



Case Study: Spatial Designs

OutBack Backup Power System Installation



Overview

Founded in 1983 in Mason City, Iowa, by Tom Hurd, **Spatial Designs provides architectural consulting and design on diverse projects.** The architectural firm has been commissioned to work on more than 1,500 projects in 15 states across the U.S. and on one project in Africa, the range of which includes restaurants, banks, shopping centers, schools, fire stations, **alternative-energy buildings and FEMA tornado shelters.**

In 2003, Spatial Designs decided to apply its considerable project expertise to its own firm, by designing and building itself a new office. New design considerations included wind and solar power generation, as well as greater energy conservation. **The long-term goal for Spatial Designs' office project was independence from the local utility, especially in light of previous power outages.** During blackouts, Spatial Designs' losses could run up to several thousand dollars' worth of time and labor costs, and the company's clients suffered blackout-related losses, as well. For example, two nearby grocery store clients experienced a loss of \$100,000 per store, per day during power outages.

For the new office, Spatial Designs wanted battery backup in addition to solar and wind energy resources. Preparing the firm for any grid failure was the original idea; the option to extend those safeguards to clients evolved as the renovations got underway.

System Specifications

Location: Mason City, Iowa

System Power: 7,200W Wind and Solar System

Components: Two VFX Inverter/Chargers



Despite being only a few miles from the nearest power plant, we experienced outages several times per year. Once we installed the OutBack Power system, we found we were much closer to our long-term goal of independence from the grid, and we could help our clients with their own renewable energy projects, too."

Tom Hurd

Founder, Spatial Designs



Objectives

- Build an energy-independent, green office that can remain on-line and operational when the utility grid is down
- Save energy costs with a super-efficient building design and showcase the company's dedication to green practices
- Establish best technological practices and systems to offer renewable energy-based projects to clients



Solution

As Spatial Designs installed energy systems based on wind and solar, it turned to OutBack Power for critical balance-of-system power-conversion components. The design firm selected two OutBack Power **VFX 3648 inverter/chargers** to supply 7,200W of renewably-generated electricity to its office. Integrating OutBack Power components with wind turbines and solar panels for its own purposes advanced Spatial Designs in its commitment to deliver similar capabilities to its clients.

Since installing the system, Spatial Designs has achieved payback on its initial investment through utility savings and the additional energy production the firm can access during a grid failure. The lower operational costs became a business asset during the recession, too, when Spatial Designs was able to promote its inexpensive, renewable energy options to clients at a time when more traditional projects were sparse. The company also became one of the first to design and sell solar-powered Federal Emergency Management Agency (FEMA) tornado shelters, which are powered with OutBack equipment.

Spatial Designs continues to evolve the ways in which it applies its renewable energy systems. The company's next goal is to augment its wind and solar power solutions with a hybrid hydrogen fuel cell system, which will allow the organization to tap into electricity even during overcast, windless days.

Benefits

- Spatial Designs generates nearly 100 percent of its power from renewable sources, with conversion help from the OutBack Power system.
- The renewable energy system supports all of Spatial Designs' heating and cooling needs in its 3,000 square-foot building, in a climate where the temperature can drop to 30 degrees below zero.
- Spatial Designs can continue project work during power outages with solar and wind-generated energy powered by OutBack to meet client deadlines and budgets.