

CASE STUDY

One Big Cleaner

WEST CENTRAL ADDS CLEANING SYSTEM TO IMPROVE MARKETING FLEXIBILITY

For nearly five years, **West Central® Cooperative's** 9.3-million-bushel, 110-car shuttle loading facility located in Boone, IA had hoped to replace its 35-year-old, 30,000-bph grain cleaning system, but Regional Grain Superintendent **Dean Riesselman** (515-432-4563) says other urgent customer-facing projects were prioritized over a new grain cleaning system.

"It wasn't until the rail market recovered recently that we were able to justify new projects like replacing our obsolete cleaning system," says Riesselman, who has been with West Central since 1977.

In May 2015, West Central (www.west-central.com) hired **McCormick Construction Co.** (McC), Greenfield, MN (877-554-4774), to replace the cooperative's old cleaner with an au-

tomated, 60,000-bph cleaning system.

McC worked with **Triple/S Dynamics, Inc.**, Dallas, TX (800-527-2116), to engineer the system.

Project Challenges

According to McC Sales Executive Allan Tedrow, there were a number of unique challenges with the project, which began in mid-July and was completed in early November:

- The cooperative's old system had to be removed from a small, confined space 120 feet in the air between two concrete silos.
- The new system, with double the capacity, had to fit in this same space.
- Since the Union Pacific railroad runs so close to the south side of the facility, where the cleaner sits, the system had to be elevated with a crane from the north side of the silos, which restricted the view of the crane operator.

"Typically, cleaning systems this large consist of two cleaners rather than one large cleaner, but there wasn't room for two," says Tedrow.

This meant Triple/S had to engineer



Aerial view of West Central's new Triple/S Dynamics Texas Shaker 60,000-bph grain cleaner in Boone, IA. Aerial photos by Adam Moeller, Moeller Engineering, Ankeny, IA.



Alternate aerial view of the Texas Shaker cleaner.



West Central Location Manager Kevin Brant (left) and Superintendent Trevor Hoyle both were involved heavily on the project. Ground-level photos by Tucker Scharfenberg.



West Central controls its new cleaning system with Rockwell Automation software.

its largest **Texas Shaker® vibratory grain cleaner** yet, a 55,000-lb. system that scalps corn at 60,000 bph.

How it Functions

According to Triple/S Product Manager Ferdinand Schön, “the straight-line motion of the Texas Shaker is generated by a pair of counter-rotating unbalanced shafts coupled together with a pair of helical gears. Their opposite rotation generates the straight-line inertia force that causes it to move in reaction when applied to the screen box structure.

“This constant change in velocity and direction of the screening surface creates a shuffling effect in the material bed that promotes stratification and screening,” explains Schön. “It also intensifies the action of the cleaning balls, which impact the underside of the screen, to prevent blinding and to apply local agitation to assist in stratification.

“This positive conveying action (40 fpm on a 6-degree slope) moves the bed at a constant velocity to prevent uneven buildup on the screen,” he adds.

Resulting System

In addition to the Texas Shaker, McC also added a Hi Roller Model 54 Hi Life 60,000-bph enclosed belt conveyor to fill the cleaner from above, an InterSystems 40,000-bph gravity screener, and Schlagel gates.

The cooperative controls the entire cleaning system with a software program developed by Rockwell Automation, Inc., Milwaukee, WI (414-382-2000).

“It makes things so much easier for us,” says Riesselman. “You just simply click the desired grade and it does the rest.

“We’re very happy with the way this



A new InterSystems gravity screener sits below the Texas Shaker.

project turned out. McC did a fine job for their first project with us – I can’t say anything bad about their work,” he adds.

Riesselman explains that its new cleaning system gives the cooperative greater marketing flexibility. “We can now scalp, screen, and really make the grades necessary to ship to any market, which is great right now, because the west coast and export markets seem to be leaning again toward scalped lately.”

Tucker Scharfenberg, associate editor