

CENTRAL VALLEY AG CO-OP

CASE STUDY

 **BULK STORAGE**
APPLICATIONS



CENTRAL VALLEY AG CO-OP (CVA) operates fertilizer storage, mixing and distribution facilities across the Midwest. After a storm permanently damaged a corroded fertilizer storage building in Tamora, Nebraska, CVA set out to replace the building with a safe, efficient enclosure.

The new building stores 40,000 tons of fertilizer and provides space for blending and distribution. Based on their past experiences with corrosive storage, the co-op determined the need for a fabric structure. After evaluating options, they chose a fabric structure on a rigid steel frame by Legacy Building Solutions.

BUILDING NAME

**Central Valley Ag Fertilizer
Storage Building**

OWNER

Central Valley Ag Co-Op

LOCATION

Tamora, NE

MARKET SECTOR

Bulk Storage

APPLICATION

**Fertilizer Storage,
Blending & Distribution**

SIZE

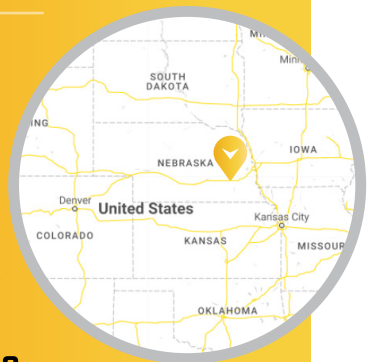
120' x 482' / 57,840 SF

SPECIAL FEATURES

**Replaces building damaged
by corrosion, fully lined**

INSTALLATION

Legacy in-house crews





Because the new building was designed with the same dimensions and capacity as the older facility, Legacy was able to reuse the existing concrete foundation and stem walls. Re-using these assets saved the time and money that would have otherwise been required for new construction. The walls increase the load-bearing capacity of the sidewalls and also increase the strength of the building in case of accidental collision from heavy equipment, which is operated inside the building on a daily basis.

A major contributing factor to the collapse of the previous building was exposure to fertilizer and dust. Eventually the poor attachment led the fabric cover to completely detach from the frame, leaving the building and contents vulnerable to weather damage.

Despite repeated attempts to repair the previous building, ultimately a replacement became a more economical solution. “The damage to the old building cost hundreds of thousands of dollars over the years,” said Dan McBride, operations manager at Central Valley Ag.

The new Legacy building is designed to resist the impact of constant exposure to corrosion. The frames are made of solid plate steel, which has no unseen areas for corrosion to begin – a major factor with the hollow tube trusses of the old structure. The frames are further protected by hot dip galvanizing, in which a solid layer of zinc plating is applied to all areas of the frame, further extending the life of the steel.

But the most prominent way that the building is preventing corrosion is with the liner. The building’s interior is lined with 12 oz. polyethylene fabric. The fabric is not susceptible to corrosion, and it completely separates the steel frame from even the smallest dust particles.

Proper ventilation is another critical factor in preventing corrosion. The new fabric building has two separate ventilation systems: one for the main building area, and one for the cavity created by the liner. Both systems use peak ARV vents, mesh soffits and aluminum endwall vents to create a complete passive ventilation system. “We liked the ventilation options in the Legacy building,” said McBride. “Moisture causes problems for us beyond just rust – it causes cleanliness issues and product loss.”

The building is also customized beyond corrosion resistance. It was designed for efficient handling and distribution of commercial fertilizer including a custom conveyor and catwalk, which is another carryover system addition from the previous building. In addition to the corrosion resistance and customized design features, icebreakers now run along the building’s eaves to protect the area around the building from ice and snow falling off the roof.

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Like all Legacy buildings, the Central Valley Ag fertilizer storage building is designed to meet local building codes. The sturdy steel frame and non-corrosive elements of the building will prevent the corrosion and weather damage that caused the previous building to fail – saving CVA and their members the costs and downtime associated with building replacement and repair.