Wash. "There is a great deal of them understanding the workflow of the clinic. They shadowed our work process and followed our patients around and looked at the waste that's in the system and how much patients are waiting."

The core idea of Lean is to maximize customer value while minimizing waste. The concept can be applied to every business and every process. It is not a cost-reduction program, but a way of thinking and acting for an entire organization.

"By using Lean tools, we ensure that we are delivering what we promise to our clients," said Miguel Burbano, senior vice president of Neenan's health-care division.

The Vancouver Clinic's design creates an efficient and functional wellness atmosphere by organizing clinical modules around a central circulation spine to allow easy access and way-finding while segregating patient, staff and service functions. The central vaulted galleria creates a naturally lit, large space that is key to patients' emotional and psychological comfort.

The new clinic offers primary care medical services supported with pediatrics, internal medicine, family practice, radiology, laboratory, physical therapy and pharmacy services. The building's design incorporates advanced technology for administration, medical, operational and energy efficiency.

"How big of a waiting room do you really need?" Sanchez said. "You can use that space for other meaningful, value-added tasks."

In fact, many of the projects Neenan has worked on have eliminated waiting rooms altogether.

"One of the biggest frustrations is waiting in the doctor's office," said Annie Lilyblade, a medical planner at Neenan. "If we build a waiting room, you're going to build in wait into your process."

Neenan started working with The Vancouver Clinic in 2002, designing the first 67,000 square feet of clinical space. Since the building was completed in 2004, Neenan has built a new building for the practice every two years -- each with the capability of expanding as the clinic grows.

"It's hard to think that far forward when you're building a building that feels like it's twice as big as you need when you're building it," Sanchez said. "We felt like we would never fill the 2004 building, but all of our buildings are at capacity now, and we're talking about exercising those growth opportunities. We're planning for that next 10-year cycle."

The central vaulted galleria creates a naturally lit, large space that is key to patients' emotional and psychological comfort.

Another client Neenan improved workflow for was St. John's Mercy Clinic in Rolla, Mo. At the same time it was planning a new clinic, St. John's was implementing the Epic electronic medical records system and it wanted to be sure that the building was designed for the way doctors and staff would work in the future.

"Our system was very broken," said Dr. Randall Huss, president of the Rolla clinic. "The phones were jammed, and you could never get through. We were seeing our nurses taking long messages when they could have been with patients."

Through Neenan, St. John's learned about Lean design concepts in the medical field and examined every process it went through.

"We looked at everything from the customer's perspective," Huss said. "We looked at every step and asked whether it was value-added or non-value added. If we determined it was non-value added, we asked whether we could do away with it. If it was value-added, we asked whether we could do it better."

As a result, the clinic reduced the size of its reception area and created a call center that handles scheduling. It also designed each exam room to be exactly the same, while in most clinics, exam rooms are mirror images of one another because of the need to share a wall with plumbing.

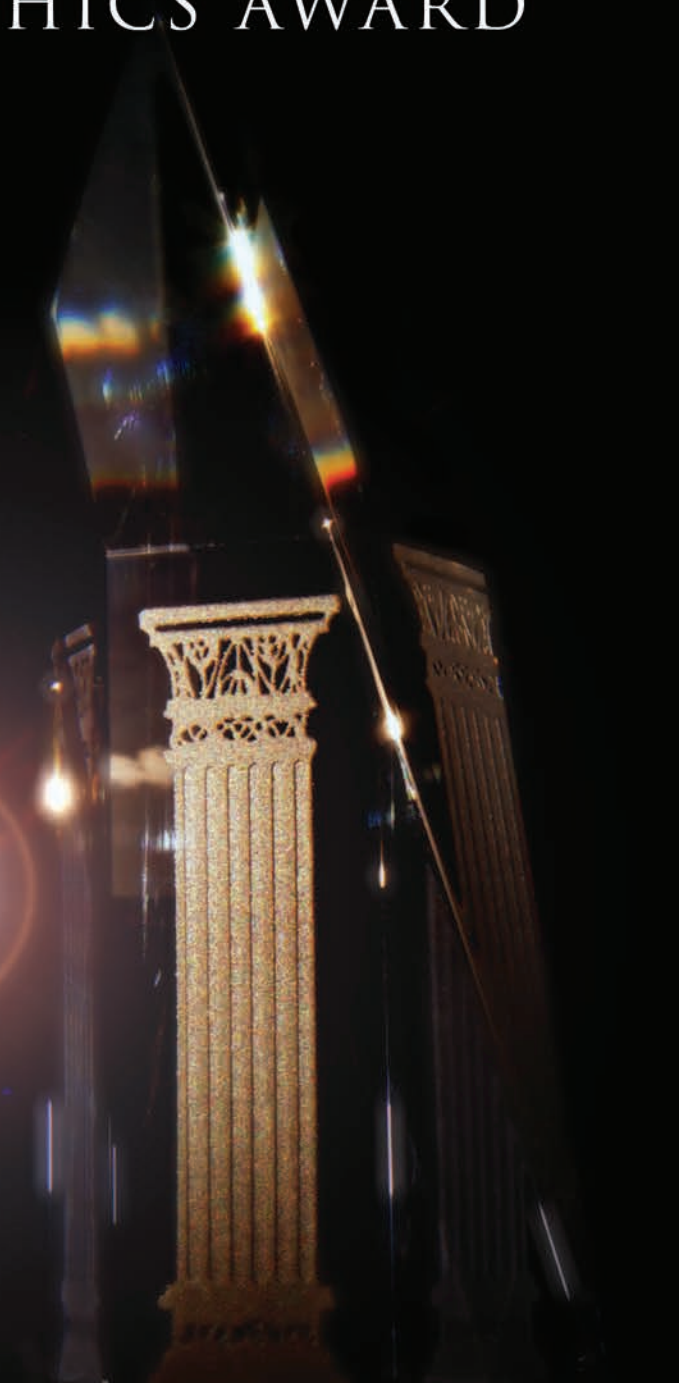
"The value of standardization is more than saving the cost of installing more wet walls," Huss said. "Because every room is exactly the same, everyone knows where everything is."

The clinic's design also improved communication by creating a "care-team module," with the clinic's 12 nurses and assistants in the center and work stations for providers on the rim -- all able to discuss issues that arise with patients.

"Including the providers and the nurses together restores communication, and it works well," Huss said. "You have to design intentionally to put communication back in the workspace."

INTEGRITY
RESPONSIBILITY
COLLABORATION
THE NEENAN COMPANY

RECIPIENT OF THE 2013
AMERICAN BUSINESS ETHICS AWARD



"We never sought accolades for doing the right thing, and being acknowledged at such a high level is truly a special event for us."
~Randy Myers, President of The Neenan Company

WWW.NEENAN.COM

PLANNING | ARCHITECTURE | DEVELOPMENT | CONSTRUCTION