



## To boldly go ...

### Data Center explores the virtual frontier

By Sheila Llanas

What does it take to build a 60,000-square-foot computer facility in record time? A virtual 60,000-square-foot computer facility, of course.

The construction team for the new State of Wisconsin Data Center in Madison learned quickly that creating a virtual building before it actually goes up can save a lot of time in the long run.

"The 3-D model allowed us to visualize how to bring major equipment into the building," said Mike Sorge, M. A. Mortenson's senior superintendent on the job. "We planned what walls and pipes we needed to keep out. We were 75 percent complete with mechanical systems by the time the equipment showed up."

The new center houses the Wisconsin Department of Administration's Division of Enterprise Technology and consolidates computer systems from multiple centers in the state. Considering the technological nature of the building, it's only fitting that the center's construction set a precedent for future state jobs as one of the first to use a 3-D building model.

The construction team might be happy with the impact the virtual building had on the construction process, but that doesn't mean it was an easy idea to get off the ground. Initial coordination meetings took a long time, and not everyone was convinced of the benefits of the 3-D program.

But when construction began, the members of the team came together.

"There was very little rework," Sorge said. "Things clicked. Most became believers."

That's a good thing because the job had to reach completion in an eight-month window. And that time frame, Sorge said, was the biggest challenge.

"The building structure and enclosure is very simple," he said. "But a lot of electrical and mechanical work had to go into it in a short amount of time."



Photos courtesy of Jay Jurado/Midwest Digital

#### PROJECT ESSENTIALS

**Project Name:** State of Wisconsin Data Center

**Location:** Madison

**Submitting Companies:** Eppstein Uhen Architects Inc., Milwaukee; M. A. Mortenson Company, Brookfield

**Construction Manager/General Contractor:** M. A. Mortenson Company

**Project Leaders:** Ben Goetter, Mortenson's project manager; Peter Kucha, Eppstein Uhen's architect; Mike Sorge, Mortenson's senior superintendent

**Architect:** Eppstein Uhen Architects Inc.

The center's computer room was built over a 6-foot access floor to house all the power cabling. The space provides air supply and maintenance access, and the 3-D model allowed for pre-fabrication of components and early planning of the system's complex power sources.

"It's a glorified machine room," said Peter Kucha, project architect for Eppstein Uhen Architects. "The main challenge was working with the design team, construction team, owner and end user to address concerns of all parties and deliver it within the time frame."

Those concerns were minimal once the job got rolling.

"Out of the thousand conflicts we identified during the model, we only had three conflicts in the field," said Sorge. "Those were situations where the pre-fabrication happened before we had signed off on the coordination of the model."

**Engineer:** Affiliated Engineers Inc., Madison

**Owner:** Wisconsin Department of Administration, Madison

**Project Cost:** \$15.5 million

**Project Size:** 60,000 square feet

**Start Date:** October 2005

**Completion Date:** April 2006