St Georges River Sailing Club

Feature Ceiling & Acoustic Door Panels

Illawarra Catholic Club Limited | client
Loucas Architects, Sydney | architect
Empire Project Management | project manager
Wynn Construction Group | main contractor
BJM Projects / Dormikaba | installer

Project Overview

The St Georges River Sailing Club dining room in Sydney underwent a sophisticated transformation, incorporating seven supersized feature ceiling panels and 24 acoustic door panels as part of a bespoke operable wall system.

This project required meticulous planning, engineering, and installation to achieve an aesthetic yet highly functional outcome that met the architect’s exacting requirements.

Design & Material Specifications

Feature Ceiling Panels

The seven ceiling panels varied in overall dimensions, with each screen composed of six to eight smaller modular and bespoke panels. To maintain consistency in design, engineered bamboo was selected for its durability, sustainability, and refined appearance. The panels were enhanced with rattan compact weave inserts (Ref. CW-161), adding warmth and texture to the space.

Material Composition: Engineered bamboo framing with rattan compact weave infill (CW-161)

Edge Detailing: Standardised perimeter engineered bamboo edge profile with a 1mm chamfer to all edges

Construction: Each screen comprised modular engineered bamboo framed panels with rattan infill

Total Project Weight: 244 kg (185 kg engineered bamboo, 59 kg rattan)

Total Length of Engineered Bamboo Parts: 340 m

Ceiling Suspension System: Metal rod suspension system similar to the Rhondo ‘Key Lock’ system to achieve a floating effect

Design & Material Specifications

Acoustic Door Panels

The 24 acoustic door panels were manufactured as part of a bespoke Dormakaba system. The design required a combination of aesthetics and acoustic performance to seamlessly integrate with the overall architectural vision.

Material Composition: Rattan infill fixed over ‘Autex Acoustic Board’ up to mid-rail height

Frame: Engineered bamboo framing, mechanically fixed to the operable wall system

Functionality: Acoustic performance and aesthetic integration with ceiling panels

Architectural Requirements & Custom Engineering

The architect’s brief required the ceiling screens to be fully demountable to allow future maintenance access to the obscured ductwork above.

Specialised fixing details and an adaptable installation methodology were developed to accommodate this requirement. House of Bamboo’s design team collaborated closely with the site team to ensure seamless integration of the panels while maintaining easy access for maintenance.

Coordination & Execution

The House of Bamboo team worked in close coordination with Lucas Architects, the on-site team, and Dormakaba to ensure the smooth execution of the project. Key areas of focus included:

Weight Management:

Precise calculations to ensure the engineered bamboo panels and rattan infills were lightweight yet structurally sound.

Material Optimisation:

House of Bamboo proposed revised ceiling panel dimensions to maximise the economic use of engineered bamboo, reducing material waste and overall weight.

Fixing Details:

Custom fixing details were developed to securely install the demountable ceiling panels while maintaining a clean, floating aesthetic.

Lighting Integration:

A last-minute revision by the architects called for an integrated 19mm-wide LED strip lighting detail within the ceiling panels. This change was seamlessly accommodated with minimal impact on the manufacturing timeline.

Ventilation Considerations:

The percentage of open space within the rattan weave was calculated to assist the mechanical engineers in determining airflow efficiency.

Site Communication:

Regular updates were provided to the site team, ensuring product delivery and installation milestones were met on time and within budget.

Project Outcome & Impact

The successful delivery of this project exemplifies the synergy between architectural vision, material innovation, and precise execution. The use of engineered bamboo and rattan not only enhanced the aesthetic appeal of the space but also contributed to its acoustic functionality.

The ability to integrate late-stage design modifications while maintaining project timelines and budget underscores House of Bamboo's expertise in delivering high-quality architectural solutions.

The St Georges River Sailing Club dining space now boasts a visually striking and acoustically efficient ceiling and wall system, showcasing the potential of sustainable bamboo-based materials in contemporary architecture.

Design and Manufacturing Challenges

To ensure a flawless installation, Screen D was selected as a prototype for testing installation methods and finishes (refer to House of Bamboo design drawing A104). Key challenges included:

Curved Frame Precision:

The radius of the outer frame curves required specialised attention to ensure a perfect fit. Factory assembly of modular parts allowed for a ‘test fit’ before site delivery.

Pre-Installation Coordination:

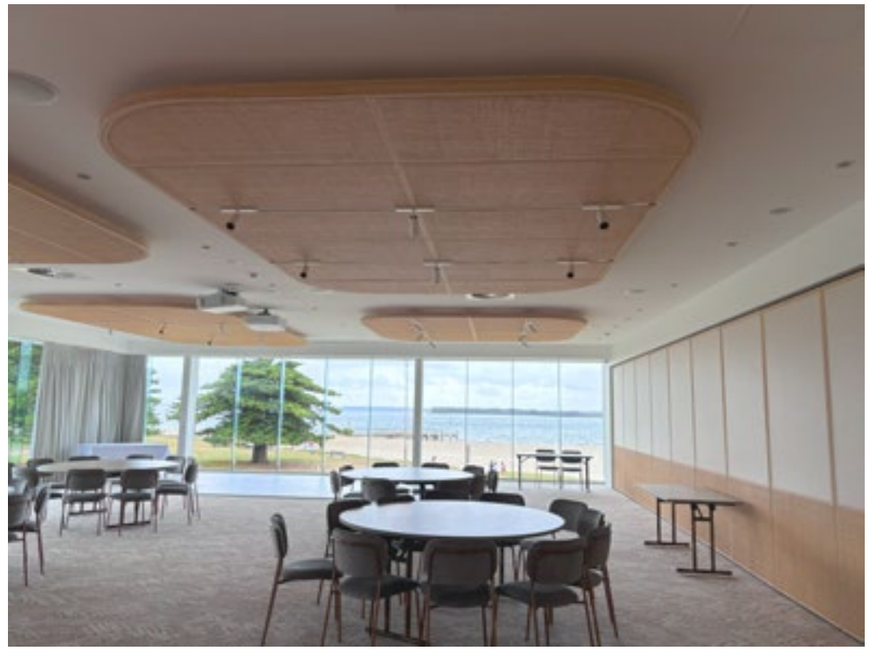
All modular components were meticulously numbered and delivered with corresponding layout plans, enabling efficient and accurate site assembly.

Last-Minute Design Adaptations:

The integration of track lighting close to the manufacturing phase required agile coordination with production teams to accommodate the change without delay.

Suspension System Engineering:

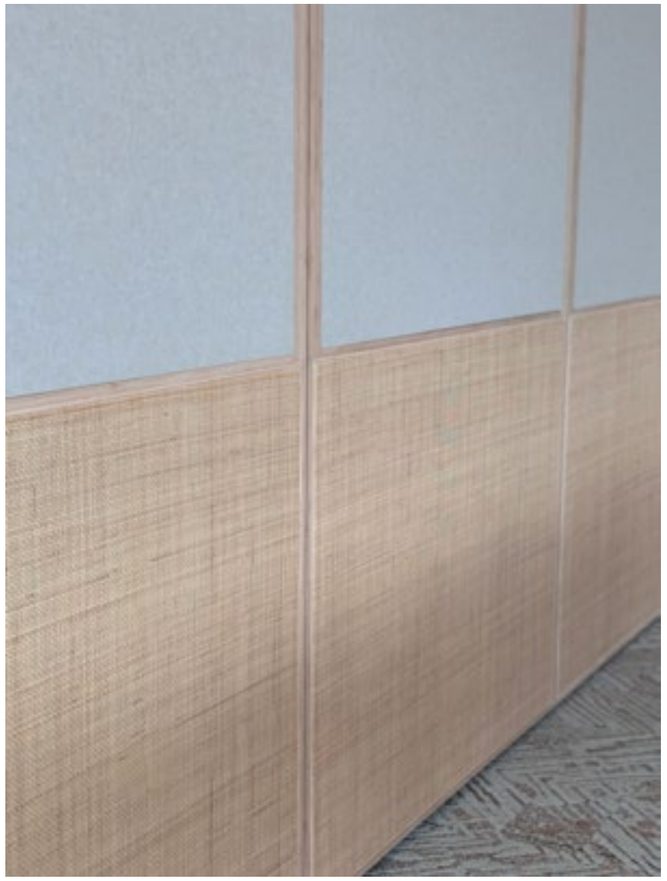
Achieving the ‘floating’ effect for the ceiling screens involved designing a robust yet unobtrusive metal rod suspension system to maintain the visual integrity of the space.

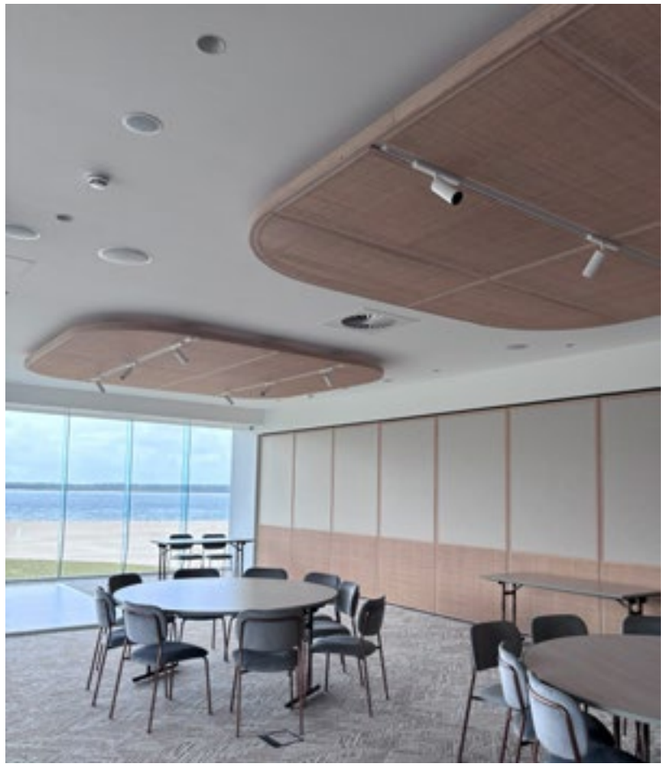


Innovations, Solutions and Project Impact

Manufacturing & Production Software:

The project utilised 3 dimensional BIM Software to model the complex geometry to ensure an exact match with LUCAS Architects general arrangement designs and reflected ceiling plans. Utilising BIM to help preempt any construction issues that may arise prior to installation to ensure any issues are eliminated.

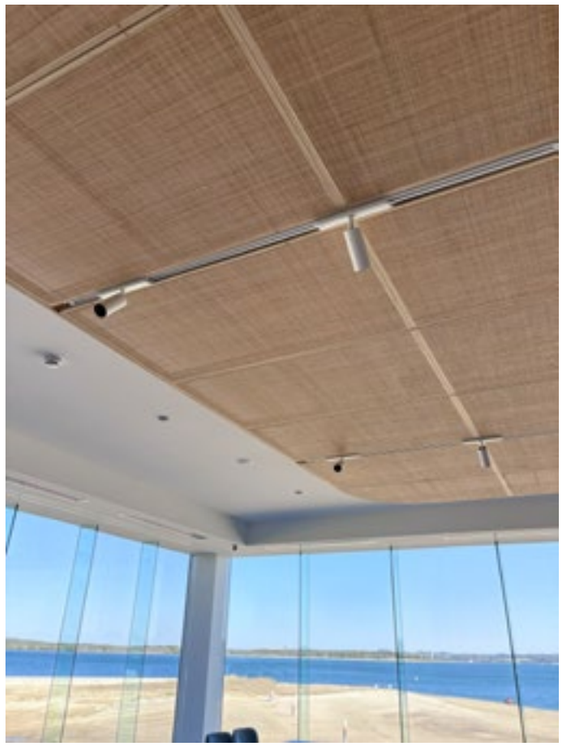


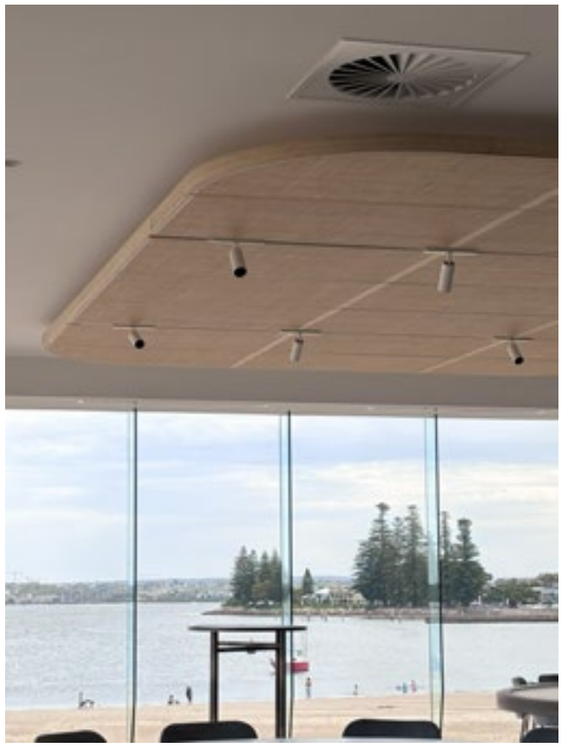


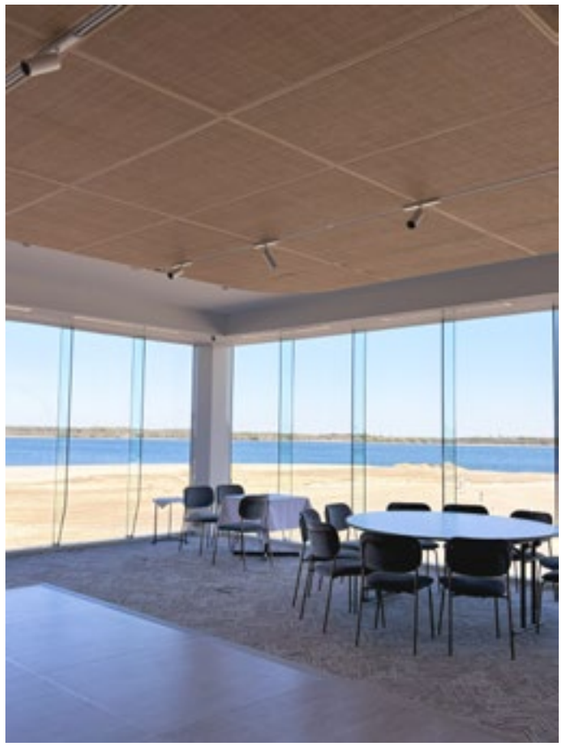
Innovations and Solutions

A building material alternative with reduced embodied carbon:

Embodied Carbon (kg Co2/1 cubic metre of material) Comparison			
Cross Laminated Bamboo (Engineered)		**Average Timber (Inc Eucalyptus)**	
Unit	**Embodied Carbon** (kg Co2/1 cubic metre.)	**Unit**	**Embodied Carbon** (kg Co2/1 cubic metre.)
1m3	307.00 kg CO2	1m3	417.00 kg CO2
Note: Average A1 to B3 & C1 to D embodied carbon factors		**Note:** Average A1 to D embodied carbon factors	
Source: https://www.moso-bamboo.com/wp-content/uploads/20170315_EPD_INT_Moso_Solid_EN.pdf		**Source:**https://www.sciencedirect.com/science/article/abs/pii/S0360132322001871	







Conclusion

The engineered bamboo feature ceiling at Georges River Sailing Club exemplifies House of Bamboo's expertise in merging sustainability with innovative interior design solutions.

By overcoming significant installation and services coordination challenges, the team delivered a product that is both visually striking and environmentally responsible.

house of bamboo

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