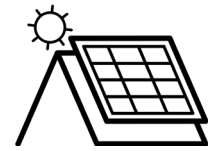




Case Study — Blackrock Camp, Fiji

PVKIT® 2.0 & S-5-K Grip™ Mini Clamp



At-A-Glance

Project Name: Blackrock Camp

Location: Nadi, Fiji

Architect: GHD Pty Ltd.

Engineer of Record: Omar Abdul Wahab

Consulting Engineer: GamCorp Pty Ltd.

General Contractor: CC Pines

Supplier: No 1 Roofing & Building Supplies

Solar Installer: 360 Energy Pte. Ltd. & GreenCo Fiji

Module Manufacturer: LONGI Solar

Inverter Manufacturer: GoodWe

Roofing Contractor: CC Pines

Roof Profile: Lysaght Klip-Lok 406 conceal-fixed metal roof

Industry: Australian Defense

Situation

Blackrock Camp needed a solar PV mounting solution able to withstand extremely high winds and severe tropical cyclones—and one that would meet Australian Military Standards and Clean Energy Counsel guidelines.

Result

CC Pines used the PVKIT and S-5-K Grip Mini clamps, specifically designed for this conceal-fixed metal roof profile, providing a penetration-free, rail-less PV mounting system able to withstand up to 250 plus-kilometer-per hour winds without violating roof integrity or warranties.

Project Stats

- Each Roof Measured: 3m – 8m (height)
- Roof Pitch: 6°
- Project Size: 400kW solar PV on 7 new buildings
- Products Supplied:
 - S-5-K Grip Mini clamp w/ GMX10 inserts (5406)
 - PVKIT EdgeGrab (3100)
 - PVKIT MidGrab 1630)



The Project

Fiji and Australia are working together to deliver infrastructure works for the Republic of Fiji Military Forces.

The Blackrock Peacekeeping and Humanitarian Assistance and Disaster Relief Camp (Blackrock Camp) redevelopment is a significant 17-building project, including a headquarters building, a front entrance area and guardhouse, a logistics precinct (including humanitarian assistance and disaster relief warehouse), lecture/classroom facilities, a rugby field, medical facility, living-in accommodation, physical training facilities, a parade ground, and extensive roads and supporting infrastructure.

The new facilities support Fiji's security and military training requirements and enhance Fiji's ability to respond to natural disasters and other humanitarian crises in the region.

The project features more than 400kW solar photovoltaics (PV) on seven new buildings utilizing the Lysaght KlipLok 406 roof system. The 370W Longi LR4-6HPH-370M solar panels are secured in place using the **PVKIT®** solar solution and the **S-5-K Grip™ Mini** clamps—meeting the Australian Standards and Clean Energy Counsel guidelines for installation of PV systems.

The Challenge

Fiji is located in the South Pacific, over 3,000 kilometres from Australia and comprises 333 islands. It has a warm tropical climate, which makes it a popular tourist destination. It also experiences extreme weather conditions, including high winds and severe tropical cyclones.

One of the major challenges for the general contractor, CC Pines, was to find the right product for the installation of the PV mounting systems due to these extreme weather conditions. The project required an assembly capable of withstanding a 2500-year windstorm, rather than the normal 200-year storm so the camp can be used as shelter in the event of a national disaster.

Furthermore, shipping logistics presented a challenge to this remote island. Transporting traditional rail would be extremely costly and suffer long delivery times.

The Solution

CC Pines chose the PVKIT direct-attach™ solar solution and S-5-K Grip Mini clamps to secure the solar modules in place. The solution was engineered and designed specifically for this unique roof profile and to withstand area hurricanes winds.

With the help of the S-5! team and their extensive testing protocols, No 1 Roofing & Building Supplies and Gamcorp Structural Engineers, the general contractor was able to easily overcome any challenges and obtain certification of the PVKIT for use in meeting these exceptional wind design requirements.

Using this approach to solar mounting also provided a significant decrease in the amount of material required to ship. Rail components for a 400kW job would require a lorry or two to transport, while the same rail-less solution fits in a short-bed pickup truck. This results in up to 70% savings in shipping costs. That savings alone is driving mounting system decisions to rail-less.



“The goal was to minimize logistics by substituting a traditional rail system for mounting PV modules, and the S-5! PVKIT is one of the best-suited products for fulfilling these requirements. The PVKIT is an easy-to-handle and easy-to-install product, saving the logistics team from dealing with large shipments and the site team from spending hours installing a rail system. Another distinct advantage is the S-5-K Grip eliminates the need to puncture the roof for PV installations.”

— Aman Jain, Contract Administrator, CC Pines



How Did the PVKIT Help?

- Reduced cost for materials, material handling and freight
- Reduced cost for installation by eliminating the assembly and installation required by traditional racking
- Minimized the amount of time workers must spend in harnesses on a steep roof
- Improved aesthetics

Long-Term Outlook

Blackrock Camp has supplemented its power generation by adding solar PV to the island's electrical infrastructure.

The PVKIT and S-5-K Grip Mini clamp system provide an aesthetically-pleasing, cost-effective PV mounting solution—saving the customer time and money on installation and materials.



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