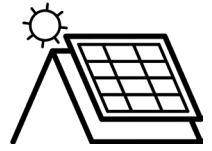




Case Study — The Crown Towers Sydney

S-5-Z™ Clamp | S-5-Z™ Mini



At-A-Glance

Project

The Crown Towers Sydney Luxury Resort

Location

Sydney, Australia

Architect

Wilkinson Eyre

Owner

Barangaroo Delivery Authority

Developer

Lend Lease Corporation

Building and Facades Contractor

Onsite Group Pty. Ltd.

Solar Installer

NuGreen Solutions

Module Manufacturer

Clenergy PV-ezRack® SolarRoof™

S-5! Distributor

MAK Fastener Specialists Ltd.

Roof Profile

KingSpan, KingZip Linea 400 standing seam metal roof

Industry

Hotel/Resort

The Situation

The Crown Towers Sydney wished to discreetly integrate solar into the design of its hotel as part of its greater plan to achieve a 6-Star Green Star rating, representing the world's best practices in sustainability.

The Result

They chose S-5! clamps because they provided the best fit for the seam, allowing maximum solar placement on the rooftops with unsurpassed and certified holding strength to resist the area's design wind speeds.

Project Stats

Roof Info: Aluminium 65 mm (seam height) x 400 mm wide standing seam panels

Roof Pitch: 3 degrees

Solar Project Size: 70kW of solar PV

Total S-5! Products Supplied:

- S-5-Z™ Clamps
- S-5-Z™ Mini clamps



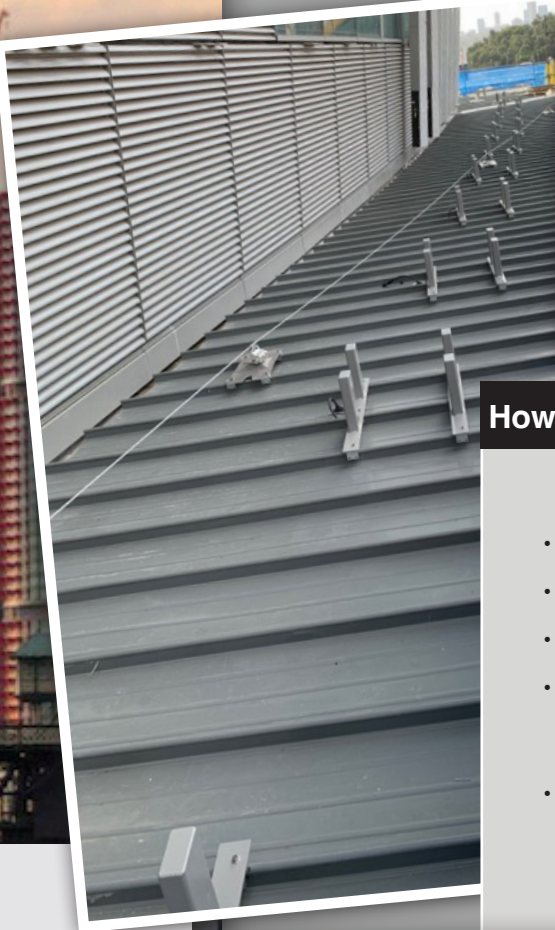
The Project

Rising gracefully above Darling Harbour, Crown Towers Sydney is the city's first luxury resort overlooking one of the world's most enviable views. Located in Barangaroo, Sydney's newest waterfront precinct, Crown Towers stands at 275m high – the tallest hotel and tallest building of any kind in Sydney.

Crown Towers features 349 guest rooms, luxury residential apartments, 14 signature restaurants and bars, premium retail outlets, lavish pool and spa facilities and more. The hotel was designed to be a tribute to Sydney and a landmark recognised worldwide.

Nearly 4 million hours of work took place during the construction phase; more than 237,000 tons of concrete were poured, 20,000 tons of steel reinforcement and steel structure were put in place and 220,000 tons of contaminated material were remediated.

The new 6-star Crown Sydney Luxury Resort features a KingSpan, KingZip standing seam metal roof and S-5! solar attachment solutions to secure 70kW of solar PV on different roof sections. The shadows and curves of the stainless steel exterior reflect light differently as the sun traverses the sky, giving the building's exterior the illusion of changing colours as the day progresses. It is truly a wonder to behold and the gem of the harbour city.



How Did the S-5! Products Help?

- Ease and speed of installation
- Cut material costs
- Cut installation costs
- Fully engineered to resist design wind speeds/pressures at 267m (876') above ground
- Eliminated the risk of a voided roof manufacturer warranty—no holes/no damage

The Challenge

In line with the Crown Hotel Group and its Sustainable Energy Program, the Crown Towers Sydney aimed to achieve Australia's highest 6-star Green Star certification (representing the world's best practices in sustainability) with the extensive use of solar panels, efficient cooling systems, rainwater collection and waste reduction.

The project required discrete integration of solar panels into Crown Sydney's design, located in areas sympathetic to the iconic architecture of the development. Those rooftop areas were narrow and curvy.

Solar installers needed a solution that would allow them to ensure full utilisation of the limited rooftop space for mounting the solar panels, helping the hotel achieve maximum carbon emission reduction as well as lower energy consumption from the grid. They also needed a solution that would withstand high winds due to the location of the skyscraper on the edge of Sydney Harbour.

Long-Term Outlook

The Crown Towers Sydney was able to achieve the quality look they wanted with S-5! solar attachments designed and engineered for the hotel's KingZip standing seam profile—to last the life of the roof.

The Solution

They chose the **S-5-Z Clamp** and the **S-5-Z Mini** clamps (approximately 1,200) to support an aluminum flat plate on 0.9 mm and 0.5 mm thick KingSpan, KingZip Linea aluminium standing seam metal roofs, with on-site renewable energy generation including including 70kW of solar PV.

The S-5! non-penetrating seam clamps are specially developed to fit profiles featuring a round "bulb" seam configuration, and therefore provided the best fit for the seam, allowing for maximum solar placement on the rooftop with unsurpassed and certified holding strength to resist design wind speeds. In this case, the attachment system was designed to withstand a 1000-year windstorm.

The "Z" clamp, designed for heavy-duty applications, features a two-piece design that allows it to be easily installed anywhere along the length of the rib. The "Z Mini," designed for medium-duty, is a bit shorter and has one setscrew rather than two. Typically, the "Z Mini" is chosen as a more economical solution for attaching solar PV and the "Z" aids in fall protection.

With its new solar array and other environmental elements, the Crown Towers Sydney has achieved a 6-Star Green Star Design and As-Built-Rating under the Green Building Council of Australia's certification scheme.



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