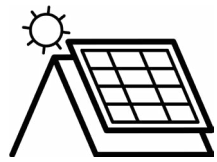




Case Study – North Sydney Olympic Pool Sydney, Australia

S-5-Z™ Mini | GRIPPERFIX® | CanDuit™



At-A-Glance

Location

North Sydney, NSW, Australia

Client

North Sydney Council

General Contractor

Icon Construction

Architect

Brewster Hjorth Architects

Engineer

Mott MacDonald

Solar Installer

Energy Aware

Module Manufacturer

Coolsheet® PVT

Inverter Manufacturer

Fronius

▫ 2 × Fronius Verto
30 inverters

▫ 1 × Fronius Symo
10.0 inverter

▫ 1 × Fronius Symo
15.0 inverter

Roofing Contractor

Loch Garman Roofing

S-5! Distributor Partner

No. 1 Roofing & Building Supplies

Roof Profile

KingZip® standing seam

Industry

Public pool and fitness center

Project Stats

Roof Measures: 800 m²

Roof pitch: 2 degrees

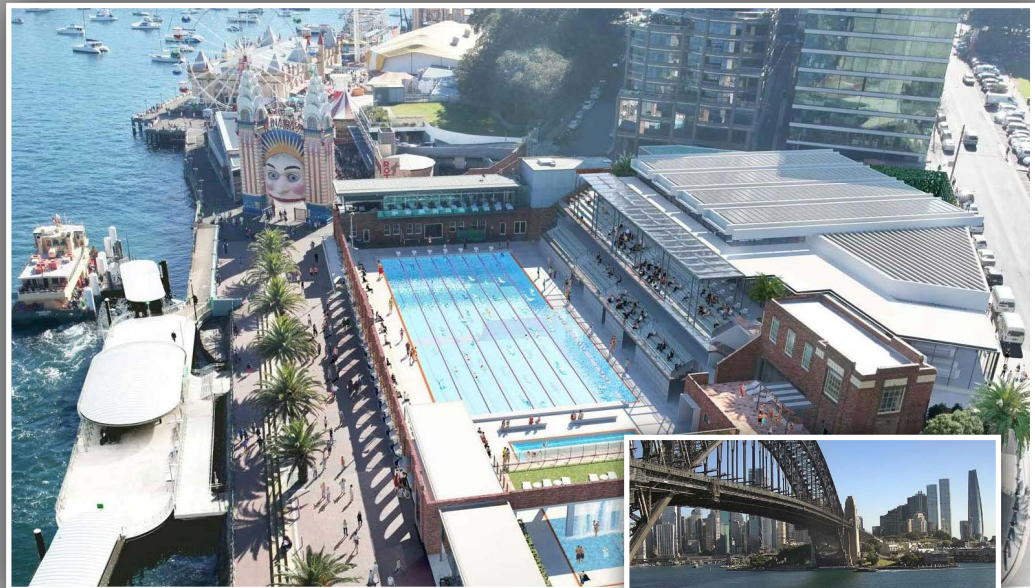
System Size: 114 kW
(206 pcs of 550W modules)

S-5! Products Supplied:

▫ S-5-Z™ Mini clamps

▫ GRIPPERFIX® utility mounting
system

▫ CanDuit™ conduit clamps



The Project

Set along the shores of Sydney Harbour, the North Sydney Olympic Pool is one of Australia's most iconic public venues, with a long history of hosting international swimming competitions. Originally built in 1936, the facility underwent an \$89 million redevelopment to modernise the complex, upgrade amenities and incorporate rooftop solar to support pool heating and day-to-day operations.

The facility features a KingZip® metal roof with distinctive bulb-shaped standing seams. The project team specified the **S-5-Z™** Mini clamp for module fixing, the **GRIPPERFIX®** utility mounting system for balance-of-system (BOS) components and cable containment, and **CanDuit™** clamps to secure and support electrical conduit along the seams.

The commercial-scale installation pairs CoolSheet® solar-thermal collectors with 207 550-watt PV modules, delivering approximately 114 kWe of electrical output— where kWe denotes the kilowatt –electric capacity, or the actual electrical power produced. In contrast to conventional PV systems, Coolsheet also recovers thermal energy, (kWth) from the same roof area, with estimated thermal output two to three times higher than the electrical generation. The ventilated and insulated roof assembly further improves thermal performance by reflecting sunlight and reducing heat absorption.

The Challenge

The pool renovation presented an unusually high-stakes solar challenge. Located within a protected heritage zone, the flagship civic facility required a visually understated system that could withstand coastal salt exposure and strong winds while preserving the integrity of the custom roof and complementing the architectural design.

The roof was fabricated from coated aluminum and featured a distinctive curved profile with 50 mm-high seams. Any penetration, distortion or mechanical damage could compromise its protective and thermal-performance coatings and increase the risk of corrosion or water ingress. Replacement was not a practical option because of color-matching challenges and long fabrication lead times.

The system therefore had to provide secure, non-penetrating fixing, maintain watertight performance and remain within the tight load limitations of the lightweight roof assembly. The panel layout also needed to accommodate a 3-meter-wide ridge vent and multiple mechanical service penetrations while satisfying the structural demands of a Category 5 cyclone-rated zone.



The thermal circuit introduced additional support requirements. Its piping needed a secure, orderly path across the standing seam roof without damaging the seams, creating potential leak points or obstructing drainage. The support system also had to accommodate pipe weight, operational loads, wind exposure and thermal movement while maintaining alignment and access for inspection and maintenance.

Engineers, solar designers, installers and the roof manufacturer collaborated on a new assembly detail integrating the CoolSheet system with the roof profile. The design had to meet Australian requirements for wind loading, thermal expansion and component spacing while working within limited rooftop and routing space.

The Solution

Long-time S-5! distribution partner, No.1 Roofing & Building Supplies, recommended the complete fixing system beginning with the S-5-Z Mini clamp for its compatibility with the roof's bulb-shaped standing seams. The clamp's narrow body and tested mechanical engagement provided a secure, non-penetrating interface for the solar mounting hardware without distorting the seams or compromising roof integrity. The clamps were installed in a spacing pattern tailored to meet structural loading and uplift requirements verified by an engineer.

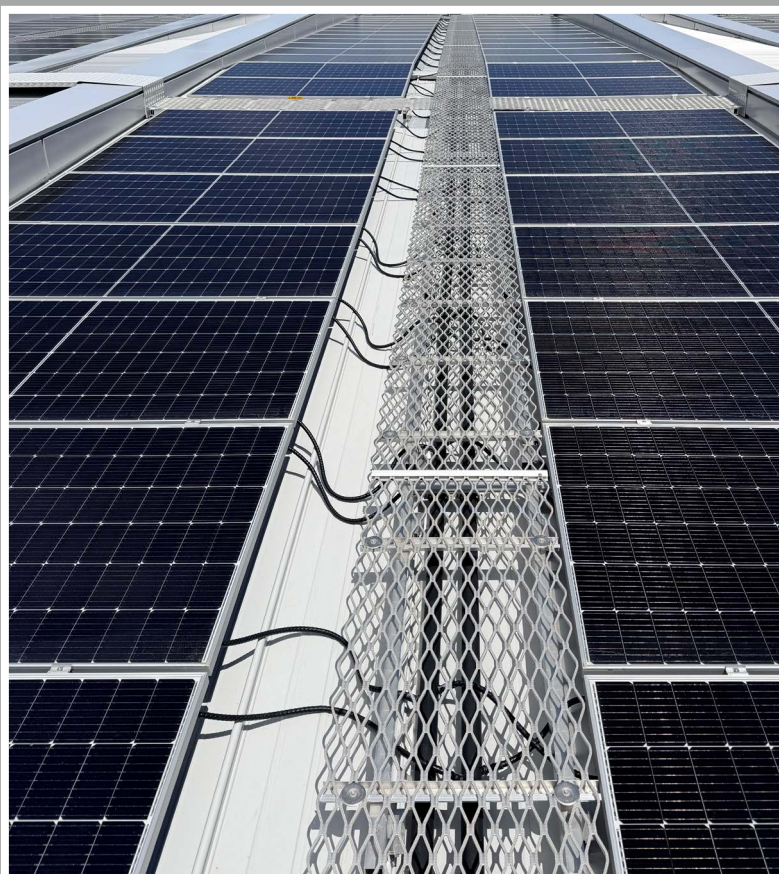
GripperFix provided adjustable strut channels that distributed loads across multiple seams and created a support platform above the drainage plane. CanDuit clamps supplied correctly sized, EPDM-lined restraint for round pipework, helping reduce abrasion and corrosion risks, and could be oriented parallel, perpendicular or at an angle to the seams. Together, the components created an organised, adaptable framework for grouping and routing multiple pipes while minimising stress on the roof.

The modular system could be configured around the roof's curved geometry, ridge vent and service penetrations while maintaining clear drainage paths and access for inspection and maintenance. It also supported BOS equipment, electrical conduit and thermal pipework without creating concentrated stress points.

The adjustable components simplified field layout and eliminated the drilling, flashing and site-applied weatherproofing required at conventional support points. With support from S-5!'s technical team, the installer carefully staged the work to minimise handling risks and maintain consistent alignment. The result was a clean, code-compliant installation that appeared as a natural extension of the building envelope and was engineered for long-term performance.

How Did the S-5! Products Help?

- Enabled secure, non-penetrating fixing to curved roof
- Reduced installation time and material handling
- Distributed loads across multiple seams without creating concentrated stress points
- Supported organised routing of thermal pipework, conduit and BOS equipment
- Preserved drainage paths and access for inspection and maintenance
- Reduced drilling, flashing, sealing and other site-applied weatherproofing steps
- Minimised abrasion, corrosion and damage to the roof system



Long-Term Outlook

The North Sydney Olympic Pool demonstrates how photovoltaic and solar-thermal technologies, along with supporting equipment, can be integrated into complex public infrastructure without compromising the roof system.

“S-5! gave us a practical, integrated solution for organising and supporting the CoolSheet® thermal pipework without penetrating the standing seam metal roof. The system was adjustable, straightforward to install and respectful of the roof design. It is an approach we would consider again for similar metal-roof projects.”

— Tom Hoole, founder and director of CoolSheetutions



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