

Agriculture

Oklahoma Equine Hospital



2019 Winner

SIP walls: 8" with EPS insulating core

SIP roof: 10" roof with EPS insulating core



**Structural Insulated
Panel Association**

Enercept
Charlie Ewalt
Oklahoma Equine Hospital
Goldsby, OK



Agriculture

Oklahoma Equine Hospital

Enercept, Inc.
Charlie Ewalt, Roberta Bartel
3100 9th Avenue SE
Watertown, SD 57201

Phone: 605-882-2222
Email Address: enercept@enercept.com
Website: www.enercept.com



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Oklahoma Equine Hospital
2652 Reece Lake Road
Goldsby, OK 73093

Date Completed: Summer 2018

Dimensions of building: 50 x 76 with 14' tall walls

Total sq. ft. of conditioned space: 3,800 sq. ft.

Built By:
Backside of Nowhere LLC and Minjares and Sons
Construction LLC
Bob Evans
PO Box 241
Prague, OK 74864

Panels Manufactured By: Enercept, Inc.

Designed By:
Backside of Nowhere LLC
Bob Evans
PO Box 241
Prague, OK 74864

Describe the end use of the building: The structure is an additional building to the existing hospital complex designed specifically to accommodate Hallmarq equine standing MRI equipment, create a surgical suite, and allow functional space for lameness exams.



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How did SIP construction help you get this job? The performance of two earlier SIP projects by the owner, Dr. Joe Carter, has made SIPs the construction method of choice. His first project was for an Ardmore, OK equine hospital facility, and second was housing complex for employees.

- SIP wall thickness and core material: 8" walls with EPS insulating core.
- SIP roof thickness and core material: 10" roof with EPS insulating core.



Describe the benefits of using SIPs on this project. Did SIPs help save time, labor, construction costs, or energy? SIPs provided energy efficiency, sound control, a shorter construction time, overall interior comfort, ability to regulate interior thermals (especially for the MRI area), and improved performance of HVAC system. The SIP construction provided a very energy efficient envelope that was very stable, so the only design challenges were driven by the fluctuating internal loads.



Describe any innovative design elements or structural engineering involved: A pass-through lift system from the MRI room into the surgical area was designed into the structure. The supportive beam is embedded in the SIP wall panels. The building was designed with a center cupola for natural lighting. A SIP wall, centered in the cupola allows for other services to be executed in one half of the building simultaneous to surgery on the other side, the wall provides additional sound control. Engineered rock was used in the MRI room and the lameness area to provide a strong surface to withstand any accidental meeting with a horse. The WERM flooring laid in the lameness area and the porches is designed to be non-porous and will not become slick when wet.



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The MRI room is 360 degrees shielded with its own HVAC unit to climate control the magnet and computer unit by maintaining a constant temperature and humidity level to insure image quality and factory calibration of the equipment.

The MRI envelope also required exhausts which required an ERV (energy recovery ventilator) to replace air exhausted. The load in the unoccupied mode is half of the occupied load. They installed a Carrier variable capacity heat pump & indoor blower that modulates with the changing load of the MRI. The Carrier ERV recovered 70% of the energy exhausted from the building. Design considerations for the surgery/recovery room & wash bay area were driven by the occupied and unoccupied load diversity. This is due to the heat rejection from the horses and the added humidity from washing the horses. The equipment selected has two speed capacities with a variable speed blower coil to insure temperature and humidity control as specified.

LED lighting was used throughout the equine clinic.

The clerestory provides natural, passive solar lighting.

One bathroom has the sink counter and a bench made from slabs of wood from a giant tree that was felled to clear land for this construction project.

The surgery suite includes a surgical prep room with a swinging door into the new large surgery room that includes a Shank's hydraulic equine surgery table. It is in line with two adjoining, padded induction/recovery rooms by a motorized hoist system to move the horses while anesthetized from one room to the other. By having two rooms, one horse can be recovering and another can be induced and taken into surgery. The MRI room is aligned with these rooms and can also be used to anesthetize and recover a horse for an MRI. A large covered back "porch" allows horses to be prepped before entering the building for either procedure.

There are two storage rooms for equipment, supplies, and allow passage between the back and the front of the building. The front half is a long, open space to jog horses to evaluate lameness. To the side, there are two islands containing cross ties, sinks, and cabinets, creating 3 spaces to tie horses, plus the wash rack. This creates a place for diagnostic imaging equipment or therapeutic treatment supplies to be laid out safely and sterilely.

As performance horse soundness is the largest part of our practice, it is important to have a clean, safe, spacious and attractive area. Two surgery room walls are lined with FRP that has murals of horse photographs one of the employees had taken, another has real stone to enhance the western feel and to hide the water lines to the hose reel. The recovery rooms have low profile, flat door handles with a push/pull mechanism for easy and fast use and safety of the horse.



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