

POWERSHADE® ROOF



Smart **Energy** Where the World Needs It

OUR PRODUCTS

Microgrid solutions for a wide range of markets and customer needs



PowerShade® Semitrailer



PowerShade® Roof



PowerShade® Auto & PowerParasol®

- **PowerShade® Semitrailer** – Reduces refrigeration fuel consumption and emissions
- **PowerShade® Roof** – Extends the life of roof surfaces and equipment
- **PowerShade® Auto** – Creates comfortable, secure parking environments
- **PowerParasol®** – Architectural structures that create cool, airy and welcoming indoor/outdoor venues
- **PowerUp™ & FastGrid™** – Energize remote locations; bring reliable, rapid-response energy to disaster zones

NEW PRODUCT LINES — POWERSHADE® ROOF



PowerShade® Roof

Markets & Applications

Data centers, refrigerated warehouse and distribution centers, food processing sites, manufacturing sites.

Features & Benefits

Enhances asset performance, lower costs.

- Ideal location for microgrid solution
- Panels float 10 feet above the entire roof surface
- Integrated into the building's support structure
- Extends the life of rooftop equipment, reduces maintenance costs.
- Cools roof, reducing energy consumption and costs
- Reduces investment in structural steel required below the roof

THE POWERSHADE® ROOF

- An Integrated solar energy generation and solar protection system designed and integrated into buildings
- Combines energy efficiency solutions with solar power production
- Developed jointly by SSE under a Joint Partnering Agreement with one of the world's largest structural steel fabricators and erectors
- Patent Pending with a registered trademark
- Solar modules protect roofs from damage and wear, (e.g. sun, hail) and produce more power than conventional rooftop solar
 - Horizontal structure covering the roof surface
 - Utilizes a vertical support system integrated into the building support structure
 - Clear height 8 - 12 ft. height above the rooftop surface to clear rooftop equipment and/or personnel
 - Movable sections of the solar array provide access for removal/addition of rooftop equipment



PROBLEM

- Current rooftop solar rooftop products are installed on roof surfaces and have several limitations
 - Compromise roof and roof surface
 - Systems held down by ballast add significant additional load to roof surface
 - Mounting systems that use bolts penetrate roof surface creating warranty and maintenance costs
 - Installing solar panels close to the roof surface increases heat reducing panel efficiency and causing a loss of power
 - Inefficient/limited coverage and power production
 - Solar panels are add-ons; rooftops are rarely designed to accommodate solar
 - Only about 30% - 50% of roof surface is usable due to equipment, equipment maintenance, shading, access aisles
 - Panels must be removed when roof is resurfaced; adding cost and interrupting power production



SOLUTION

- POWERSHADE® Rooftop – designed, integrated, elevated structure
 - Covers $\geq 75\%$ of the roof top contiguously
 - Protects and cools the roof surface, extends roof life
 - Protects and cools the rooftop equipment
 - Reduces building energy demand
 - Vertical support structure transfers load to the internal building frame
 - Surface of the roof is not compromised - no holes; no anchors
- More efficient – better design
 - Solar panels protect the roof from the harmful effects of the sun's rays
 - Greater rooftop coverage generates more watts/sq. ft.
 - Clear height of 8 to 12 ft. generates greater air circulation – panels operate more efficiently
 - Removable sections provide safe, convenient access to roof and equipment for removal and replacement
 - Enables sizing of smaller rooftop mechanical equipment



POWERSHADE[®] ROOF

Before



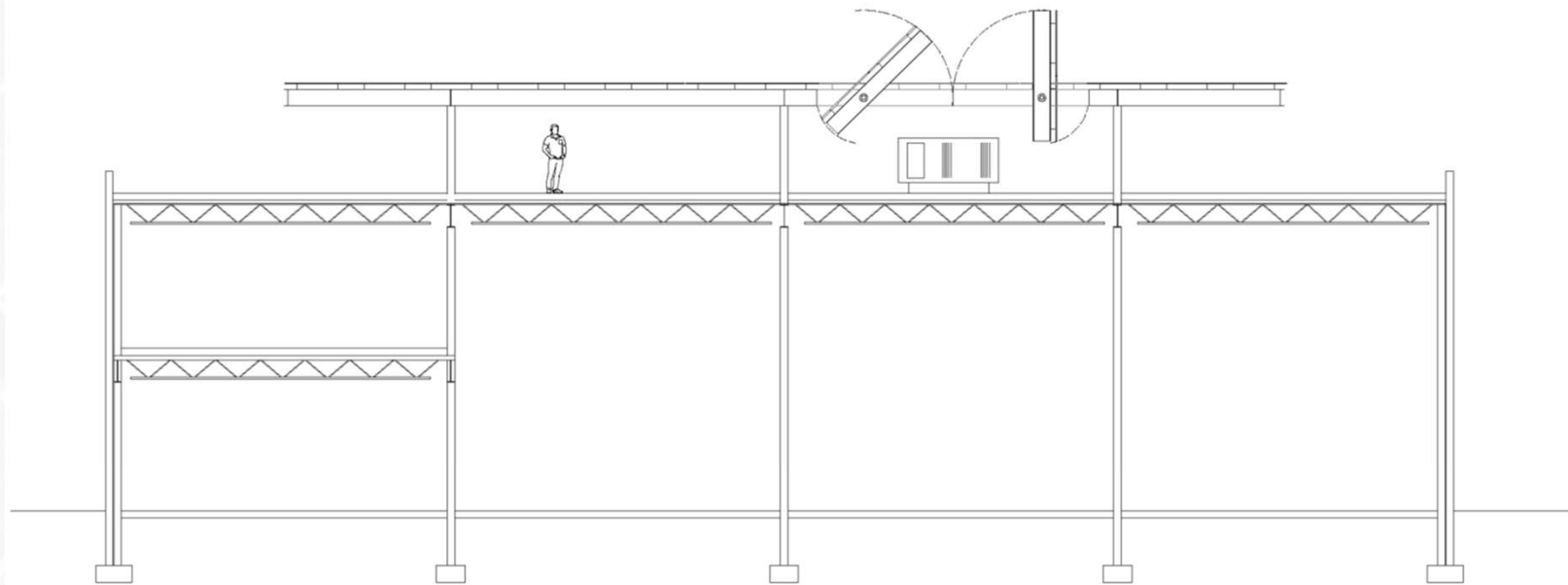
After

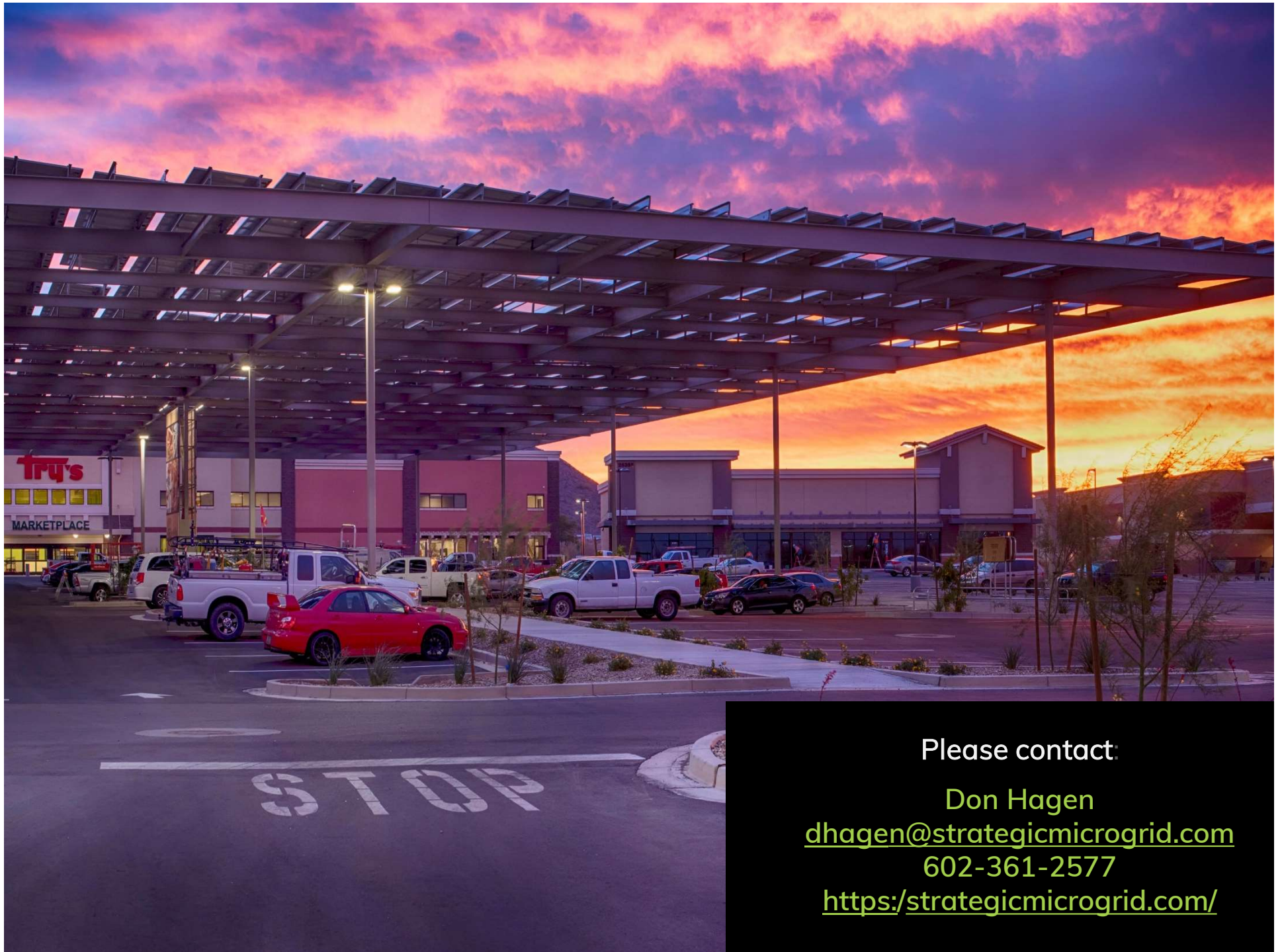


85% Roof Coverage

15 Foot Setback

POWERSHADE[®] ROOF





Please contact:

Don Hagen

dhagen@strategicmicrogrid.com

602-361-2577

<https://strategicmicrogrid.com/>