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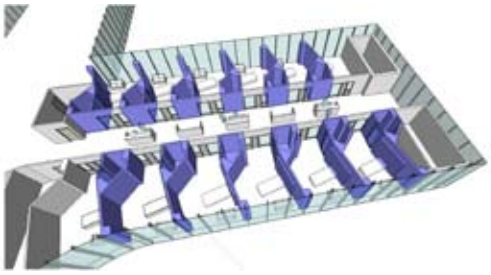
Prefabrication techniques used at Miami Valley Hospital

Indiana Society for Healthcare Engineering



Prefabrication techniques used at Miami Valley Hospital

Photos by Skip Peterson Photography

In an industry that is traditionally reluctant to change, Skanska superintendent, Marty Corrado, decided it was time to reexamine the way we construct buildings. Marty first heard about prefabrication through discussions of how it was being used by Skanska in the UK. After learning all he could about the process he was convinced the Miami Valley Hospital Southeast Addition project would be a great application for this process.

Miami Valley Hospital, located in Dayton, Ohio, is run by Premier Health Systems. The expansion project is a 484,000-SF addition to the existing facility. This new 12-story tower consists of five patient floors, each with three wings. The finished tower will have 178 private patient rooms, both a noninvasive and invasive cardiology department, a support services floor, and two floors of shell space for future expansion.

The first step Marty took was to develop a plan to take to Premier. He explained that the projects in the UK were experiencing a shortened schedule and an improved level of quality. After receiving approval from the owner, the Skanska team began planning with the design team, NBBJ and Korda/Nemeth, and their joint venture partner Shook Construction. They identified three areas that were most conducive for the preconstruction process based on the repetitive nature of each section - the patient room head and footwalls, the corridor racks and the bathroom pods.

It was agreed to involve key subcontractors as early in the process as possible. The team worked hand-in-hand with the Mechanical Electrical and Plumbing (MEP) subcontractors to design the Building Information Model (BIM), identify potential conflicts and maximize efficiencies. Full scale mock-ups were constructed to ensure the plan worked and that all fully understood the plan and level of quality expected, which translated into more accurate estimates.

Skanska Shook rented a warehouse approximately two miles from the jobsite for the construction and storage of the prefabricated pieces. This short distance made transporting quick and easy.

The last piece of prefabrication implemented was the temporary elevated walkway installed between the main hospital and the new NICU when the building connecting the two was demolished. Rather than construct a traditional wood framed walkway the team came up with the idea of using jetways used for boarding planes. It took less than a week to have the structure in place and connected to both buildings. Not only was this much quicker, the hospital plans to reuse this on future projects – thus preventing waste.

This project has already received recognition and will be featured at both the 2010 ASHE PDC Conference and the 2010 American College of Healthcare Executives Conference. At this point in the project, the team can see that there are tremendous benefits to safety, quality, schedule, waste, and to the overall cost of the project. They anticipate saving between one and two percent of construction cost. The Miami Valley Hospital Southeast Addition project is scheduled for completion in December 2010.

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