

Cleaner Grain Drying

CHS ADDS NEW DRYER AND INCREASES STORAGE CAPACITY TO HANDLE CORN HARVEST



CHS, Inc.
Inver Grove Heights, MN
800-232-6000

Drayton elevator purchase: 1984
Storage capacity: 4.6 million bushels at Drayton

Annual volume at Drayton: 18 million bushels

Number of members: 435 customers at Drayton

Number of employees: 27 at Drayton

Crops handled: Hard red spring wheat, corn, soybeans, winter wheat

Services: Grain handling and merchandising

Key personnel:

- Harold Weimer, general manager
- Brian Devine, merchandiser
- Jason Morris, station manager

Supplier List

Aeration fans.....AIRLANCO/GSI
Building storage... Behlen Mfg. Co.
Bulk weigh scale InterSystems
Bulk weigh scale controls Cultura Technologies
Bucket elevators..... InterSystems
Catwalks ... Tri-Co Fabrication, LLC
Cleaner InterSystems
Contractor/millwright Buresh Building Systems, Inc.
Conveyors Hi Roller Conveyors/InterSystems
Consulting engineer..... VAA, LLC, Raker Rhodes Engineering
Distributor..... Schlager, Inc.
Dust collection system... Donaldson/Torit
Elevator buckets Maxi-Lift Inc.
Fall protection Micada
Grain dryer Mega Dryers
Grain temp. system..... Tri-States Grain Conditioning, Inc.
Samplers InterSystems
Steel storage..... GSI
Steel tank erection ABC Bin Co.
Tower support system..... Tri-Co Fabrication, LLC



CHS increased storage at its Drayton, ND from 1.4 million bushels to 4.6 million bushels with the addition of a 3.2 million bushel Behlen Mfg. flat storage building. Aerial photo courtesy of Buresh Building Systems.

Originally built in 1980 by Drayton Farmers Coop, and bought by CHS in 1984, CHS' elevator in Drayton, ND originally was constructed to handle the area's wheat crop. As many farmers in northeast North Dakota switched acreage to corn, there was a need for new equipment and storage to handle the larger fall harvests. This increased corn volume also generated complaints over bees wings.

To handle these problems, General Manager Harold Weimer (701-454-3351) says, the elevator in 2013 started a project to add a 3.2-million-bushel flat storage building, a 10,000-bph grain dryer, and increase rail shipping capacity to 80,000 bph.

"Corn volumes were bigger than the facility was built to handle," Weimer says, "and now we can handle large volumes using belt conveyors."



The \$13.5 million project was started on May 6, 2013 and completed on Jan. 15, 2014. The contract was awarded to Buresh Building Systems, Hampton, IA (641-456-524), because the contractor's concept was best, says Weimer.

"Buresh offered us the best options, and we thought they could finish a job this large in a timely manner," he adds.

The project involved three phases. The first two phases, which were completed in January 2014, included the dryer, flat storage, and three hopper tanks. In the third phase, completed in March 2014, an 80,000-bph leg and bulkweigher were installed.

New Dryer for Cleaner Air

Unique to this project was a 10,000-bph modular tower dryer from Argentina-based Mega Dryer. Because dust emissions were a concern in the vicinity, the elevator wanted a dryer with self-cleaning capabilities.

"Mega Dryer proved that they could dry corn as well as domestically made dryers," Weimer says,

General Manager Harold Weimer, left, and Station Manager Jason Morris. Ground photos by Tweten's Photography.

“and their ability to clean the air exiting the dryer was better for our community.”

The Mega Dryer has 15 direct-driven fans and dust collectors that significantly reduce the dust emissions to the environment. The cyclones separate out the dust and fine particles from the air, directing them into a dust discharge spout, before the air leaves the dryer.

Two 30,000-gallon propane tanks fuel both the Mega Dryer and an older Zimmerman 4,750-bph dryer. Weimer adds that the facility has been able to dry more than 250,000 bushels of grain in a 24-hour period.

Increased Storage and Cleaning

The new storage consists of a 3.2-million bushel Behlen flat storage building and three 43,000-bushel GSI wet grain hopper tanks.

The clear span flat storage building measures 240 feet by 450 feet and stands 27 feet tall at the eave. The building is filled through a spout coming off a Schlager 24-inch six-duct double swing-set distributor, which deposits grain onto a 40,000-bph Hi Roller enclosed belt

conveyor equipped with a tripper system. The building's aeration system consists of twenty-eight 3-hp axial AIRLANCO fans along the sides of the building and four 30-hp centrifugal AIRLANCO fans on each end. There are also eighteen 2-hp roof exhausters to assist in aeration of the building. A 34-cable Tri-States Grain Conditioning system is used for grain temperature monitoring.

The three GSI hopper tanks are 36 feet in diameter and stand 65 feet tall. They are loaded and emptied by 30,000-bph Hi Roller enclosed belt conveyors.

In addition to the increased storage capacity and new dryer, a new 40,000-bph InterSystems gravity screener and an 80,000-bph InterSystems bulk weigh scale were installed for rail loadout. The bulkweigher is fed by one or both of two 25,000-bph InterSystems legs featuring two rows of 16x8 Maxi-Lift TIGER-TUFF buckets mounted on a 35-1/2-inch wide belt. The bulk weigh scale is operated with a oneWeigh® control system from Cultura Technologies and can load a 110-car train in nine hours.

Alex Lord, associate editor



Mega Dryer 10,000-bph dryer.