

## **Project #11 – Classic**



# **Dakota Zoo Penguin Exhibit**

## Dakota Zoo Penguin Exhibit



### Participant Information:

Enercept  
Roberta Bartel  
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Watertown, SD 57201  
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### Category:

Commercial/Industrial/Institutional Buildings under 10,000 sq. ft.

### Project Information:

Dakota Zoo Penguin Exhibit  
600 Riverside Park Rd  
Bismarck, ND 58504

Date completed: September 2021

Total cost of the project: \$1.6 million

### Dimensions:

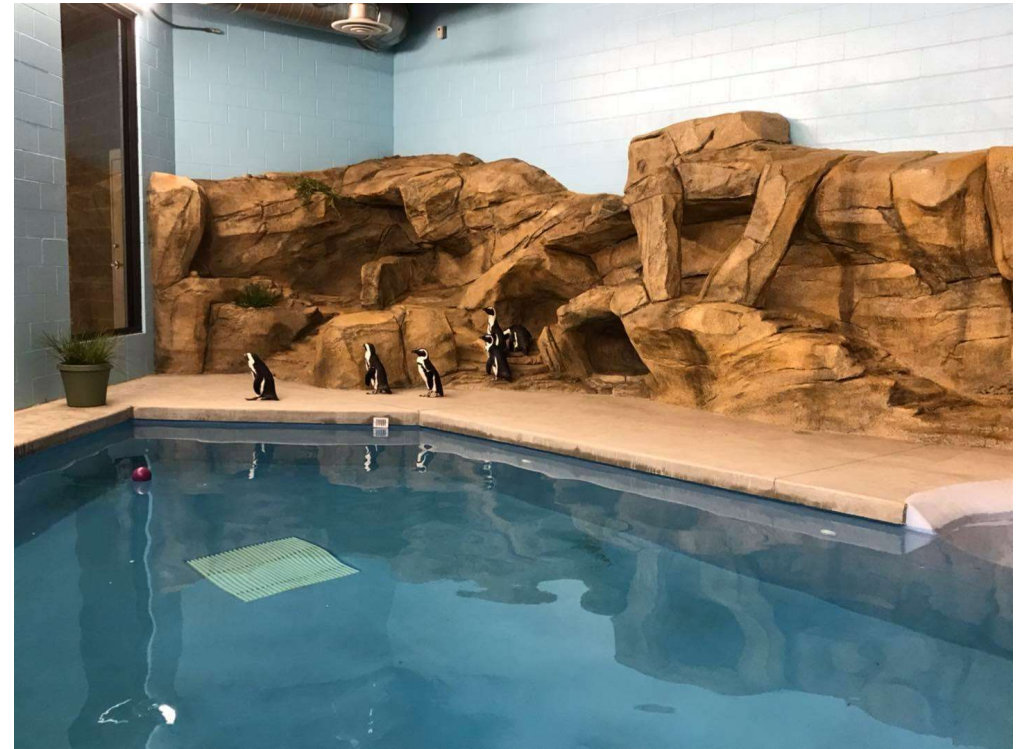
Irregular

Total sq.ft.: 4,655

### Built by:

Nelson Builders  
Dave Nelson  
1700 Scout St  
Bismarck, ND 58504  
701-391-3890

Panels Manufactured by: Enercept SIPs



## Dakota Zoo Penguin Exhibit



### Designed by:

A.C.I.  
122 East Main Ave; Ste 202  
Bismarck, ND 58501  
701-255-3057

### Building use:

The building is a Penguin enclosure. The exhibit includes an outdoor and indoor pool with naturalistic rock work. It houses eight male African penguins.

### SIP benefits for this job:

Because of the superior insulating quality of SIP construction, and that the R-value increases as temperatures fall.

The Dakota is also a past customer of Dave Nelson and Enercept. They used us for a small petting barn, and refrigerated building for food, and have plans to build a 24'x24' Honor display building in 2022.

SIP wall thickness: 8' walls with EPS foam core

SIP roof thickness: 10" roof with EPS foam core

### Comments on labor saving, construction time, construction costs and energy savings:

Dave said that building with SIPs definitely saves on labor costs, and enabled him to enclose the building more quickly so he could start heating the enclosure for winter finishing. He also appreciates the excellent service he receives from Enercept.

### Innovative design elements:

The 10" double-sided roof panels are supported by several engineered glu-lam beams. All SIPs were built to structural engineered specifications.

### HVAC:

The Penguin exhibit area has an Aeon mechanical system with a high efficient energy wheel to provide air changes as well as control the humidity while maintaining heating and cooling needs of this space. The viewing area is also heated and cooled with Aeon mechanical equipment. It is paired with a RenewAire energy recovery ventilator. Building pressure controls allow the viewing area to always remain in a positive pressure without holding exterior doors open.

### Additional comments:

Northern Plains Heating and Air was excited when they got the call to design an HVAC system for the new Penguin Exhibit for the Dakota Zoo. And equally excited to hear it was a structural insulated panel construction, which would allow them to control building pressure better than a typical structure using general building practices. The one demand that Dave Nelson with Nelson Builders had for Northern Plains was "we want to be able to see the penguins not smell them"!

The Dakota Zoo is partnered with the Saving Animals from Extinction Group, and participates in the Species Survival Plan. African penguins are on the Endangered Species list. The Zoo is set to welcome a female African penguin in 2022.



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