

Cubic Designs Inc.  
CUSTOM MEZZANINE SYSTEMS

16770 W Victor Road  
New Berlin, WI 53151  
www.cubicdesigns.com

800-826-7061  
262-789-1966  
Fax 262-789-1970

## MEZZANINE SOLVES STORAGE PROBLEMS IN MANUFACTURER'S RELOCATION, CONSOLIDATION

Komatsu Dresser Company manufactures and markets heavy-duty construction and mining equipment such as crawlers, excavators, bulldozers, off-highway trucks and large-bucket loaders. The company, with headquarters in Lincolnshire, Illinois, employs more than 3,000. It has one manufacturing facility in Canada and four plants in the United States.

After the company's creation from a merger of two firms, Komatsu Dresser needed to determine the best location for a national parts distribution center. The company hired a consulting firm to examine machine location, distributor location, operating costs, transportation costs, and other factors that affect a parts distribution system.

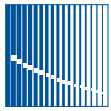
The consulting firm recommended the Atlanta or Memphis area. Komatsu Dresser located a 592,000-square-foot facility in Ripley, Tennessee. It had been used for manufacturing automotive exhaust systems and was basically an empty warehouse with 28-foot ceilings.

Bill Dickens, manager of the former parts distribution center in Broadview, Illinois, saw the advantage of the ceiling height in the new Ripley facility. The Broadview center had 1,100,000 square feet. The challenge would be to relocate the former distribution location into one half the size.

Rodney Schultz, vice president of First Access, Inc., material handling specialists located in Chicago, was asked to design and present a plan for the entire material handling system. Cubic Designs, Inc. supplied the mezzanine system, Interlake the racks and conveyors, and Equipto the shelving and bins. The bin room was critical to the Ripley facility layout. Dickens explained the need to store 165,000 part numbers.

Schultz determined that a customized mezzanine was the only solution. He had to work around building support columns and wanted to avoid placing any mezzanine or support columns in traffic aisles. The placement of bin units on the upper and lower levels was also important.

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## **Komatsu p2**

"We wanted 36-inch-wide aisles upstairs and 72-inch-wide aisles downstairs . . . clear of mezzanine columns," said Dickens. "And to improve efficiency of the layout, we needed to run different bin units back throughout the mezzanine. We needed 12-, 18-, 24- and 30-inch-wide units. It was virtually impossible to stack bins evenly on top of one another and still keep the building and mezzanine columns out of the aisles."

Cooperation between Cubic Designs' engineers and Equipto's engineering group helped create a bin room that was efficient and maximized usable space. "While we knew that each mezzanine column would eliminate at least one shelving unit, our goal was to eliminate not more than one unit per column," said Don Otte, vice president of engineering at Cubic Designs. "In the final design we created a non-symmetrical column layout that accommodated their needs. Column spacing ranged from 19 to 22 feet by 11 to 13 feet."

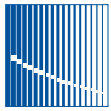
The mezzanine offered 10-foot, 6-inch clearance on the lower level to allow maximum usage of the 9-foot-high shelving/ bin units. The clear height eliminated any problem with order pickers bumping their heads on mezzanine joists, stringers, lights, or the sprinkler system.

The extra height also improved lighting throughout the mezzanine. Fluorescent lights were mounted high enough to evenly filter light throughout the aisles, even into the topmost bins. Lighting was further improved by painting the entire structure white.

At Ripley, the bin room is consolidated into a 75,000-square-foot, two-level mezzanine. The first level has 9-foot bins with 72-inch aisles. The second level has 7-foot bins with 36-inch aisles. The first level is used to store parts that are faster movers; the second level stores slower-moving items.

The facility now has 180,000 part numbers on the mezzanine and 36,000 pallet rack storage locations. There is also 150,000 square feet of space for bulk floor stack.

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### ***Komatsu p3***

The old facility had three packing lines with 42 packing stations. The operation required four supervisors on two shifts. The Ripley facility has one packing line to handle all orders. The line has 34 packing stations under two supervisors.

The new facility will handle 400 to 500 emergency orders a day. It will function as a regional center for the surrounding area as well as a national center for slow-moving items that are shipped throughout North America. The facility will also handle international shipments.