greenfield solution to urban sprawl

LANDUS builds new greenfield elevator in Mitchellville, IA to replace two in-town facilities

When urban sprawl meets rural ag, it's time to move. That is what Landus faced in 2020, when the growth of homes and businesses on the east side of Des Moines, IA was butting up against its elevators in Altoona and Bondurant.

According to Dale Vinsand, capital projects manager, "Our two elevators were running out of room with new developments sprouting up around them, taking away farmland and causing traffic safety concerns."

The solution the Des Moines, IA-based cooperative found was to build a new greenfield elevator 10 miles to the east in Mitchellville.

(The Altoona elevator was sold to a local farmer, and the Bondurant elevator is for sale.)

The $40-million project broke ground on a 30-acre site 5 miles north and west of Mitchellville on

Landus Hub Lead Jason Lemmert (right) with Malloy Nearmyer, relationship specialist. Ground photos by Jerry Perkins.

LANDUS

Des Moines, IA • 515-817-2100

Founded: 2016
Storage capacity: 144 million bushels at 57 locations
Annual volume: 185 million bushels
Annual revenue: $1.4 billion
Number of members: 7,000
Number of employees: 600
Crops handled: Corn, soybeans
Services: Grain handling and merchandising, feed, agronomy

Mitchellville key personnel:

- Jason Lemmert, hub lead
- Darren Struthers, hub superintendent
- Connor Kuhlemeier, account lead
- Christian Luhring, account manager
- Malloy Nearmyer, relationship specialist
- Dawn Beukema, billing specialist
- Sean Healy, hub logistics specialist
- Todd Beukema, applicator
- Scott Stepp, applicator
- Roger Smith, operations technician

Reprinted from **GRAIN JOURNAL MAY JUNE 2023**

Landus' new 5.54-million-bushel elevator near Mitchellville, IA features a 3.9-million-bushel Macon Construction hoop flat storage building and three Sukup steel tanks. Aerial photo by JH Photography, Spencer, IA.

MITCHELLVILLE SUPPLIER LIST

- **Aeration fans** • Sukup Manufacturing
- **Bearing sensors** • 4B Components
- **Bin sweep** • Sukup Manufacturing
- **Bucket elevators** • Sukup Manufacturing
- **Catwalks** • Sukup Manufacturing
- **Contractor/millwright** • Buresh Building Systems, Inc.
- **Conveyors (drag)** • Sukup Manufacturing
- **Conveyors (belt)** • AGI Hi Roller
- **Distributor** • Schlagel Inc.
- **Electrical and automation contractor** • Jakes Electric
- **Elevator buckets** • Maxi-Lift Inc.
- **Grain dryer** • Sukup Manufacturing
- **Grain temperature system** • AGI CMC
- **Millwright** • Buresh Building Systems, Inc.
- **Motion sensors** • 4B Components
- **Speed reducers** • Dodge Industrial
- **Steel storage** • Sukup Manufacturing
- **Steel tank erection** • Global Bin Builders
- **Support towers** • Sukup Manufacturing
- **Truck scales** • Rice Lake Weigh Systems
- **Truck probe** • AGI Union Iron
- **Truck receiving building** • Nucor

April 1, 2022 and received its first load of corn on Oct. 11, 2022.

Vinsand says the April to October timeline was challenging, but everything came together.

The cooperative received four bids on the project and awarded the contract to Buresh Building Systems, Hampton, IA.

"We chose Buresh due to their price and the quality of their work," says Vinsand.

"They have an excellent reputation, and we've done quite a few projects with their team over the years."

Jakes Electric, Clinton, WI, performed the electrical work on the project.

Flat Storage

The 5.54-million-bushel facility features a combination of 3.9-million-bushel hoop-style building and steel tanks.

A flat storage building, manufactured by Sioux Steel's Pro-Tec division and supplied by Macon Construction, features a fabric roof covering stretched in separate pieces across the steel roof trusses, creating a continuous waterproof connection between fabric and frame without the risk of creating wear points on the cover.

The building, 180-feet-x-660-feet, also includes Macon Construction's MaconMaximizer™ technology that attaches underneath the building's trusses to allow grain to be stored higher than the top of the 18-foot cast-in-place concrete sidewalls, increasing storage capacity by up to 30%.

This is Landus' third Sioux Steel/Macon Construction flat storage building; the others are at its Rake and Early, IA locations.

For reclaim, the building uses an AGI Hi Roller 20,000-bph enclosed belt conveyor. ▶

New Sukup 4,700-bph grain dryer (left background) and relocated GSI 4,000-bph dryer (center).

Landus Hub Lead Jason Lemmert inside the Macon Construction 180-feet-x-660-feet fabric-covered hoop flat storage building.

The Sukup 135-foot steel tank features eight 40 hp low speed centrifugal fans supplying 1/7 cfm per bushel on corn.

Steel Storage

In addition to the flat storage, the facility has three Sukup corrugated tanks:

• **135-foot-diameter tank for soybean storage.** The 24-ring tank is 88-feet tall at the eave with a peak height of 126 feet. It can store 1.2 million bushels. The tank has a flush-floor aeration system with eight 40-hp Sukup fans that supply 1/7 cfm per bushel on corn.

• **72-foot-diameter wet tank.** This 27-ring tank is 84 feet tall at the eave and 103 feet at the peak, providing 311,453 bushels of capacity. The tank also has a flush-floor aeration system with six 40-hp Sukup fans supplying 1/5 cfm per bushel on corn.

• **54-foot diameter storage tank.** This 27-ring tank is 77 feet at the eave and 91 feet at the peak, providing 158,000 bushels of storage. The tank also has a flush-floor aeration system with two 15-hp Sukup fans supplying 1/7 cfm per bushel on corn.

For reclaim, all three steel tanks have a 10,000-bph Sukup paddle sweep which feeds an above-grade 20,000-bph AGI Hi Roller enclosed belt conveyor on the 135-foot tank and a 10,000-bph Sukup drag conveyor for the two smaller tanks.

Grain Receiving

As trucks enter the site, they are sampled by a AGI Union Iron truck probe and weighed on an 80-foot-x-14-foot above-ground Rice Lake Weighing Systems truck scale.

A second 80-foot-x-14-foot Rice Lake scale is used after dumping.

After probing and weighing, trucks proceed to a 35-foot-x-65-foot Nucor truck receiving building housing two 1,000-bushel mechanical receiving pits. The pits feed two 20,000-bph Sukup drag conveyors, which in turn, feed two 20,000-bph Sukup bucket elevators outfitted with 18x8 Maxi-Lift HD-Max low profile elevator buckets. The 190-foot legs are housed in a 18-foot-x-18-foot-x-170-foot Sukup support tower with switchback stairs.

From the legs, grain goes through a Schlagel full-round, four-duct SyncroSet distributor rated at 20,000 bph.

From the distributor, grain is moved to the flat storage building or 135-foot tank by a 40,000-bph AGI Hi Roller enclosed belt conveyor. The 72-foot tank is filled by a Sukup 30,000-bph drag conveyor and the 54-tank is filled by a Sukup 20,000-bph drag conveyor.

Grain Dryers

The elevator has two grain dryers, one 4,000-bph GSI dryer moved from the Altoona site and a new Sukup 4,700-bph model, which runs on LP gas. It receives wet grain via gravity and returns grain via a 10,000-bph Sukup drag conveyor to the receiving legs.

Truck Loadout

All of the facility's grain is shipped by truck thru two 5,000-bushel Sukup steel loadout bins located over a drive-thru support structure.

Mark Avery, associate editor