BIG UPGRADES FOR PYGMY HIPPOS

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CUSTOMER
John Ball Zoo

PROJECT
Pygmy Hippo Exhibit

LOCATION
Grand Rapids, Michigan

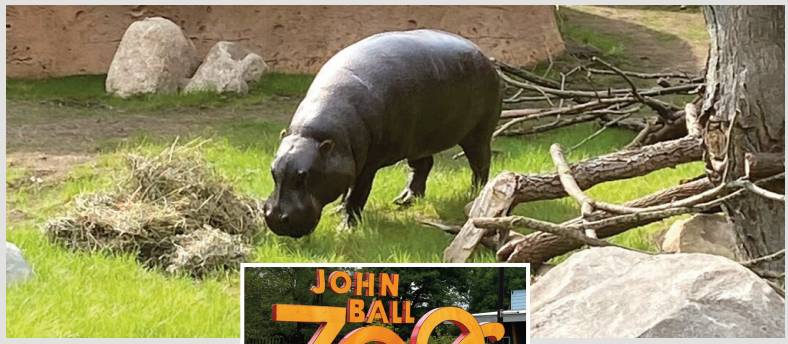
CONTRACT BUDGET
$1.3 Million

START DATE
Sept 2021

COMPLETION DATE
March 2023

SERVICES
Electrical, Generators, Lighting, Lightning Protection, Site Lighting, Renewable Energy, Solar

PARTNERS
Chint Power Systems, Generac, Hedrick Associates, K Group Companies, Michigan Lightning Protection, Square D | Schneider Electric, Trina Solar



OVERVIEW

John Ball Zoo in Grand Rapids embarked on an ambitious endeavor to create an impressive pygmy hippo display, which serves as the centerpiece of the zoo's "Time to Soar Campaign."

Our team was contracted to handle the electrical aspects of the pygmy hippo exhibit, which included the installation and maintenance of a solar array. This solar array was designed to generate power for the display, with any excess energy being fed back into the main distribution panel for consumption by the zoo.

The solar panels were strategically installed in three separate locations: the flat roof, the slanted roof over the hippo area to maximize production, and the viewing area where 14 transparent solar panels are showcased. Much of the power is produced by the 132 panels installed on the gift shop roof. On a sunny day,

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with ample sunlight, these panels can generate up to 70 amps per phase, which is then fed back into the main distribution panel.

To manage the solar production efficiently, we installed two 50kW 208v 3 phase inverters. One inverter supports the building structure, while the second is dedicated to managing the solar production specifically for the gift shop. For accurate monitoring, we incorporated a Hedrick meter, providing real-time data on solar power generation being injected into the exhibit's power consumption. This valuable data is recorded and used for analysis and evaluation, ensuring the solar array operates efficiently and effectively.

Beyond the solar array, our team performed vital electrical work to ensure the exhibit's smooth and sustainable operation. This involved installing motor control centers and distribution panels to power the pumps, fans, and mechanical systems, guaranteeing reliable care for the display's residents.

In addition to the electrical aspects, Windemuller also took charge of installing several low voltage systems. The IT cabinet effectively manages the data cabling and networking of various systems, including the intercom system, IP camera system, and speaker system. These integrated systems play a pivotal role in facilitating the smooth operation and coordination of the exhibit.

Notably, the pygmy hippo exhibit proudly holds the prestigious Living Building Challenge (LBC) certification, a testament to John Ball Zoo's commitment to sustainable and environmentally friendly practices. Windemuller is proud to have supported these admirable energy objectives, enhancing environmental performance, and reinforcing a steadfast dedication to conservation efforts.

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