GHD Auditorium Advanced Engineering Building

The AEB has achieved a 5 star Green Star – Education Design v2 certified rating from the Green Building Council of Australia (GBCA).

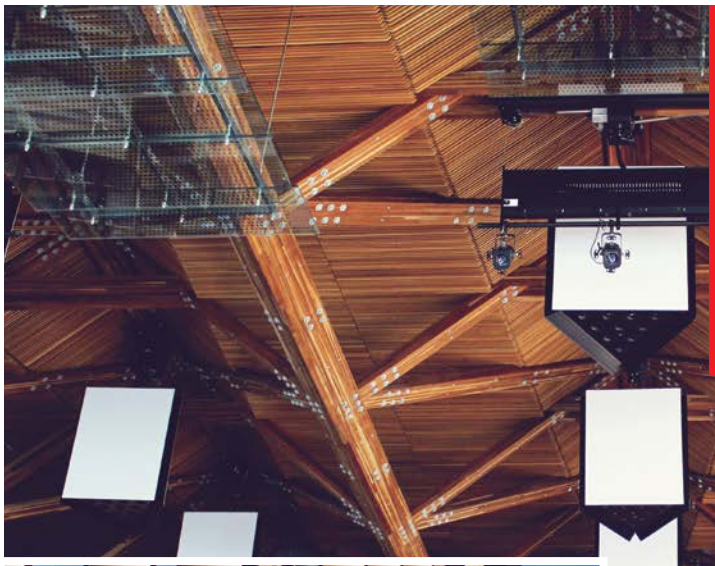
Designed by Richard Kirk Architects, in partnership with Hassell, the $130 million, 5 Green Star rated Advanced Engineering Building (AEB) project is a demonstration of Australian excellence in environmental architecture.

As our cars, phones, computers, and digital devices are getting smarter, so too should our buildings - that was the motivation for Richard Kirk Architects. With a focus on the natural environment, ecology and sustainability, the goal was to create a living building. As systems monitor building performance and data is collected for students, teachers and industry; the dedicated space gives opportunity to develop and real-time test new ideas, and trial these directly with the people it impacts.

Along with measuring and dramatically reducing energy consumption the AEB also needed to meet the interactive needs of the ever evolving engineering faculty. The AEB houses a state-of-the-art 500 seat auditorium, one of the largest teaching spaces in the University.

The decision to construct the auditorium entirely out of timber was not only rooted in the aesthetic interaction between the natural environment, but also the structural functionality and environmental impact of the building. The auditorium's 215-tonne roof is supported entirely by impressive timber members that span the entire 30-metre-wide space - an engineering feat that is habitually achieved using steel.

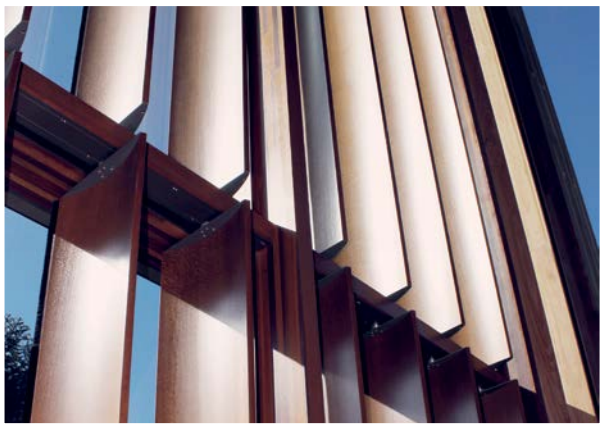
The space is held by four pairs of 30m long timber trusses forming a series of dramatic zinc-profiled vaults. The prefabricated timber trusses, all locally harvested, milled and engineered in Queensland, consist of glue laminated hardwood flitch sections with a structural steel plate sandwiched in-between.



A Collaborative Project Funded By Federal & State Governments

The Advanced Engineering Building at St Lucia is a collaborative project funded by the Australian Government, Queensland Government, and The University of Queensland, with philanthropic support from GHD.

Architects: Richard Kirk Architects, Hassell. Builder: WATPAC Construction Pty Ltd. Engineer: Aurecon.



The trusses were fabricated offsite, transported, assembled in place and lifted in a single day. Hyne Timber ensured trusses were designed and engineered to custom fabrication specs. Our dedicated manufacture team were on call to assist throughout the design phase. Detailing prior to fabrication allows for early discovery and resolution of conflicts, and coordination with other building components and services. Offsite prefabrication also ensures accuracy, and time efficient onsite installation - cutting down the overall construction phase timeline.

Every detail down to the building's materials, exterior fabric, mechanical services, lighting and electrical efficiencies, hydraulics, transport, operations, waste and emissions have been carefully considered to hit key energy targets.

Indoor environment quality is constantly monitored and the 3-storey timber framed double-glazed façade offers solar shading, so air-conditioning is only needed in extreme conditions. The motorised vertical timber cross-flow louvres provide a black out when required for functions or exhibitions.

The space also functions acoustically without amplification, reducing need for microphones and ensuring the theatre maintains a natural and intimate atmosphere.

BEAM 17 BEAM 21

Glue Laminated Timber (GLT) products used

Trusses	280 (min) x 170mm Beam 21
	215 x 85mm Beam 21
Purlins	260 x 65mm Beam 17
Mullions	380 x 260mm Beam 21 with 20 x 250mm steel flitch