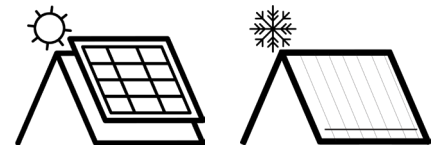




Case Study – The University of Kansas Studio 804

PVKIT® | ColorGard®



At-A-Glance

Project Name

1040 New York Street House

Location

Lawrence, Kansas

Architect & General Contractor

Studio 804

Module Manufacturer

Navitas 550W Bifacial 144 Half Cut Mono
(16)

Inverter Manufacturer

Enphase

Roof Profile

1 ¾" snap-lock standing seam metal roof

Industry

Residential

The Situation

The students had clearly defined sustainability goals and set out to achieve LEED platinum status with a solar PV mounting system that provided a simple, economical and penetration-free method for direct attachment of modules to the roof. They also required a fully engineered snow retention system that would both match the roof and last the life of the roof.

The Result

They chose the low-profile PVKIT solar mounting solution that is warranted for the life of the solar system, has aesthetic appeal and did not damage the roof. ColorGard was custom-designed and engineered for this project to mitigate any potential rooftop avalanches.

Project Stats

Roof Measured: Primary house: 56' x 24' & ADU: 24' x 24'

Roof Pitch: 36.87 degrees

Project Size: 8.8kW

S-5! Products Supplied:

- ColorGard® 8' long sections (24)
- S-5-S™ (112)
- SnoClip™ III (108)
- PVKIT® MidGrab (32); EdgeGrab (38)
- S-5-S™ Mini (70)



The Project

Studio 804 is a hands-on design-build program at the University of Kansas, offering graduate students in their final year of the Master of Architecture program a unique, immersive experience. Established by Professor Dan Rockhill, the program challenges students to design, source materials for, and construct a fully realized building within just nine months—providing a practical foundation for architectural practice.

The 1040 New York Street House marks Studio 804's 18th consecutive project to achieve LEED Platinum certification, underscoring the program's ongoing commitment to sustainable design and construction. Located in the East Lawrence neighborhood – a vibrant, historic area near the Kansas "KAW" River and downtown Lawrence – the home is ideally positioned for walkability and the lively culture of the area. The long-vacant site provided a valuable infill opportunity, allowing the new home to seamlessly integrate into the neighborhood.

The project includes a 2,000-square-foot primary residence and a 1,000-square-foot accessory dwelling unit (ADU), which houses a garage and additional living space. The exterior is clad in white composite metal with a dynamic sheen, paired with a sleek 22-gauge matte black standing seam metal roof.

An 8.8kW rooftop solar array secured with the S-5! **PVKIT®** solar mounting system, is designed to offset most, if not all energy use. Additionally, the entire roof is outfitted with the **ColorGard®** snow retention system, ensuring safety and performance throughout the winter months.

The Challenge

The roof's steep pitch, with the eave reaching 17 feet above ground, presented a significant challenge for transporting materials up to the roof. These logistical difficulties were further exacerbated by supply chain disruptions and extended periods of freezing temperatures.

A solar array was an essential part of the project, required to achieve LEED Platinum certification and to continue Studio 804's mission of promoting sustainability through renewable energy.

Faced with a tight timeline driven by the university's term schedule, they needed a system that could be installed quickly and efficiently using a direct-attachment method on the standing seam roof—all while still meeting the project's high standards for quality and modern design.

Additionally, the roof's steep slope posed a risk of snow slides, making a certified snow retention system essential to protect occupants, pedestrians and property below.

Both systems had to be exceptionally durable, seamlessly integrate with the roof, preserve its integrity without penetration, and remain maintenance-free for the life of the roof.

The Solution

The students chose the PVKIT DirectAttach™ solar solution and the ColorGard snow retention system to achieve their goals.

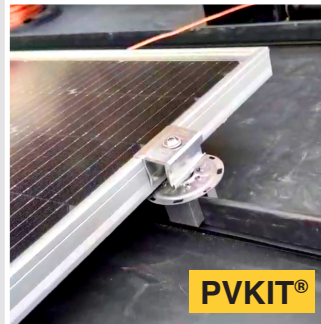
The PVKIT enabled them to complete the project on time by significantly reducing installation time for the rail-less solar PV system, with its pre-assembled components streamlining jobsite logistics, transport and installation on the steep-sloped roof. This low-profile solution allowed Studio 804 to preserve the home's minimalist gable design without any roof penetrations. Additionally, the system helped reduce the home's electricity consumption by about 80%.

To ensure safety and performance during the winter months, they integrated the ColorGard snow retention system. Extensively tested for load-to-failure, ColorGard dramatically reduces the risks associated with rooftop avalanches, offering enhanced safety. Its sleek design also supports the home's architectural vision, creating a clean, continuous datum line along the eaves—seamlessly blending both form and function while preserving the minimalist design intent of Studio 804.



How Did S-5! Products Help?

- Provided an aesthetic solution that met & exceeded the design goals
- Reduced time spent on installation allowing the project to be completed on time
- Snow retention provided safety measures to residents and property below
- PVKIT reduced the amount of hardware required due to S-5! rail-less system
- Eliminated the risk of any potential leaks—no holes/no water penetration



Additional Environmental Features

- Exterior louver shading system & canopy maximize passive heating/cooling strategies
- Mini-split system for heating & cooling interior spaces, and fan coil unit to serve smaller spaces
- Hybrid hot water heater with heat pump technology
- 100% LED lighting throughout
- High insulation R values—Roof R value: 60.961; Wall R value: 39.96
- Low-E windows: U Factor 0.23
- 100% use of native plants & grass
- White siding to reflect sunlight, increasing thermal resistance, reducing energy consumption, providing lower energy costs in the summer

Long-Term Outlook

The S-5! attachments helped Studio 804 to meet its sustainability goals, achieve the desired aesthetic and maintain the roof's integrity, while providing a clean appearance and perfect color- and finish-matching, designed and engineered to last the life of the roof.

"We've always trusted S-5! for its ease of installation and exceptional performance, and this year, that efficiency mattered more than ever. A brutal winter with prolonged snow and ice delayed roof access, but the deadline remained unchanged, with the end of the semester fast approaching. The PVKIT made solar mounting seamless, and ColorGard delivered the snow management we rely on. In just over a day, the install was complete—thanks to S-5!, we finished on time. The installation is so straightforward; it's a great DIY solution for anyone."

—Dan Rockhill, Professor, University of Kansas School of Architecture & Design; Founder, Studio 804



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