# BULK Storage Solutions

LEGACY BUILDING SOLUTIONS





From the beginning, bulk storage has been a specialty for Legacy. That's because the needs of bulk storage companies and organizations compliment the benefits and features we have built into our tension fabric structures. For example, owners that store bulk commodities need a facility that is easy to load and unload, often with very large vehicles. Our use of solid steel tapered I-beams allows us to make very wide buildings, with wide openings, that do not need central column supports. That clearspan or freespan space means a lot to building owners in the bulk storage sector (and their drivers).

Here are some additional benefits with a Legacy structure that particularly address the needs of the bulk storage world.

- Virtually maintenance-free exteriors
- Durability
- Natural light
- Fully customizable (can fit in any footprint)
- No project too big (structures more than 300 feet wide and nearly limitless lengths)
- Liners
- Corrosion protection
- Solid steel frames provide engineering certainty and support cranes, conveyors, HVAC, fire suppression and more

This book is designed to show you the projects that indicate our commitment to the bulk storage industry.

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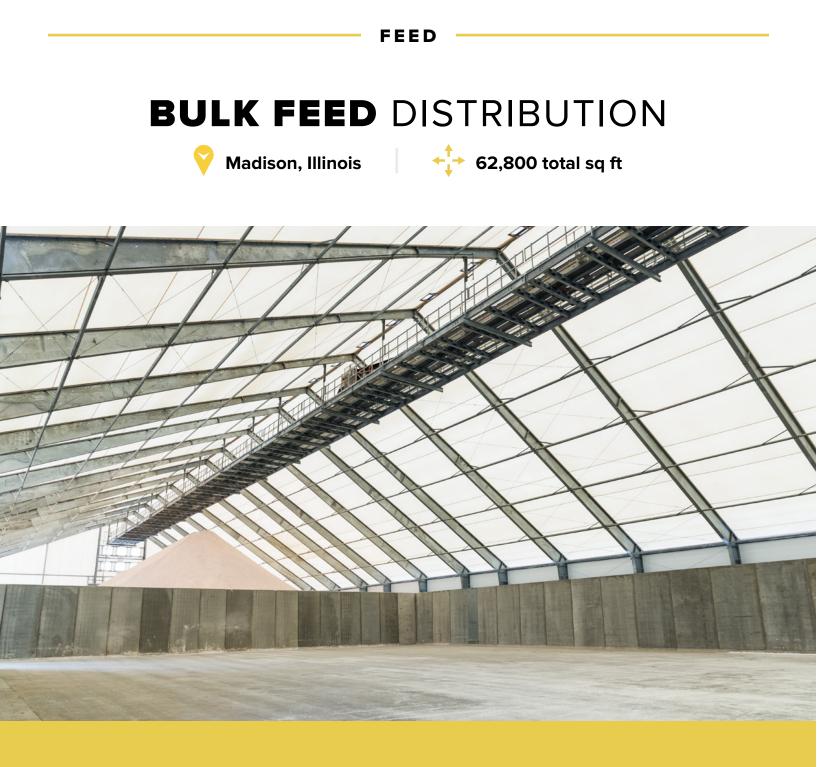
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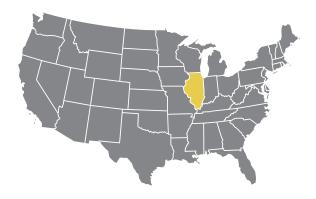




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The design process was really smooth, and the installation was very good. The crews arrived on time and did everything. They stayed with the job and did a thorough walk-through at the end.

OTIS ROBINSON PLANT MANAGER



#### SIZE

• 120 ft x 460 ft with 40 ft x 190 ft lean-to

#### SITE PARAMETERS

90 mph wind, wind exposure C,
 20# snow, enclosed, full exposure,
 low occupancy

#### FRAME + FABRIC

- Hot dip galvanized steel frame
- PVC fabric cladding, white with gray trim

#### **VENTILATION + DOORS**

- 18-in overhangs with mesh soffit for ventilation
- Two personnel doors and four overhead doors

#### **ADDITIONAL FEATURES**

- Conveyor load of 750 lbs. per running foot
- Precast concrete storage buns with sliding steel bin gates and panels
- 40,000-ton storage capacity

#### **INSTALLATION SERVICES**









## FLAT FEED STORAGE

Rose Hill, North Carolina

+++ 60,000 total sq ft



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We needed a building we could adapt. Having everything contained in one facility was easier than trying to add another part to an existing building. It was a great idea that allowed us to save space and not have wasted space.

KATIE ELMER SMITHFIELD CORPORATE ENGINEER



#### SIZE

• 125 ft x 480 ft

#### **SITE PARAMETERS**

 10# ground snow load, 109 mph wind, seismic C, wind exposure C, fully enclosed, fully exposed, low hazard

#### FRAME + FABRIC

- Primed rigid steel frames mounted on CIP foundation
- PE fabric cladding, including interior fabric liner

#### **VENTILATION + DOORS**

- Standard 18-in eave overhang with venting under eave
- 24 ARV-2000 vents are used to ventilate the cavity
- 12 tunneled ARV-2000 vents are used to ventilate the building's main air volume
- Six overhead doors and three personnel doors on sidewalls

#### **ADDITIONAL FEATURES**

- Exclusive 20 ft on center paneled roof system
- Point load for conveyor and catwalk
- Two full sets of egress stairs, platforms and hangars installed



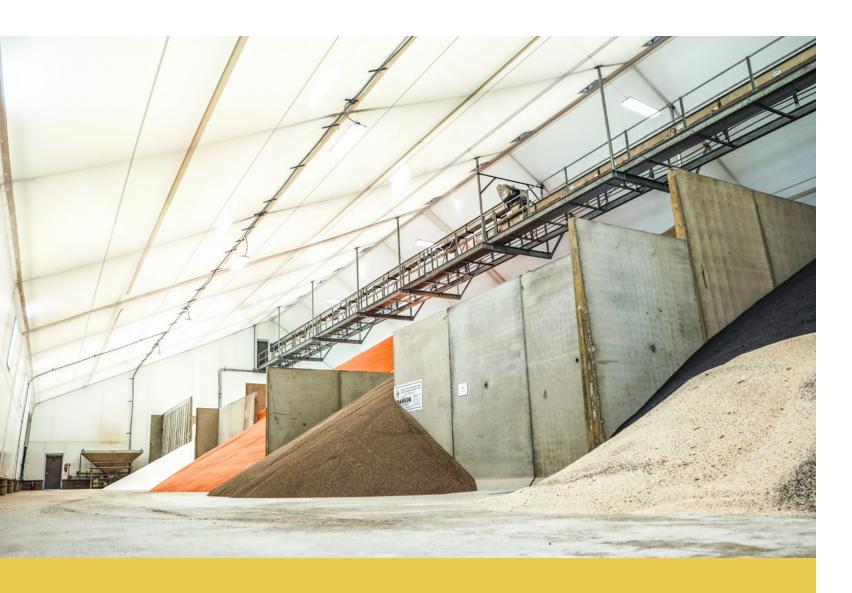




# FERTILIZER STORAGE

Williams, Minnesota

+++ 14,616 total sq ft





We needed reasonably priced storage. We didn't feel like a traditional building was going to fit our budget.

BRENT BENIKE GENERAL MANAGER



#### SIZE

• 84 ft x 174 ft

#### **SITE PARAMETERS**

 60 psf ground snow load, 105 mph wind load, exposure C, seismic A

#### FRAME + FABRIC

- All steel components are hot dip galvanized
- ExxoTec<sup>™</sup> Elite PVC fabric cladding, white with green trim
- Interior fabric liner

#### **VENTILATION + DOORS**

- Ventilated with 18-in overhang with mesh soffit
- ARV roof ventilators
- Two personnel doors and two overhead coiling doors

#### ADDITIONAL FEATURES

- Precast concrete panels along walls and storage bins
- Limited building footprint
- Three types of rigid steel frames support 4,600-lb, 8,400-lb and 9,600-lb conveyor loads along the structure

#### **INSTALLATION SERVICES**







# BULK FERTILIZER STORAGE



**← 19,404** total sq ft



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We were working on a very aggressive timeline. We bought the land in February, and we needed to be operational early in the fall. Legacy is always on the ball and very transparent with prices and timelines.

CURTIS HOAKISON WOODBINE PROCUREMENT MANAGER



#### SIZE

 Combined structure: 48 x 103 ft + 84 ft x 80 ft + 129 ft x 60 ft

#### SITE PARAMETERS

 25 psf snow load, 105 mph wind load, wind exposure C, enclosed, full exposure

#### FRAME + FABRIC

- All steel components are hot dip galvanized
- ExxoTec<sup>™</sup> Elite PVC white fabric cladding

#### **VENTILATION + DOORS**

- Ventilated with 18-in overhang with mesh sofft and 24 ARV roof ventilators
- Two personnel doors and three overhead coiling doors

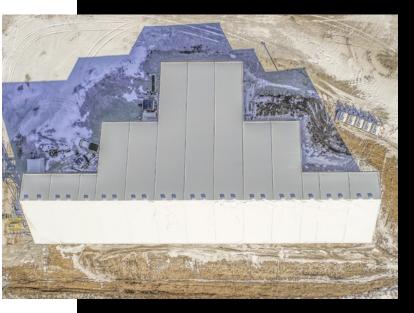
#### **ADDITIONAL FEATURES**

- Offset peak
- Each frame designed to support 350-lb conveyor and catwalk load
- Precast concrete panels along walls + storage bins

#### **INSTALLATION SERVICES**







FERTILIZER

## FERTILIZER STORAGE + BLENDING

East Dubuque, Illinois

**63,010** total sq ft



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Because of our soil issues, we simply couldn't afford to construct a more traditional building. The lightweight design of our Legacy building allowed us to reach a compromise between soil conditions and cost. Regarding the design and construction phases of the building, I can say that the process went exceptionally well. When I made eleventh-hour changes to the job, Legacy handled them with ease. The Legacy construction crew was very professional and courteous. They finished the job well ahead of schedule, worked safely, and followed our stringent safety requirements to the letter.

JOE BITTER ALLIANT ENERGY / IEI BARGE SERVICES



#### SIZE

• 77 ft x 580 ft with three lean-tos

#### **SITE PARAMETERS**

30 psf snow load, 90 mph windspeed

#### **FRAME & FABRIC**

- HDG rigid steel frame
- FR PE fabric cladding, white with green trim

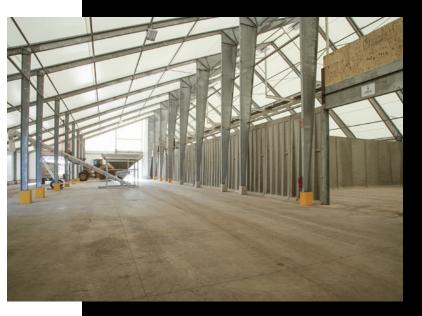
#### **VENTILATION & DOORS**

- Eight framed and wrapped doorways across three lean-tos
- 30 RV-3000 CFM roof vents
- 18-in overhangs with ITS tie down and mesh ventilation

#### **ADDITIONAL FEATURES**

- Six 14 ft x 11 ft bin lift gates
- Frames engineered to carry loads of 350 lbs per running foot
- Precast concrete panels utilized for storage bin walls

#### **INSTALLATION SERVICES**





# FERTILIZER STORAGE, MIXING + BLENDING

Crary, North Dakota

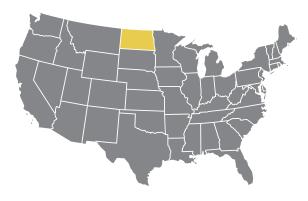
**4**→ 37,200 total sq ft





Legacy delivered more bang for the buck.

PATRICK TRONSON ASSISTANT MANAGER



#### SIZE

108 ft x 300 ft structure with a 40 ft x 120 ft lean-to

#### SITE PARAMETERS

26.1 psf ground snow load, 105 mph wind load, exposure C, seismic A

#### FRAME + FABRIC

- All steel components are hot dip galvanized
- ExxoTec<sup>™</sup> Elite PVC fabric cladding, white and gray

#### **VENTILATION + DOORS**

- Passive ventilation through mesh soffit and roof vents
- Two personnel doors and two overhead doors

#### **ADDITIONAL FEATURES**

- Combination cast-in-place and pier foundation
- Conveyor system is supported by the roof beams and can load about 800 tons an hour
- 15,000-ton capacity

#### INSTALLATION SERVICES







# **AGRICULTURAL SALT** BAGGING + DISTRIBUTION

Naples, Illinois

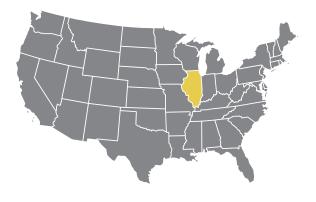
15,000 total sq ft



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One of the first considerations for storage is if the product is weather-sensitive. Anytime we're doing any type of fertilizer product we avoid steel. The building will have a lot of indirect contact with fertilizer and dust, and you want to use fabric because of the longer lifespan when dealing with corrosive materials.

DAVE WALKER PROJECT MANAGER, CONSOLIDATED TERMINALS & LOGISTICS



#### SIZE

• 100 ft x 150 ft

#### **SITE PARAMETERS**

• 20 psf snow load, 90 mph windload, exposure C, full exposure

#### FRAME + FABRIC

- Hot dip galvanized rigid steel frame
- ExxoTec<sup>™</sup> Elite PVC fabric, white with gray trim

#### **VENTILATION + DOORS**

- Overhead doors for heavy equipment access
- 18-in overhang with mesh soffits and roof ventilation

#### **ADDITIONAL FEATURES**

- Offset peak with fabric wall between two sections
- CIP concrete foundation with stem walls

#### **INSTALLATION SERVICES**









💛 St. Louis, Missouri

**28,080** total sq ft



### 66

Right away we noticed that the inside of the building was very clean, very bright. The white panels on top really let light come in. It's a nice building compared to the wooden domes.

DARRIN CHAPMAN PLANT MANAGER



#### SIZE

• 108 ft x 260 ft

#### **SITE PARAMETERS**

 20 psf snow load, 90 mph windspeed, wind exposure C, enclosed, full exposure

#### FRAME + FABRIC

- Rigid steel frames designed for 875 lb per linear foot conveyor + catwalk load
- ExxoTec<sup>™</sup> Elite PVC fabric cladding, blue with white roof

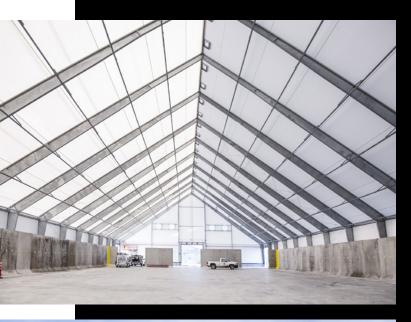
#### **VENTILATION + DOORS**

- 18-in overhangs with mesh ventilation intake and icebreakers
- One personnel door and three
  overhead coiling doors

#### **ADDITIONAL FEATURES**

 Precast concrete panels create storage bins

#### **INSTALLATION SERVICES**



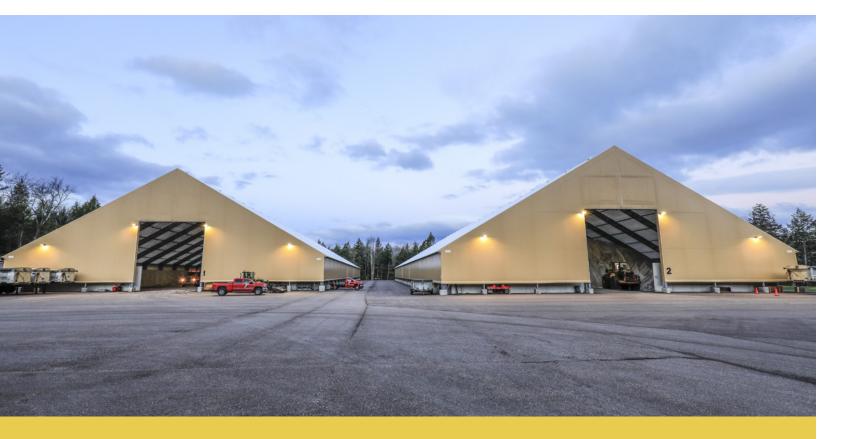




# SALT STORAGE + DISTRIBUTION AT RAILROAD TRANSLOAD FACILITY

Shelburne, Vermont

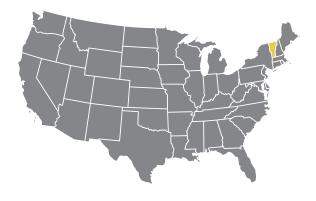
🕂 101,520 total sq ft



# 66

Legacy's work ethic is incredible. Our company makes a point of being very neat, and the cleanliness of the railroad site throughout construction showed Legacy really respected that.

JOE BARRETT PRESIDENT, BARRETT TRUCKING



#### SIZE

• Two 141 ft x 360 ft buildings

#### **SITE PARAMETERS**

 40 psf ground snow load, 29 psf roof snow load, 105 mph wind load

#### FRAME + FABRIC

- Hot dip galvanized steel frames
- Non-FR PE fabric cladding, tan with white roof

#### **VENTILATION + DOORS**

- 18-in overhangs with ventilated mesh soffit on each side
- Two aluminum ARV-2000 roof vents framed and installed in each bay

#### **ADDITIONAL FEATURES**

- Pier with extended anchor foundation supplied by owner
- 12-ft Hanson precast concrete retaining walls
- Capped purlins to prevent dust entry









This book shows you just a fraction of the bulk storage projects Legacy has designed, fabricated and completed. We hope you liked these "greatest hits". More importantly, we hope it showed you what we can accomplish. We bring a lot of experience to the table, but we also pride ourselves on being able to listen to your needs and the needs of building owners.

Finally, we love a challenge. Have a storage building that needs to fit between the railroad tracks and a local highway? We can design that. Need a frame that will support extra equipment such as a conveyor system? We do that all the time. Need a facility that can meet current and future requirements? Let us show you what we can do.































#### **HEADQUARTERS**

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