MIDLANDS HOSPITAL PROJECT: Our Livelihood, Their Lives

Project management and creative problem solving skills helped Interstates safely and smoothly complete a major project in the high-stakes world of an active hospital.

In April of this year, Interstates successfully completed a 26-month project at Alegent Health Midlands Hospital in Papillion, NE (a suburb of Omaha). Robert Bruegman, Interstates Omaha Regional Office’s commercial division manager, explains, “Interstates had done no medical work in at least 25 years. Moving from construction work in a manufacturing environment to the clean and sterile conditions necessary in a hospital setting required us to adopt new techniques. This new understanding of how to operate in these facilities provides us with competitive advantages that benefit our construction partners and customers.”

The Midlands Hospital project consisted of a major remodel of an existing hospital plus the addition of an attached medical clinic. The remodel rebuilt the hospital’s entire electrical infrastructure including ICU, surgery, and patient rooms. With power being turned off to one room while medical care continued in the next, a mistake could have had serious life or death implications.

Bruegman explains, “Our team employed Building Information Modeling (BIM) tools to create 3D computer models of the electrical infrastructure. We could see exactly where each electrical component, continued on page 2

MAXIMIZE YOUR ELECTRICAL INVESTMENT Collaborative Design: Maximizing Constructability and Project Value

Did you know one hour of project planning can save 17 hours in the field? At Interstates we’ve been working hard at leveraging that value for you, our clients. In the past years we've made great progress in removing hours from the field via pre-construction services, pre-fabrication solutions and our Lean/Agile construction practices.

More recently we've asked, “what's next?” We began considering how to better leverage the natural benefit of our in-house design-build professionals. A cross-discipline team was formed to recommend how Interstates could go from good to great at collaborating so that our clients would benefit from cost, schedule, and overall value improvements (see fig. 1).

The team’s recommendations are in! Interstates will be more intentional about collaborative design via the use of a gated, design process. In this process, clients, estimators, engineers, and constructors meet early and often in short meetings to address a broad range of standard design questions. At each gate, the participants decide on design details so that future design rework is minimized and resulting productivity gains translate to schedule improvements.

► MIDLANDS continued on page 3

► MAXIMIZE continued on page 2

FALL 2010 • Vol. 4 • No. 2

MANUFACTURING PROCESS EFFICIENCY ..... 2
SERVER VIRTUALIZATION AND BLADE SERVER PROJECTS.......................... 4
LOCAL PROJECTS GROUP LEADER RECOGNIZED..... 5
What does this mean for you? Clients benefit from improved design-build, RISE Value:

- **Rapid Project Delivery:**
  - Reduced design iterations improves the speed of your project’s delivery.
  - Construction input as part of the design minimizes changes and problems on your jobsite.
  - Design focused on procurement and prefabrication needs (rather than just drawing completion) means equipment is on the jobsite sooner.

- **Innovative Solutions:** a diverse design team, engaged early, allows for innovative solutions.

- **Single-Source Responsibility:** The owners’ intent is heard by the design and construction team at the optimum time in the project process.

- **Early, Dependable Pricing:** estimating involvement in the design process ensures maintaining a reliable budget.

We’re excited about leveraging collaborative design on your project.

Please contact us with your ideas for further improving the construction experience.

**MANUFACTURING PROCESS EFFICIENCY**

In today’s competitive environment, manufacturers need a sustainable advantage just to survive. Overseas low cost manufacturing continues to pressure local manufacturers. One of the most powerful competitive advantages is gaining visibility into your operations’ effectiveness. Manufacturers are already aware that data collection and analysis can streamline their operations and drive process improvements. The challenge is where to start.

**Proof of Concept Engagements**

Three observations. First, most manufacturers admit they have inefficiencies in their production process. Second, they know the metrics which drive
from conduit to outlets, would go. We could work confidently in one room while a surgery was taking place in the next room.”

The patient floors where room designs and sizes are repetitive lent themselves to prefabrication. As the electrical subcontractor on this project, Interstates was able to prefabricate the headwalls with all necessary electrical and data conduit work, as well as oxygen flow systems. Performing this work offsite positively impacted the project’s speed and cleanliness as well as minimized disruption of the hospital’s daily operation.

Interstates’ work at Midlands Hospital has led to several additional hospital projects, according to Bruegman. In Bellevue, NE, Interstates was selected as the electrical subcontractor for a combined remodel and build out of a new University of Nebraska Medical Center hospital.

In Omaha, NE, similar remodel work was also completed at Immanuel Hospital (which, along with Midlands Hospital belongs to Alegent Health). Alegent Health so highly values the benefits of Interstates BIM-assisted prefabrication first used at Midlands that they now include it in their bid requirements. On the Immanuel project, prefabrication cut the general contractor’s time in half, as they were able to laser-precut all of the headwall wood. Without measuring each piece of conduit individually, they knew precisely where the boxes would be.

Bruegman says, “We believe that the insights we’ve gained from these projects provide us with a competitive advantage in medical facility projects. As a result, we are partnering with general contractors and actively targeting this new market.”

How Does it Work
Step one, it’s all about preparation. Proof of concept engagements are only successful when manufacturers have a list of metrics and ideas to improve their process. For example, “I think our bottleneck is in packaging” or “I think most of our unplanned downtime is attributable to starved equipment.”

Step two, the on-site engagement. Consultants come on-site to discuss your top initiatives, bring in the hardware and software free of charge, and collect data for 30 days on a limited scale (e.g. one process line or one packaging line). The on-site portion usually lasts between two to five days, which is why preparation is so important.

Step three, the follow up. Consultants review the data with you, help quantify the projected ROI, and you assess the value of the solution.

Success Story
One of Interstates’ clients, a pet food manufacturer, wanted to determine how much they were overfilling their product on one of their packaging lines. Overfilling is a common strategy used to adhere to regulatory requirements that require labeling to accurately reflect the actual contents of the package. Simply put, if you underfill your product you run the risk of being fined, but overfilling cuts into profit. After Interstates created real-time trending reports, they realized they were overfilling by .03%. By using the report information and periodically recalibrating the filler equipment, this was dialed down to a more ideal percentage of .01%.

After the reporting solution was deployed to all of their packaging lines, the cost savings was in the hundreds of thousands of dollars.

The Bottom Line
Continuous process improvement is required in today’s manufacturing environment. Increasing efficiency through process visibility is one of the most effective tools you have. Interstates has several success stories working with manufacturers to deliver proof of concept engagements. To discuss how a proof of concept engagement can be applied to improve your operational effectiveness, contact Interstates Manufacturing Intelligence group at 712.722.1663 or email Stephen.dekker@interstates.com for more information.

Interstates Electricians Installing Cable

www.interstates.com
The subjects of blade servers and server virtualization don’t often come up in dinner conversation. But they are important elements of Marty Van Der Sloot’s line of work. So it’s no wonder that Interstates’ Manufacturing Intelligence Project Manager gets excited at their mention. The implementation of these two technologies is improving availability and decreasing costs in Interstates’ HMI/SCADA installations around the globe.

Those benefits (increased availability and decreased costs) are at the core of both advances in server technology. Server virtualization allows a single processor to be logically split into multiple servers, each functioning with complete independence. Because the CPU is underutilized in most servers, server virtualization allows better asset utilization. By further combining multiple virtualized servers into a single manageable box, blade servers reduce the number of components necessary to run the server. They provide a clean management interface and excellent failover systems.

Van Der Sloot said Interstates has worked with a long-time customer to upgrade HMI applications and plant floor services across multiple installations internationally. This series of projects started in their pet food facilities, and has now expanded into health care. According to Van Der Sloot, “prior to upgrading, our clients have had 20 different servers on the production floor” (generally rack-mount “pizza box” style servers). By partnering with Dell, Van Der Sloot explains that Interstates is now able to replace those servers with blade servers, which house multiple processors in a single managed chassis.

This reduction of hardware plus the inherent fail-over functionality provide a highly redundant, highly resilient solution. The blade servers provide hardware redundancy plus hot-swap ability for failed components – a key benefit in a manufacturing environment.

Server Virtualization
With the servers now on blades, Interstates employs server virtualization to logically divide CPUs into multiple independently operating servers, each capable of running their own operating system.

Sharing resources that were previously housed on separate machines leads to other savings and efficiencies as well. While servers were previously being replaced on a 4-year cycle, Van Der Sloot expects the new Dell solutions will have a useful lifespan of ten years.

Additional Benefits
Van Der Sloot says that the ability to deploy server virtualization services on blade servers in a manufacturing environment provides other important benefits as well. Combining hardware resources into fewer boxes means less management time is necessary, and the move from physical servers to virtual servers provides clients with fewer points of entry into the systems, which enhances security.

These efficiencies aren’t limited to the production side of a manufacturing plant. Installations have seen reductions of 25% and more in the loads on their uninterruptable power supplies. This can amount to significant cost savings per year in a typical installation.

Van Der Sloot says Interstates customers are pleased with the results of the move to these new server solutions. “We are now working with many of our customers to simplify their infrastructure, using technologies just like these.”
Eric Moerman, regional manager for Interstates’ construction team, has been selected as a “Top 20 Under 40” business professional by the Northwest Iowa Review. This honor is awarded to young leaders in the northwest Iowa region who are considered to be “some of the area’s best and brightest young professionals.” Moerman began his career at Interstates as a purchasing department intern in 2001 while attending Dordt College in Sioux Center, IA. After graduation, he went on to serve as a project manager and project coordinator for Interstates. In 2007, he was named regional manager of the Local Projects Group, a position he still holds. Moerman credits his growth to the opportunities the company has given him. “I knew from day one this was a place I wanted to learn and grow with. Along the way I’ve had some great mentors here at Interstates that have really helped develop me in my career. For that, I’m forever grateful,” said Moerman.

As a regional manager, Moerman’s job is a blend of business development, project management and client interaction. “Even though I wear many different hats in my position, I’m probably first a salesman. I love the rush of making the sale, especially to a new client that may not be familiar with all the capabilities we can provide for them,” he says.

Moerman was recognized at a "20 Under 40" banquet held at Northwest Iowa Community College in Sheldon, IA, on April 8.

**More About the Local Projects Group (LPG)**

Interstates’ Local Projects Group clients are typically located within a 100-mile radius of Sioux Center. This proximity leads to uniquely close, long-term client relationships and projects that can range from a simple outlet installation to facility expansions and new builds. Moerman explains, “We service the same clients over the years, so regardless of the size of a particular project, we want to be sure we leave them satisfied with the work we’ve done.”

In Corwith, IA, for example, Moerman’s team is in the midst of a multi-year, multi-phase multi-million dollar project with Hawkeye Pride Farms LLP. The schedule calls for a new chicken laying barn to go live every 9 weeks. Interstates is responsible for all electrical engineering and installation of all electrical components. Because the PLC control systems used in the Hawkeye Pride Farms LLP installation are from an Italian supplier, the Local Projects Group has taken the additional responsibility of helping the supplier’s equipment get approved for operation in the states by the local electrical inspector. Moerman cites this as an example of the value added services that his group can provide to their clients.

Like the egg project, many of LPG’s projects are agriculture-related. Grain storage expansions, ethanol plants, feed mills, soybean, meat, and milk processing facilities are among the agricultural environments in which the team has worked.

As regional manager of the Local Projects Group, Moerman leads a team that includes 20 electricians plus project managers and other support staff. Most live in or around the Sioux Center area and are native Iowans. Moerman explained that the group’s local client base allows members of his team to spend more time at home with family and involved in their community.

“I learned from day one this was a place I wanted to learn and grow with. Along the way I’ve had some great mentors here at Interstates that have really helped develop me in my career. For that I’m forever grateful.”
The Interstates Companies offer full service, design-build electrical contracting, engineering, instrumentation, and control systems on a worldwide basis. Corporate offices are located in Sioux Center, IA, with regional offices in Sioux Falls, SD; Omaha, NE; Fort Collins, CO; and Casa Grande, AZ.

LOOK INSIDE to see some of the innovative and cost-saving solutions we have brought to our customers’ projects.

For more information, visit www.interstates.com.

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Continued on page 1