

CASE STUDY: WINGARU, ST IGNATIUS COLLEGE RIVERVIEW, SYDNEY, NSW

Architect: PMDL Architecture + Design **Acoustic Engineer:** PKA Acoustic Consulting

Builder: Belmadar **Partition, Ceiling and Cladding Contractor:** Goal Interior

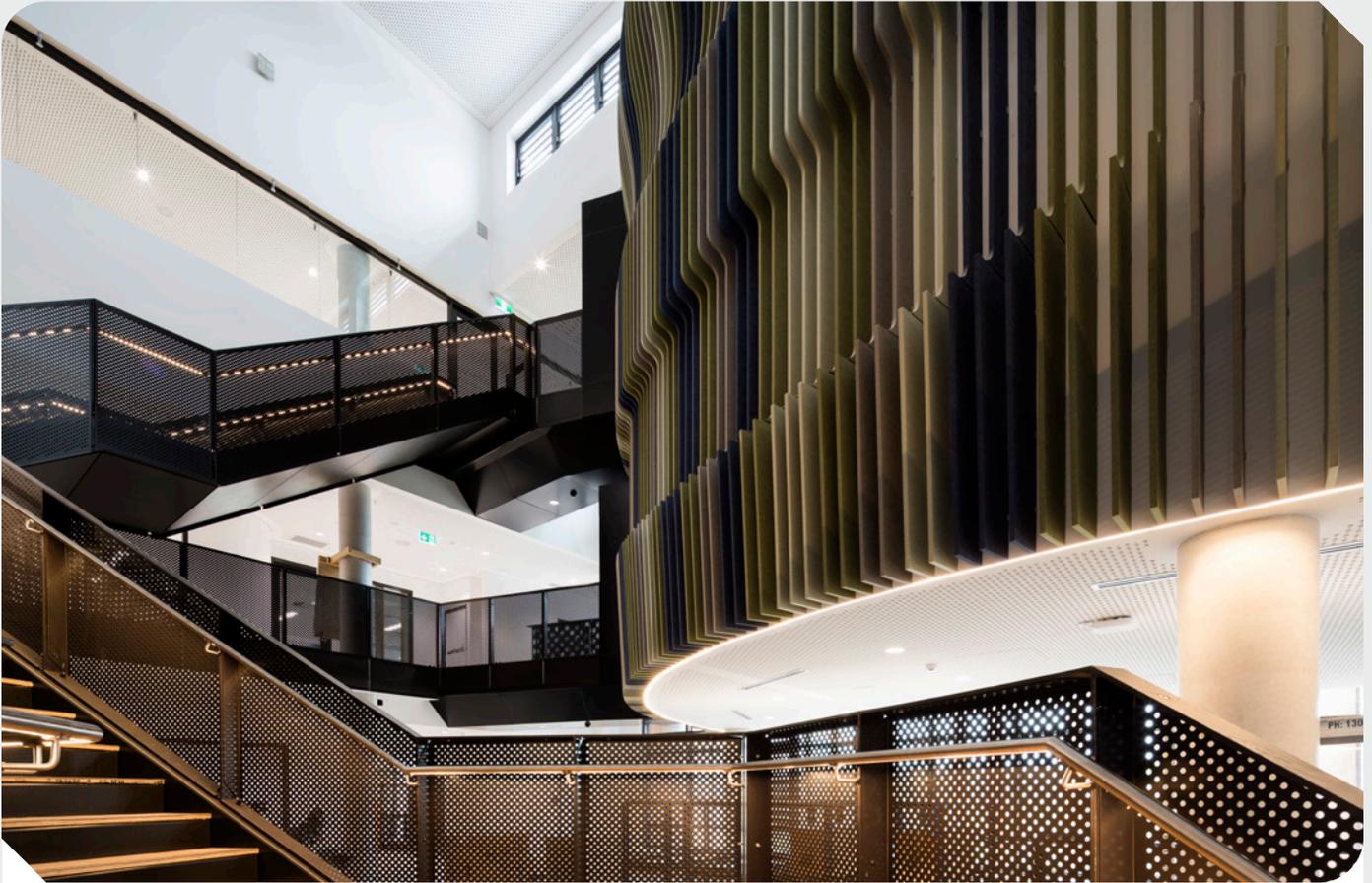
Product Details:

- Ecophon Focus™ A Acoustic Ceiling Tiles
- Rondo DUO® 24mm Exposed Ceiling Grid
- Woven Image EchoPanel® 24mm Custom Acoustic Baffles
- Woven Image EchoPanel® 12mm
- Himmel Aluminium Skirting
- Rondo MAXIframe® System with 92mm and 150mm Steel Studs, Slotted Deflection Head Tracks and Top Hats

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Background

At Saint Ignatius' College in Riverview, Sydney, the tradition of holistic education advances with the arrival of the Wingaru building, a state-of-the-art facility designed to foster excellence in Science, Technology, Engineering, Mathematics and PDHPE. Heralding the next phase of the College's master plan, the structure embodies a deep commitment to nurturing academic excellence alongside student well-being and Ignatian values, creating an inclusive and culturally resonant environment for the next generation of global citizens.

Central to the project's identity is its deep respect for the site's Indigenous heritage. Designed by PMDL following extensive consultations with First Nations Elders, Wingaru – a name meaning 'to think' in the local Cammeraygal language – honours the site's foundational First Nations context, weaving this ethos throughout the design to foster discernment, discovery and deep reflection.

Architecturally, the building is organised around a soaring, three-storey central atrium that serves as its vibrant heart. The welcoming hub connects world-class learning environments – including thirteen new science classrooms and technology workshops – with spaces dedicated to community and pastoral care, such as student 'Houses', a Learning Enrichment area and the dedicated First Nations cultural space.

Challenge

Ensuring an optimal acoustic environment conducive to learning, connection and interaction across a diverse range of spaces became essential to bringing this educational vision to life.

As primary spaces that would deliver the learning experience, all classrooms and laboratories demanded high levels of acoustic control to ensure speech intelligibility and support student concentration and productivity. This required a high-performance ceiling system capable of managing sound reverberation – especially in labs, which often feature hard surfaces – and minimising background noise to reduce distractions and create comfortable spaces that nurture focus, interaction and academic performance, while prioritising both student and staff well-being.

On top of these acoustic requirements, the building's central design feature posed a more complex challenge. "The main atrium is a large volume, and internally connects the three levels," the Acoustic Engineer behind the project, Daniel Firth of PKA Acoustic Consulting, explains. In addition, the high-level clerestory windows, designed for natural ventilation, posed a risk of outdoor noise intrusion. "Acoustically, we wanted to ensure that this large volume had a controlled reverberation time and to mitigate the impact from potential external noise intrusion to occupied spaces below via the atrium," Daniel states. "It was critical to ensure we created an acoustically controlled gathering space."

This acoustic challenge was exacerbated by the design evolution of the central learning pod, a space inspired by the First Nations concept of the campfire as a powerful cultural symbol and teaching tool. Positioned in the void at the heart of the building plan, as Vicki van Dijk, PMDL's Practice Director – Managing Partner, explains, the pod became a natural point of orientation, embodying the idea of a shared centre where people come together. "Much like the campfire," Vicki explains, "it symbolises a place of connection – between disciplines, between students and teachers, and between past, present, and future ways of knowing."





Initially conceived as a transparent element, the design was masterfully reinterpreted to address the client's desire to create a more contained and less distracting environment for students. "This shift transformed the pod into a more solid object within the atrium void, demanding a treatment that would provide both visual impact and sculptural presence," she adds.

As the design evolved, the atrium's hard surfaces posed significant reverberation challenges, and the pod emerged as an opportunity for acoustic mitigation. This presented a multi-faceted challenge – it became essential to select products that would deliver acoustic absorption and control reverberation, provide aesthetic flexibility to realise the pod's intended sculptural expression and reflect the project's overarching commitment to sustainable design.

Beyond the delicate balance of the interior acoustics, the building's exterior faced rigorous structural demands. The project required external wall systems capable of withstanding high wind pressures and accommodating tall wall heights – specifically the 5.5m roof plant wall – demanding a framing solution that was structurally robust and fully compliant with Australian standards for wind and seismic loads.



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Solution

As part of a meticulously specified building solution to achieve the desired acoustic requirements, the project team integrated a selection of CSR products, ranging from acoustic glasswool ceiling tiles to custom acoustic baffles.

Ken Cai of Goal Interior, the partition, ceiling and cladding contractor, who oversaw this ambitious program as the Project Manager, explains that the Ecophon Focus™ A Acoustic Ceiling Tiles were selected for all classrooms and laboratory ceilings to address acoustic requirements. With their high NRC of 0.85 and a CAC of 21, these glasswool ceiling tiles are engineered to effectively absorb unwanted noise and reduce background distractions in busy educational spaces, creating a more controlled and comfortable listening environment conducive to clear communication, focus and learning outcomes.

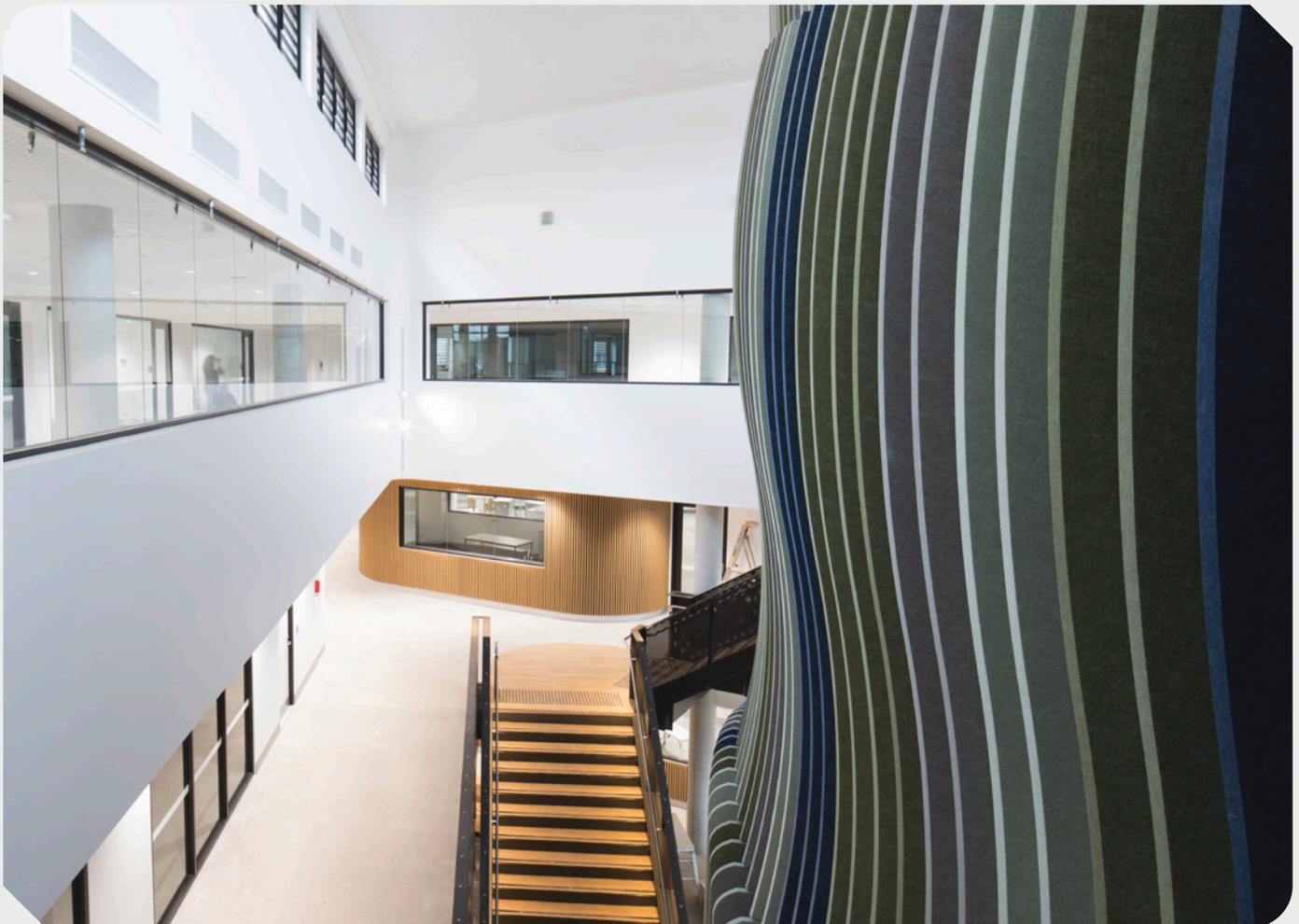
Installed using the Rondo DUO® 24mm Exposed Ceiling Grid, the Ecophon Focus™ A Acoustic Ceiling Tiles are easy to put up and demount if access to wiring or ductwork above the ceiling is required, ensuring future-forward flexibility and ease of maintenance. In addition, their solid composition and clean, structured aesthetic are bound to ensure durability and visual relevance for years to come. Complementing this classic ceiling tile profile, the team also specified EchoPanel® 12mm from Woven Image, a lightweight, customisable solution that combines excellent acoustic performance with visual appeal and a comprehensive colour palette. This versatile profile, suitable for multiple applications, was integrated into the general learning area and both the interview and consultation rooms.

However, it’s the buildings central pod where the capabilities of EchoPanel® became particularly crucial. Here, the EchoPanel® 24mm Custom Acoustic Baffles – offering the highest sound absorption properties in this Woven Image range – helped create the sculptural impact the architects sought, while further addressing the project’s challenging acoustic requirements.

“The baffles, selected from a standard range of colours and custom profiles, were vertically arrayed to form a continuous wave-like surface, lending the pod a dynamic and fluid expression,” Vicki explains. “Their acoustic properties successfully reduced reverberation within the space, while their rhythmic form heightened the pod’s identity as a central gathering point. To reinforce its visual and cultural resonance, a palette of earthy tones was applied across the baffles, woven into the swirling pattern to evoke a sense of warmth, movement, and connection.”

Daniel explains that the EchoPanel® 24mm Custom Acoustic Baffles were used to ‘clad’ the convex, hemispherical surface of the classrooms facing the atrium, working in tandem with perforated board on the upper ceiling and in circulation spaces. This combination, he notes, provided further reverberation control and close-proximity acoustic absorption to the high-level natural ventilation louvres.

While these solutions managed the internal environment, the project required an equally capable solution for the building’s envelope. To address the high-wind pressure requirements, the Rondo MAXIframe® System was specified as the primary external wall framing solution, with a combination of 92mm and 150mm steel studs, including back-to-back configurations, selected based on specific wall heights and pressure zones. The integration of Slotted Deflection Head Tracks allowed for necessary vertical movement due to structural deflection, while horizontal and vertical Top Hats ensured even distribution of wind loads across the façade.





Strong environmental credentials further enhanced the performance of the acoustic solutions and has played a role in achieving the project's sustainability goals. The Ecophon Focus™ A Acoustic Ceiling Tiles are made from over 50% post-consumer waste and are fully recyclable at the end of their life. EchoPanel® 12mm is manufactured from 80% post-consumer recycled PET, while EchoPanel® 24mm contains 60% post-consumer recycled PET, with all material fully recyclable. EchoPanel® is Climate Active certified as carbon neutral, carries the highest Global GreenTag™ rating (GreenRate Level A), holds a Platinum Product Health Declaration, is Red List Free, and provides full ingredient transparency through Declare.

Underscoring this comprehensive offering was the ease of installation and, as Ken adds, CSR's reliable support teams. "The products were straightforward to work with and well-supported by CSR's technical guidance," he explains. "And even though the feature EchoPanel® baffles are quite complex, the design and shop drawing provided by Woven Image made the installation much easier."

Summing up the quality of this collaboration, Ken affirms that his experience working with CSR was overwhelmingly positive. "Their team provided strong support throughout the process, and we are very pleased with the final results," he concludes.