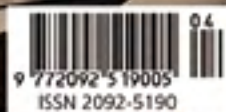


University Buildings in Context
Addition and Subtraction



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Advanced Engineering Building at the University of Queensland

Richard Kirk Architect + HASSELL



In 2009, Richard Kirk Architect and HASSELL, in Association were appointed as Architects for the \$130 million Advanced Engineering Building (AEB) project, following a limited design competition. The AEB delivers on the University of Queensland's vision to create a building to celebrate, collaborate, create, learn, innovate and sustain, all within an integrated engineering landscape.

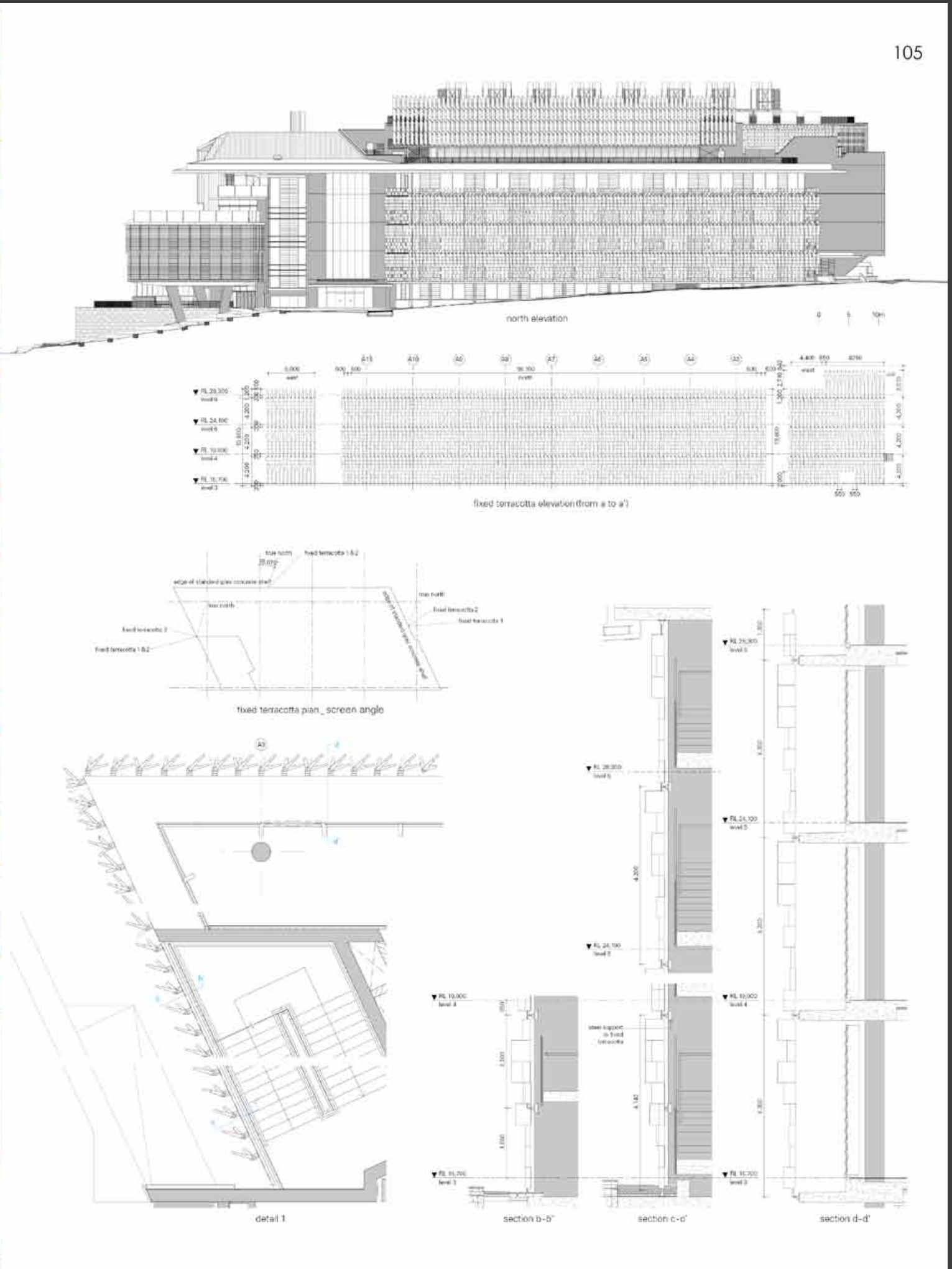
The AEB facilitates the transformation of engineering education through all aspects of research, postgraduate training and undergraduate education. The structure of the building is as open as possible, to allow a high level of visibility of processes and equipment to visitors and staff alike, with a large foyer area to be used to showcase manufactured goods, stimulating interest in manufacturing processes and utilizing advanced materials.

AEB involves a highly complex building program, which includes research facilities, teaching and learning spaces, laboratories and office accommodation for the School of Civil Engineering and the Queensland Center for Advanced Materials Processing and Manufacturing (AMPAM). Careful planning overcame any potential issues, instead generating clear and innovative spaces and circulation, and achieving the high level of transparency, interactivity and collaboration sought by the University.

The structure has been conceived as a "living building" – allowing real-time, finite monitoring of performance in climatic and structural terms. This is driven by the intention that the building becomes a lifelong learning tool and a direct part of the curriculum. The layout and general planning is integrated into three volumes that feed off a central and communal vertical street. Planning relationships and adjacencies provide and integrate flexible, active-learning spaces with laboratories allowing for progressive teaching. Program is located and displayed in an explanatory nature, linking the program horizontally and vertically creating a sense and process of discovery.

AEB is a 5 Star Green Star As-Built certified building, achieved through the use of simple systems, including a central atrium to introduce tempered air and light into the building, highly efficient facades, mixed mode ventilations, night purging and excellent daylight levels.

The use of local Queensland timber became central to developing



sustainability initiatives beyond the singular energy strategies typically targeted in large projects. Particular focus was placed on leveraging the aesthetic, environmental and structural strengths of using locally produced timber in the building – including structural facade glazing and long span glulam roof trusses in one of Australia's largest timber-framed auditoriums.

These strategies are also innovative in their direct link to pedagogy with the expressed structure utilizing timber for its sustainability credentials and contribution to acoustic quality or "color" in the 500-seat auditorium. The ambition for this space was also to allow for spoken word without amplification – an idea that promotes a more intimate teaching and learning experience. The purpose was to demonstrate the functional and aesthetic potential of timber across the building, resulting in a new benchmark for sustainable architecture and an ongoing commitment to local sustainable industry.

퀸즐랜드 대학교 고등기술연구원

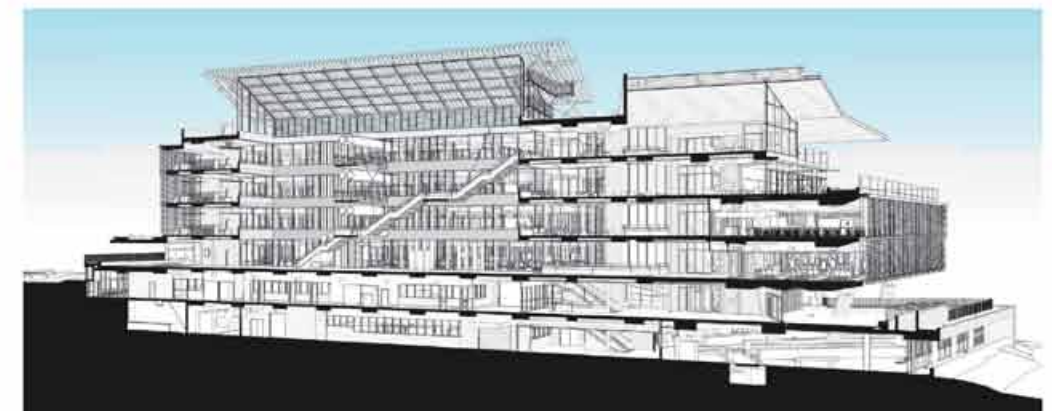
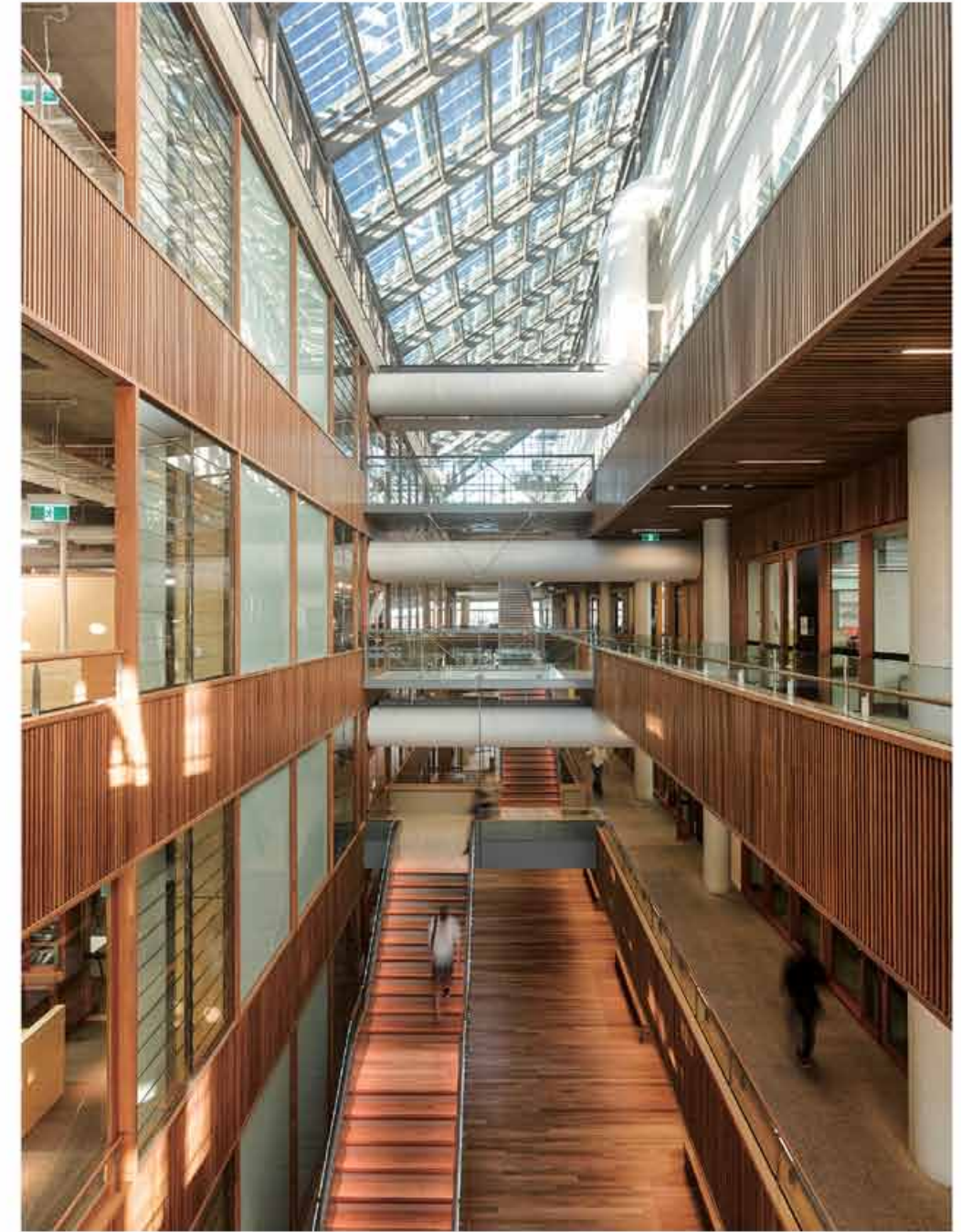
우수한 캠퍼스 환경으로 국제적 명성을 지닌 호주 퀸즐랜드 대학교에 최첨단 시설을 갖춘 고등기술연구원이 완공됐다. 총 투입비 130만 달러에 달하는 대규모 프로젝트로, 학부생부터 대학원생과 연구생까지 공학에 관련된 모든 이들이 협력적인 관계 속에서 지식을 탐구하고 혁신적인 기술을 창조해내는 첨단 연구공간이다.

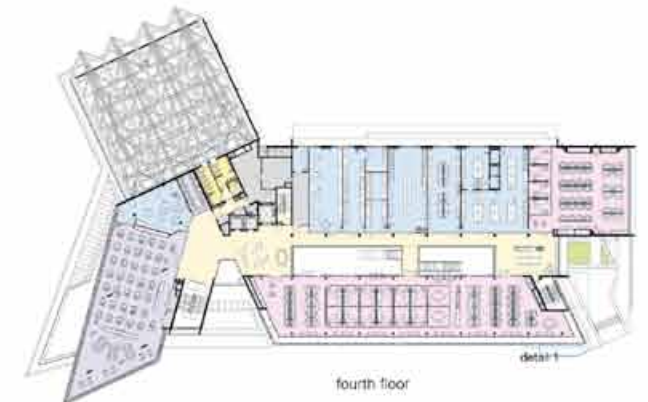
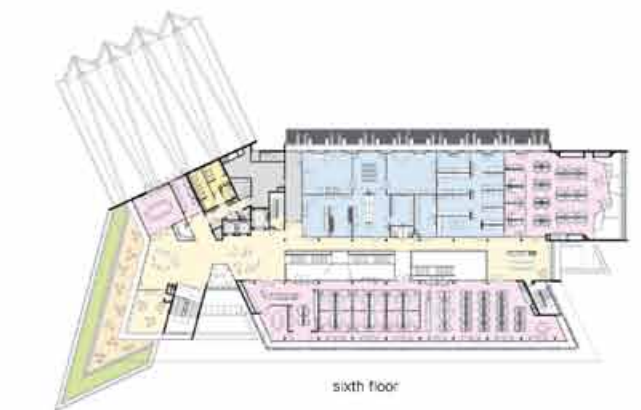
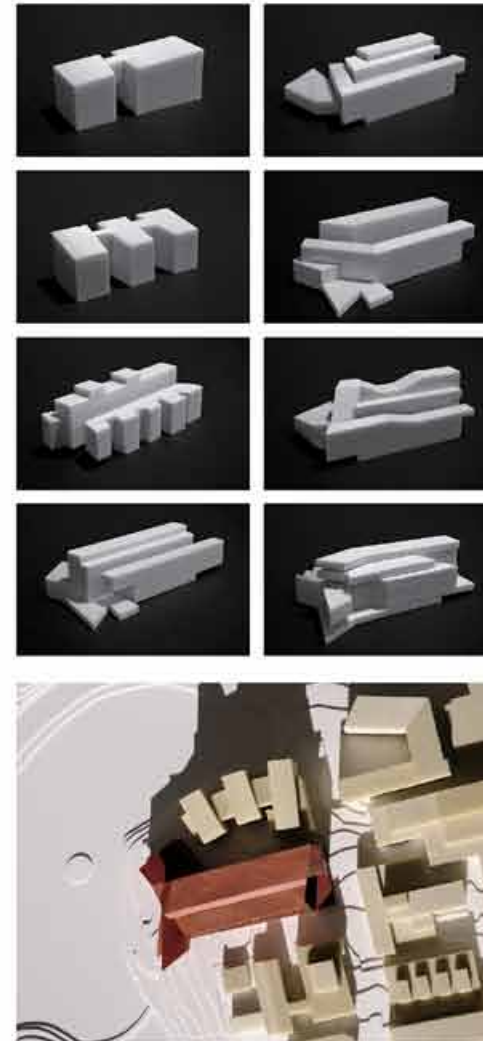
연구동은 크게 세 개의 공간으로 나뉘는데, 각각의 부분은 서로 다른 방향을 향해 있다. 내부에는 연구실과 실험실, 교수실, 토목공학부 사무실, 신소재 제조 및 가공센터, 강당 등 여러 학과의 독립적인 연구공간과 모두를 위한 공용공간들이 다양하게 배치되어 있다. 이 같은 여러 공간은 건물 전체를 가로지르는 중앙 복도를 통해 서로 연결되면서 다양한 소통의 가능성을 만들어 낸다.

또한, 복도에 면한 공간은 모두 개방해 두어 누구든 최첨단 장비와 연구 과정을 살펴볼 수 있도록 했다. 실시간으로 실험 진행 상황을 관찰할 수 있어 연구진들에게는 특히 큰 도움이 될 것이다. 이렇게 만들어진 연구 결과물들은 로비에 전시된다. 일반인에게는 다소 생소할 수 있는 첨단 과학과 신소재 분야에 대한 관심을 자극하는 좋은 촉매제가 될 것이다. 이렇듯 각각의 공간은 뚜렷한 용도를 지니고 있지만, 평면적으로는 상당히 유연하게 계획되어서 필요에 따라 통합할 수도, 분리할 수도 있다. 단일 건물이라기보다는 최첨단 기술의 복합 단지에 가까운 듯한 모습이다.

연구동 설계의 기본 개념이기도 한 '살아있는 건물'을 만들어내기 위해 친환경 에너지 전략들도 계획했다. 일례로 중앙 아트리움은 자연광을 끌어들이고 공기의 순환을 도움으로써 쾌적한 실내 공간을 조성하는 데 큰 도움을 준다. 또한, 북쪽에 자리한 강당에는 퀸즐랜드에서 자란 통나무가 주 자재로 사용되었는데, 기능과 구조는 물론이고 지역성까지 느낄 수 있는 재료를 선택함으로써 심미성과 친환경성, 더불어 친근감까지 모두 충족시킬 수 있었다. 그 결과 친환경 인증 평가에서 별 다섯 개를 받는 성과를 거둔 이 건물은 캠퍼스의 지속가능한 발전의 새로운 상징으로 자리매김할 것이다.









Project: Advanced Engineering Building
 Location: Brisbane QLD, Australia
 Architects: Richard Kirk Architect, HASSELL
 Project team: Richard Kirk, Paul Chang, Yeo Jien, Andrew Drummond, Fedor Medek, Jonathan Ward, Stephen Chandler, Adam Laming, Mitch Boed, Shane Willmet, Erik Szireki, Matthew Mahoney, Lynn Wang, Grace Egstorf / HASSELL, Mark Loughtnan, Mark Roenrs, Mark Craig, Joe Soares, Peter Hastings, Daniel Loo, Alison Hertz, Catherine Van Der Heide, Troy King, BP Loh, George Taran, Nguyen Luy, Mac Young, Fraser Shiers, Cheong Kuen, Amy Carrick, Greg Allis
 Structural / Electrical engineer: Aurecon
 Mechanical engineer: WSP Group
 Landscape architect: HASSELL
 Contractor: WATPAC
 Bldg. area: 20,000m²
 Gross floor area: 20,000m²
 Design: 2009-2010
 Construction: 2011-2013
 Photograph: ©Peter Bennetts(courtesy of the architect)

