



EcoStruxure™  
Innovation At Every Level

# RELIABILITY

## A clear view of power management

Guardian Glass — Dewitt, Iowa

A leading glass manufacturer uses EcoStruxure™ solutions to save money and improve operational reliability.

Life Is On

Schneider  
Electric



EcoStruxure Power offers Connected Products, Edge Control, and Apps, Analytics, and Services from Schneider Electric's IoT-enabled EcoStruxure IT architecture. Together, these innovations help plants thrive at every level.

### Pulling glass all day, every day

Glass is something we likely take for granted. It's all around us in our daily lives, but we don't often stop and consider its importance. Glass enhances a building's aesthetic while augmenting its structural integrity. It plays a crucial role in safety. Quality glass can be beneficial to the environment by helping buildings achieve LEED status.

One of Guardian Glass' taglines is "See what's possible." That innovative spirit drives the company's passion to advance glass technology. We rely heavily on glass, and more goes into it than meets the eye.

The company's 750,000-square-foot plant in Dewitt, Iowa features a furnace that operates at 2,800 °F to pull approximately 700 tons of glass per day every day, around the clock. The furnace is critical to the plant's operation — a shutdown is unacceptable.

"We need reliable equipment to continue operating at the optimum level," said Mike Flesch, Senior Controls Engineer at Guardian Glass. "Reliability means having uptime 365 days, 24/7." When that reliability was compromised in 2017, it came at a substantial cost to Guardian Glass.

## Goal

Guardian Glass, a leading glass manufacturer, needed to improve power reliability and efficiency to restore savings from credits on monthly utility bills.

## Story

Guardian Glass wanted to achieve a power factor over 95% to receive a monthly credit on utility bills. Schneider provided the connected solutions for Guardian Glass to realize its goal.

## Solutions

Schneider provided reliability and efficiency through EcoStruxure Power Monitoring Expert, VarSet™ capacitor banks, and PowerLogic™ meters, backed by a Power Advisor Digital Service Plan and Power Quality Maintenance Contract.

## Results

- 97% power factor restored
- 4% monthly credit on utility bills
- Cost savings enabled a two-year ROI





### Restoring utility credits

Guardian Glass experienced some disappointing and costly results from Schneider competitors.

“The worst problem we’ve ever had with electrical issues here was a power failure on the grid, which totally shut our plant down for several hours,” said Flesch. “That was difficult to recover from.”

The plant also suffered a capacitor bank failure that caused the plant’s power factor to drop below the threshold where the company could claim valuable credits on its monthly energy bills. The loss of savings from the credits persisted for more than two years.

Guardian Glass turned to Schneider Electric to install new capacitor banks, power monitoring equipment, and software.

“I got several different proposals for power factor correction,” explained Flesch. “I was worried that those partners may not be around in the future to provide service. Schneider Electric has proven historically to be a good partner.”

When the time came to choose a trusted partner for the capacitor bank project, Guardian Glass again chose Schneider based on prior experience.

“I could have gone with several companies to get my power factor where it needed to be, but Schneider Electric provided more with the software that comes with it,” Flesch explained.

“As soon as the VarSet capacitor banks were installed, we immediately realized a three-point gain on the power factor.”

— Mike Flesch,  
Senior Controls Engineer,  
Guardian Glass

### Guardian Glass plant at a glance:

- 750,000 square feet
- 700 tons of glass produced daily
- 97% power factor
- 4% energy credit savings per month

## The determining factor

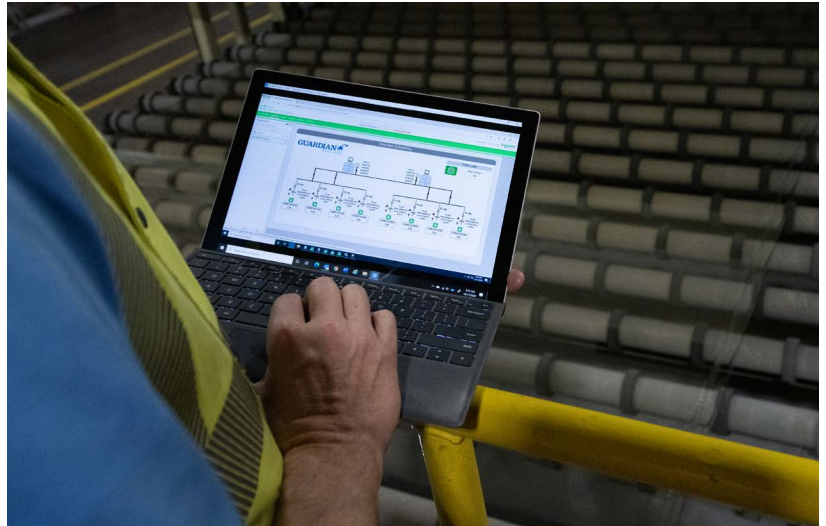
Different production runs mean variable power loads, so Guardian Glass chose the VarSet capacitor banks to keep the power factor consistent throughout plant operations. The company immediately saw dividends.

Utilities offer credits to plants for high power factor because the utilities need to adjust generation appropriately — it helps the environment and reduces the demand for new generation stations. Maximizing power factor is a benefit for both the plant and the utility.

Flesch detailed the results: “We installed the VarSet capacitor banks in February 2020. And in that month, I received the first utility credit since the other capacitor banks failed two years prior.”

That brought Guardian Glass’ power factor up to 97 percent, making it eligible for monthly credits of four percent on its utility bill. That alone justified the project and set it on track for a two-year payback.

The solution didn’t end with the capacitor banks. PowerLogic meters provide Guardian Glass with important visibility into power usage. The M5000 Series and the PM8000 Series meters support the energy usage as well as the visibility to reveal damaging and costly power quality issues — allowing the facility to fix issues that would otherwise be unseen.



Now it has the ability to determine power distribution to various processes in the plant. Those analytics guide managers on how to improve efficiency and reduce energy usage. It also enables shadow billing to ensure utility charges are accurate.

In addition, EcoStruxure Power Monitoring Expert software gives Guardian Glass full visibility of power factor, real-time power, capacitor bank steps, and various alarms for any issues with the system. This enables the company to manage the plant’s electric usage effectively.

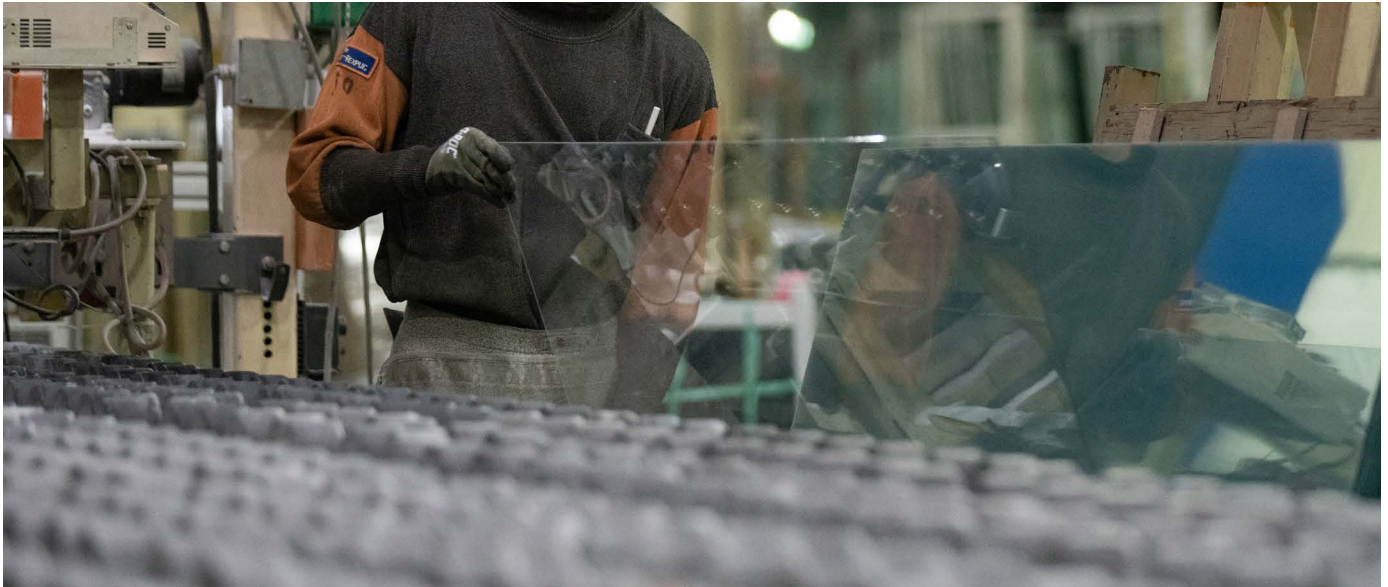
“I’m able to view, from anywhere in my plant or my home, the power consumption of the plant

“Our digital transformation to Schneider Electric EcoStruxure products has allowed me to have greater insight into my power, reliability, and power factor.”

— Mike Flesch,  
Senior Controls Engineer,  
Guardian Glass







to ensure if curtailment is needed, and I'm able to do it immediately," said Flesch.

That insight also allows Guardian Glass to monitor voltage sags and determine if the cause is from the utility or within the plant.

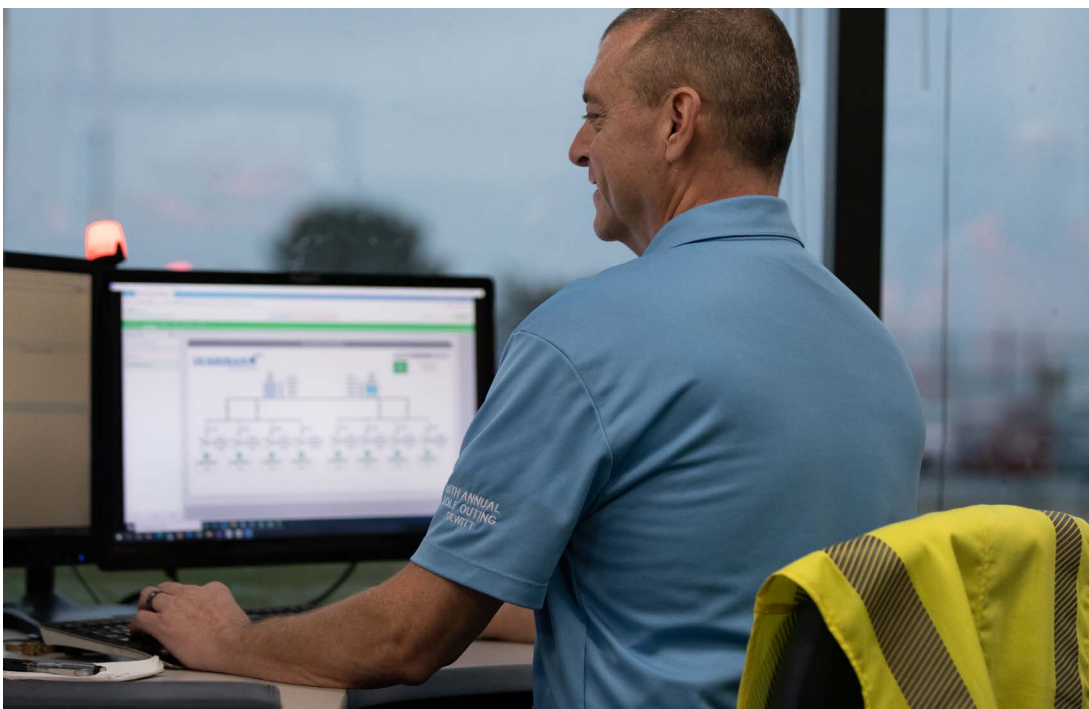
"It's important to know where voltage sags come from," said Flesch. "Because if they're internal to your plant, you have to find the source and figure out what's causing it. Voltage sags from the utility will cause equipment downtime and reduce lifetime. By using the PowerLogic meters to determine

the origination of the sags, if I know that it's coming from the utility, I'm able to contact the utility and let them know that I know that's there."

Guardian Glass is covered by the EcoStruxure Power Advisor Digital Service plan that offers peace of mind with energy expertise and on-site assistance. It's backed by advanced analytics and expert engineers, and Power Advisor finds and prioritizes electrical network and data quality issues in the system, recommending ways to correct them.

4%

utility bill credit, thanks to a 3% increase in power factor



Additionally, a Power Quality Maintenance Contract ensures that the equipment is maintained and performing as expected for the next three years, resulting in a properly maintained system that operates at peak efficiency.

**Compatible partners**

Guardian Glass and Schneider have been partners since the beginning in DeWitt, and the partnership has developed a level of trust.

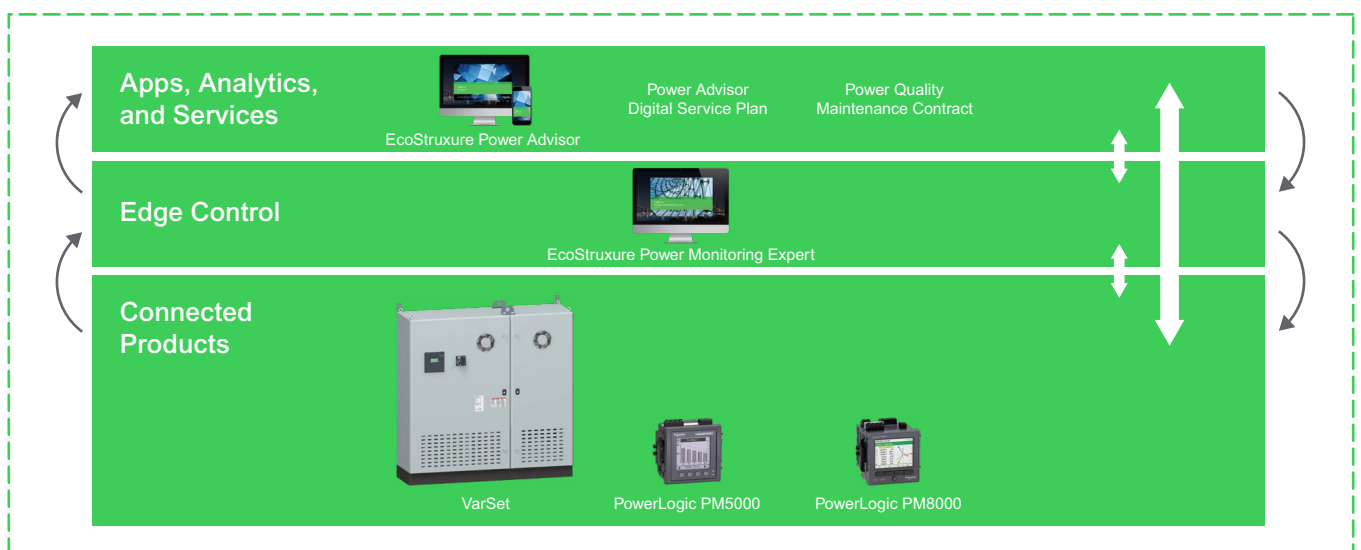
The plant has had Square D distribution and circuit breaker equipment since it was built in 1996, so the relationship was well-established — and set an expectation for future success.

“Schneider Electric went above and beyond in this project from inception,” said Flesch. “My representative helped me determine the capacity that was required for the equipment that I needed. He also saw that we had some equipment that we could reuse in the new system, which ended up saving me money in the long run. I also found the service installation technicians to be very professional and very knowledgeable. That’s what keeps us in partnership.”



“I have confidence that Schneider Electric sees my big picture and will look out for me in the future,” said Flesch.

**EcoStruxure Power**  
Innovation At Every Level



EcoStruxure Architecture

# EcoStruxure™

## Innovation At Every Level

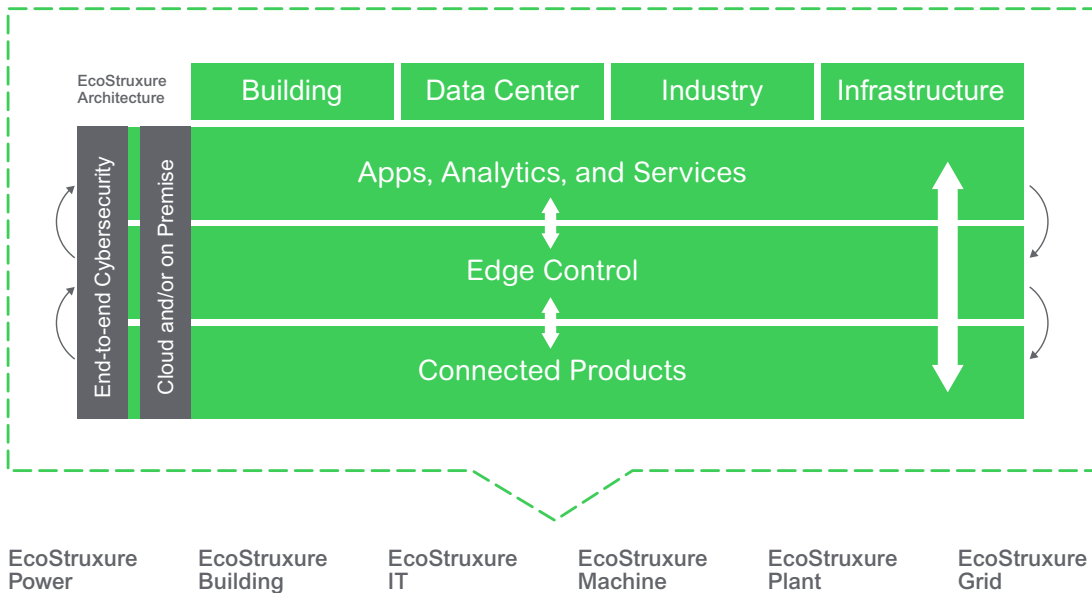
### IoT-enabled solutions that drive operational and energy efficiency

EcoStruxure is Schneider Electric’s open, interoperable, IoT-enabled system architecture and platform.

EcoStruxure delivers enhanced value around safety, reliability, efficiency, sustainability, and connectivity for our customers.

EcoStruxure leverages advancements in IoT, mobility, sensing, cloud, analytics, and cybersecurity to deliver Innovation at Every Level including Connected Products, Edge Control, and Apps, Analytics, and Services. EcoStruxure has been deployed in 480,000+ sites, with the support of 20,000+ system integrators and developers, connecting over 1.6 million assets under management through 40+ digital services.

### One EcoStruxure architecture, serving four end markets with six domains of expertise



### Connected Products

The Internet of Things starts with the best things. Our IoT-enabled best-in-class connected products include breakers, drives, UPSs, relays, sensors, and more. Devices with embedded intelligence drive better decision making throughout operations.

### Edge Control

Mission-critical scenarios can be unpredictable, so control of devices at the edge of the IoT network is a must. This essential capability provides real-time solutions that enable local control at the edge, protecting safety and uptime.

### Apps, Analytics, and Services

Interoperability is imperative to supporting the diverse hardware and systems in building, data center, industry, and grid environments. EcoStruxure enables a breadth of agnostic Applications, Analytics, and Services for seamless enterprise integration.

[Find out more about EcoStruxure.](#)

# Learn more

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