

Protected by



Police Citizens Youth Club, Dee Why, Sydney



The Project

The KingZip Linea system from Kingspan Insulated Panels has been used to create a single curved, tapered surface encompassing both roof and walls, that envelops a striking new community building on the Northern Beaches of Sydney.

The KingZip roof system was used to realise the architectural concept to form an organic cloud-like form, spanning over and around the key functions of the new Police Citizens Youth Club in Dee Why. The centre houses two basketball courts, meeting rooms, café and administrative offices, and car parking. The roof height, which varies by up to five metres, reflects the different internal uses.

Completed in 2017 following two years in development, it is a distinctive, sustainable and innovative architectural landmark, and a standing testament to the versatility of the KingZip Linea system.

Sector	Public Buildings
Location	Dee Why, Sydney
Architect	FJMT
Builder	Prime Constructions
Product	KingZip Linea Architectural Roofing System



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John Perry, Associate Principal, FJMT.



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Damian Campanella, Senior Architect, FJMT.

Damian Campanella, Senior Architect at FJMT studio explained that the building sits alongside an existing apartment block, as well as “some beautiful examples of significant civic architecture” in the local council chambers and library.

He described the complex curved geometry as “a way to continue that legacy, to pay tribute to the civic buildings with an appropriate gesture while reducing the impact on neighbours’ outlook and sun access”.

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“It is a shape that we were able to manipulate to accommodate certain requirements from outside and suit the interior program,” explained Campanella.

The KingZip system was the solution that could accommodate the numerous design challenges.

“When you analyse it, it is not a rational shape. The geometry of the building is quite special. The curved portal frame shape starts as a wall, becomes the roof and goes back down the other side and becomes a wall again, so it’s all one structure. The portal frame shapes are the ribs at the centre of the building. It is parallel-sided then twists and tapers, and there is also a fall on the roof,” explained John Perry, Associate Principal at FJMT.

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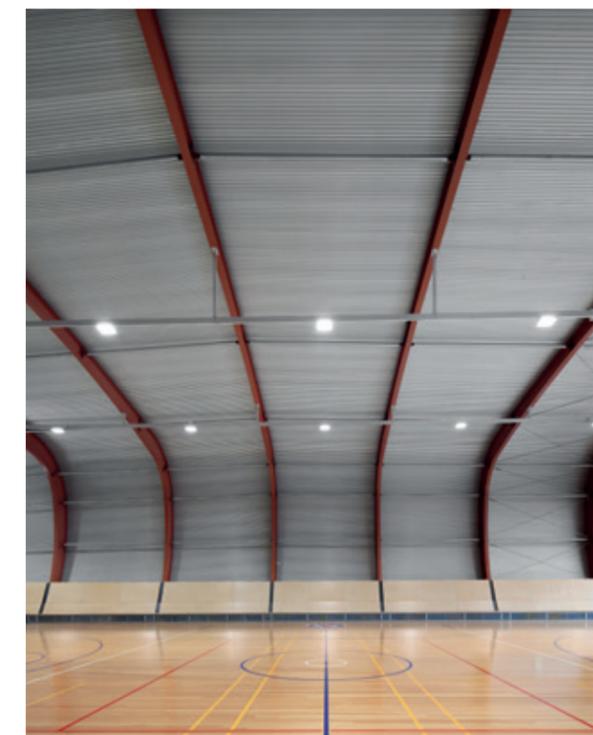
Project architect Campanella said this enabled FJMT to realise their design. “KingZip allowed us to get a complex form by the most economically available means, but also in a way that was able to be subtly manipulated to achieve that form.”

It also delivered performance advantages. “You can use it with very low falls on the roof of 1.5° for drainage, and use them in very long spans, and that’s very valuable when transitioning from roof to walls, in the sense that it works. It provides reliable waterproofing. You avoid discontinuities in the surface and interfaces, which is a lower risk approach.”

This project was the first time that FJMT had used the KingZip system. Since then it has been used on other projects.

Kingspan offers a full service which includes design and calculations, shop drawings, installation training and onsite training. The support of Kingspan’s local team helped FJMT make the initial decision to use the KingZip system, and supported them throughout the project.

“I really can’t fault the design team and the technical support was excellent. Working with them from the start we came up with a product and design solution very quickly. Throughout the project they were very informative, with good product knowledge, and support materials,” commented Perry.



“When I look at the building I am still surprised by the shape and angles, and the tapering we were able to achieve.”

John Perry, Associate Principal, FJMT.

The Kingspan Insulated Panels team, led by Niall Horgan, general manager KingZip and BENCHMARK, worked closely with all the various parties involved in the project, from design conception in 2013 through to completion in 2017.

“We were able to walk through the entire process from conception to completion, by understanding their intent, then recommending the product, and providing the technical documentation and support to explain what the system can do, and how to use it to best effect,” said Horgan

“This was a really interesting project to work on. The single element curved walls and roof is unusual and certainly out of the box. It stands out from the crowd and really shows off the versatility of the KingZip system.”

Paul Christopher, managing director of Prime Constructions, the builders said, “The KingZip system was a challenge that required us to think beyond the capabilities of conventional roofing. It was without doubt the right product as it was the only system that would work on this very unique structure and cope with the complexity around the geometry of the structure.

“Getting a seamless finish across the roof, over the shoulders and down the side of the building was the challenge, but once we got the substructure right the product performed very well, and the patina and finish with the tapered panels and guttering has achieved what is a signature building.”

“We are very proud to be associated with this building,” he said.

The support from Kingspan’s local team was vital to the success of the project. John Perry of FJMT said the detailed product knowledge shared by the Kingspan team helped them achieve their vision for the building.

“If a client or designer doesn’t understand the product and how to use it, they simply won’t get the desired outcome, and we were very pleased with the outcome in this project. The material selection gave us an opportunity which we successfully exploited to realise what we were trying to achieve.”

Builder Paul Christopher, said that the technical and practical support was also evident in the build process:

“Kingspan’s project manager, Steve Herron, was practical and knowledgeable, and the team from designers, supply and installers worked together to deliver the project.



“It’s our view that with a project such as this you have to have a collaborative approach. A big part of the success of delivering a building of this complexity is collaboration between the designers, builders, suppliers and sub-contractors,” he explained. “I would definitely work with Kingspan again.”

KingZip is made to design on site using Kingspan Insulated Panels ‘mobile roll-former’. Housed in a modified shipping container, the roll-former takes a coil of material and manufactures parallel and tapered sheets to match the design. A secondary process is used to form curved sheets. Once prepared, each sheet can then be put straight into position.

“It minimises transportable damage. All the equipment arrives in a 40 foot container. It’s like having a mini factory on site and it is all formed to your exact specifications,” said Perry.

The final outcome exceeded his expectations. “When I look at the building I am still surprised by the shape and angles, and the tapering we were able to achieve,” commented Perry.

“This is a lasting, exciting and affordable vision for the multipurpose community facility and car park. It is an open, flexible and inviting building that can capture the imagination of all the community, a building for which they can feel ownership and pride.”

The Northern Beaches PCYC has been entered into the 2018 Australian Institute of Architects’ National Architecture Awards - NSW Chapter.



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