

built environment collective



engineered design & management

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Award Winning Projects

Capability Statement

.....

5th Edition

bec.studio

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Project:
Architect:
Awarded:

Clifftop House
Joe Adsett Architects
CIA Award for Excellence in Concrete Awards -
Residential Building Catagory



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We challenge mediocrity and strive towards Client relationships and project team associations where a collective approach is championed in recognition of enhanced outcomes.

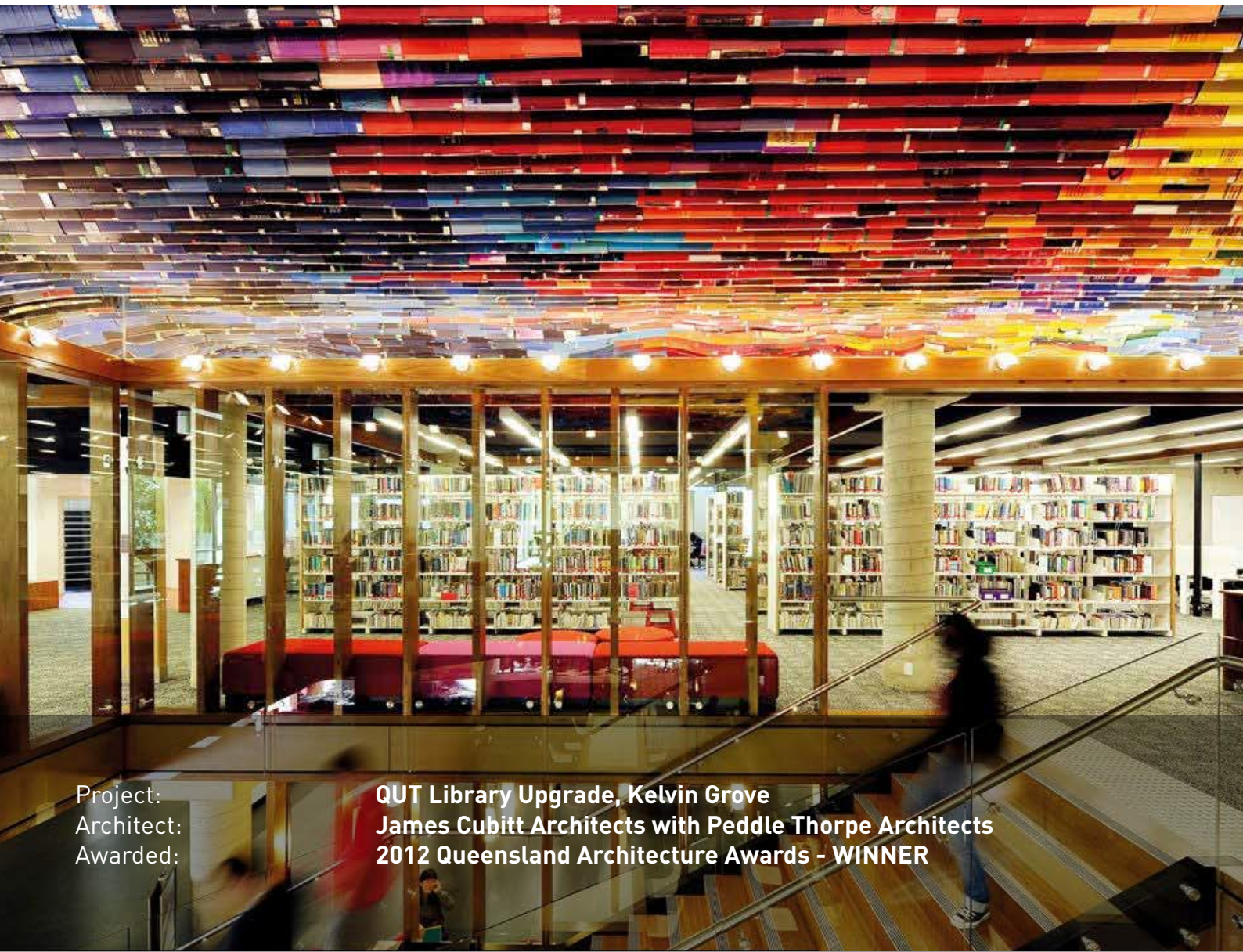
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John Tuxworth

Managing Director
BEC

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Project:
Architect:
Awarded:

QUT Library Upgrade, Kelvin Grove
James Cubitt Architects with Peddle Thorpe Architects
2012 Queensland Architecture Awards - WINNER

Our Company

Built Environment Collective is an award winning Australian-based project management, design & contracting business, offering enhanced Client outcomes via integrated solutions & a holistic approach to design & construction.

Founded on the 20-year international experience of Managing Director, John Tuxworth, the company provides a unique value-adding contribution across a range of market sectors and project types.

Built Environment Collective is proud to be ISO9001:2015 certified to provide Structural, Civil, Building Services & ESD Engineering consultancy, as well as Project Management services in Australia & internationally.



Our People

BEC is comprised of diligent, passionate professionals, who utilise their expertise to facilitate optimal Client outcomes.

We maintain a rigorous approach to Continuing Professional Development (CPD). In addition of the commitment required by the relevant institutes and councils, CPD targets are mandated as part of each staff member's employment contract.

The Managing Director, John Tuxworth, contributes across all service offerings. John's tertiary education started at QUT's school of Civil Engineering. Following this John spent several years abroad working for Maunsell (Aecom) in Indonesia, Waterman Partnership in London, and Michael Punch and Partners in Dublin.

John's interest in becoming a multi-discipline building professional saw him undertake architectural studies at the University of Westminster in London, and he has also undertaken MBA studies through Latrobe University. John is also one of the few structural/civil specialists to be accredited as a Green Star Professional.



Project: **Kent Road**
Architect: **bureau^proberts**
Awarded: **2015 AIA Brisbane Regional Commendation**
2015 AIA Queensland State Commendation



Project: **QUT Library Upgrade, Kelvin Grove**
Architect: **James Cubitt Architects with Peddle Thorpe Architects**
Awarded: **2012 Queensland Architecture Awards - WINNER**

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Our Capabilities

Our Team of experienced professionals use advanced engineering software to produce designs and documentation that are highly functional, fit-for-purpose, and which provide enhanced assistance to contractors.

We design buildings, structures, and operational works to a Client's detailed specifications and eliminate unnecessary costs, whilst still achieving compliance with Australian and international building codes. A strong focus on collaboration with other design team members and the contracting team benefits our Clients by integrating a larger pool of ideas and experience.

Our designs respond positively to the local environment with a focus on reduced maintenance and operating costs. We offer a multi-disciplined experience to assist with the reduction of materials and utilities requirements, and the maximisation of natural light and ventilation.

In addition, we offer experience with environmentally sustainable systems such as energy efficient and automated lighting, solar heating and rainwater harvesting for reticulation to amenities and swales. Our innovative approach to buildability is based on construction techniques which lend themselves to safety and efficiency.

We work hard to ensure that Client objectives and outcomes are clearly defined from the outset. Our hands-on approach to project management assists to drive each project towards delivery, with an emphasis on quality, cost and program.

Our Expertise

We have significant experience in the design & documentation of developments both in Australia & abroad, across the company's core disciplines of structures, civil infrastructure, hydraulic services, & ESD.

- > **Structures**
- > **Civil Infrastructure**
- > **Hydraulic Services**
- > **ESD (Ecologically Sustainable Development)**

Structures

- > Multi-storey & low rise
- > Residential including architecturally designed homes
- > Commercial, education, municipal
- > Industrial, heavy industry, petrochemical

Civil Infrastructure

- > Stormwater management
- > Engineering Services
- > Subdivisions
- > Roads
- > Programme & Disaster Management

Hydraulic Services

- > Multi-storey & low rise
- > Luxury homes
- > Commercial, education, municipal
- > Water reuse strategies

01

PROJECT: Clifftop House
ARCHITECT: Joe Adsett Architects
SIGNIFICANCE: Architectural Homes | Structural | Hydraulic Services
AWARDED: 2017 CIA Excellence in Concrete - QLD - Residential

An unorthodox, reinforced concrete solution enabled a home for seven to be realised on a triangular parcel of land between the existing house and cliff top. The project has dramatically transformed a low-set brick home into a spectacular 5-bedroom triumph, over three floors with a pool, gym, green roof and breath-taking river views.

BEC provided coordinated Structural and Hydraulic consulting engineering services for the project. Off-form concrete produced brutalist, robust finishes to vertical elements as well as slab soffits. The sharp, tectonic elements when viewed externally respond to, and jut out above, the sheer cliff face. Internally these hard finishes are countered by sumptuous, warm materials to create a safe, comfortable and nurturing residential environment – almost as if hewn out of the cliff face itself. BEC utilised finite-element analysis to achieve slenderness and the sailing cantilevers up to 3m in length. Multi-discipline design methods and processes, including Revit modelling, facilitated hiding hydraulic services via encapsulation within off-form slabs and columns.





02

PROJECT: Nundah House
ARCHITECT: Kahrtel
SIGNIFICANCE: Architectural homes | Structures
AWARDED: 2016 BDA Awards, Brisbane and State Level:
Winner - New Homes \$500k-\$750k
Winner - Residential Interiors
Winner - Most Innovative Design
Winner - Best Use of Light Weight Material

The Nundah House is a stunning architecturally designed home for which BEC was appointed to provide structural consultancy services.

BEC has a strong affinity with high-end residential design, which is evidenced through the innovative, buildable solutions that facilitate the often complex aesthetics of the architecture. Structural framing for this project is significant given the first floor cantilevers on three sides. These cantilevers are designed to disengage the first floor from the ground plan, to provide cover and also privacy to ground floor areas.

The BEC team simplified, minimised and rationalised framing in support of a 300mm maximum structural floor-to-floor zone. BEC provided expert and sympathetic engineering in order to support architectural intent, and also informed the passive solar design initiatives embodied in the architectural design.

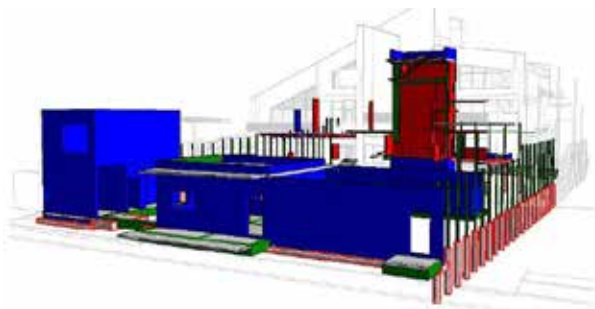
03

PROJECT: Australian Embassy in Ethiopia
ARCHITECT: James Cubitt Architects
SIGNIFICANCE: Structural
AWARDED: 2016 Australian Engineering Excellence Awards;
High Commendation - Small Business Category
State Finalist - Structures Category

The BEC Team have provided due diligence advice to in procuring a chancery building in Addis Ababa for the Department of Foreign Affairs and Trade (DFAT). Our role was to select, and equip a building appropriate for a diplomatic posting.

In providing structural advice as to the seismic strengthening of the building, BEC were able to draw upon seismic strengthening methods used elsewhere in the world, and the likely sources of potential weakness based on the building and material construction. Selection and nomination of appropriate building services equipment for the building has been done in careful consideration of the geographic location, the need to reduce whole of life costs, and the availability of replacement parts. This has been informed by our previous experience designing for overseas conditions.

In 2016 BEC's efforts on the Australian Embassy in Ethiopia were awarded a High Commendation in the Small Business Ventures and Projects Category (pictured below hanging proudly in our Brisbane Head Office) at the Australian Engineering Excellence Awards.





04

PROJECT:

Somerset Civic Centre, Esk

ARCHITECT:

Thomson Adsett/Studio 39 Architects

SIGNIFICANCE:

Structural and Civil design Services

AWARDED:

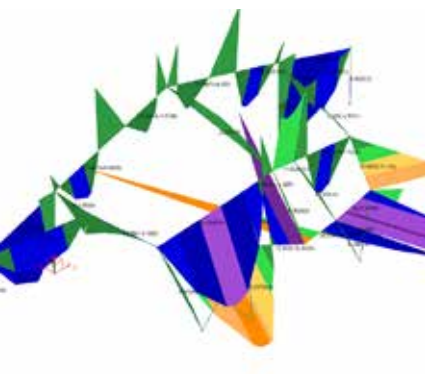
2013 Engineering Excellence Awards - State Finalist

2013 AIA Project-of-the-Year, Darling Downs-WINNER

The BEC Team was engaged to provide structural and civil engineering services for the construction of a new civic centre in Esk. The centre was officially opened on 1st September 2012 and on 15th March 2013 the project was awarded the Australian Institute of Architects Project-of-the-Year for the Darling Downs region. It was also shortlisted for the Bluescope Steel State Architecture Award and recognised as a state finalist in the 2013 Engineering Excellence Awards.

Somerset regional council embarked on the project after the original heritage listed facility was decimated by fire. Our brief was to enable the space to be as flexible as possible to facilitate a variety of uses, including celebratory dinners, theatrical performances, art exhibitions and meetings.

The building form reflects the rural nature of the area, being a modern interpretation of an agricultural structure. Industrial structural steelwork is employed to provide the large spans, with particular attention paid to connection detailing in support of architectural intent.



05

PROJECT:

The Living Room

ARCHITECT:

Aardvarc

SIGNIFICANCE:

Architectural homes | Structures | ESD

AWARDED:

2015 AIA Brisbane Regional Commendation

2015 AIA Queensland State Commendation

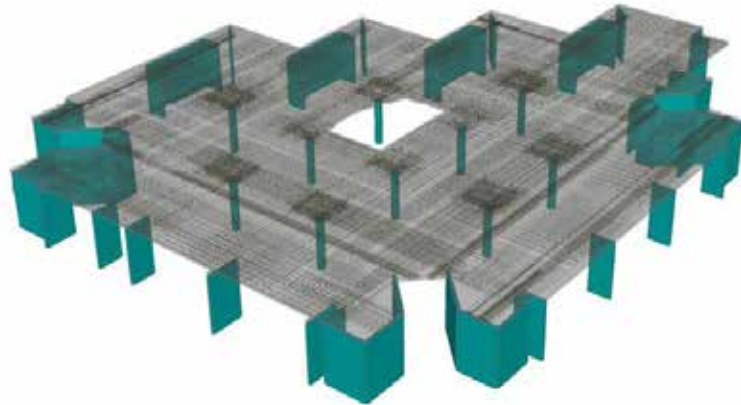
The Inwood St project is a small residential addition which is simply a visual delight. Designed to disappear into the landscape the low maintenance green roof provides a space that can be enjoyed not only by the owners and occupants but by the local wildlife.

The project features

- > a green roof featuring native grasses to hide and blend the structure within its surrounding environment
- > decorative, textured off-form concrete walls that take on a soft organic form
- > architectural steel work

BEC undertook finite element analysis in order to make the roof size and profile as small as possible. The dominant roof form appears to float unsupported due to the placement and slenderness of load-bearing elements. Every structural component of this project was exhaustively refined and integrated to provide the optimal architectural outcome, with an amazing result.





06

PROJECT:

QUT Kelvin Grove Library
Refurbishment

ARCHITECT:

Peddle Thorp | James Cubitt [architects in
association]

SIGNIFICANCE:

Structural Services

AWARDED:

2012 Queensland Architecture Awards -
WINNER

The BEC team provided structural consulting on this project, which opens up the space and enhances both circulation and natural light. The result is an open & inviting learning environment well patronised by students.

In the refurbishment process, BEC were involved in a new multi-storey addition, re-locating entry/egress points & extending the facade to open the library exterior. A 5-floor extension to the library is now a revised entry statement, and provision of a new grand stair has enabled complete reconfiguration of circulation and internal spaces.

Structural re-engineering of the building has improved the functionality & visual amenity of the facility. QUT's Kelvin Grove Campus Library sets a benchmark for sustainable and user orientated education design.



07

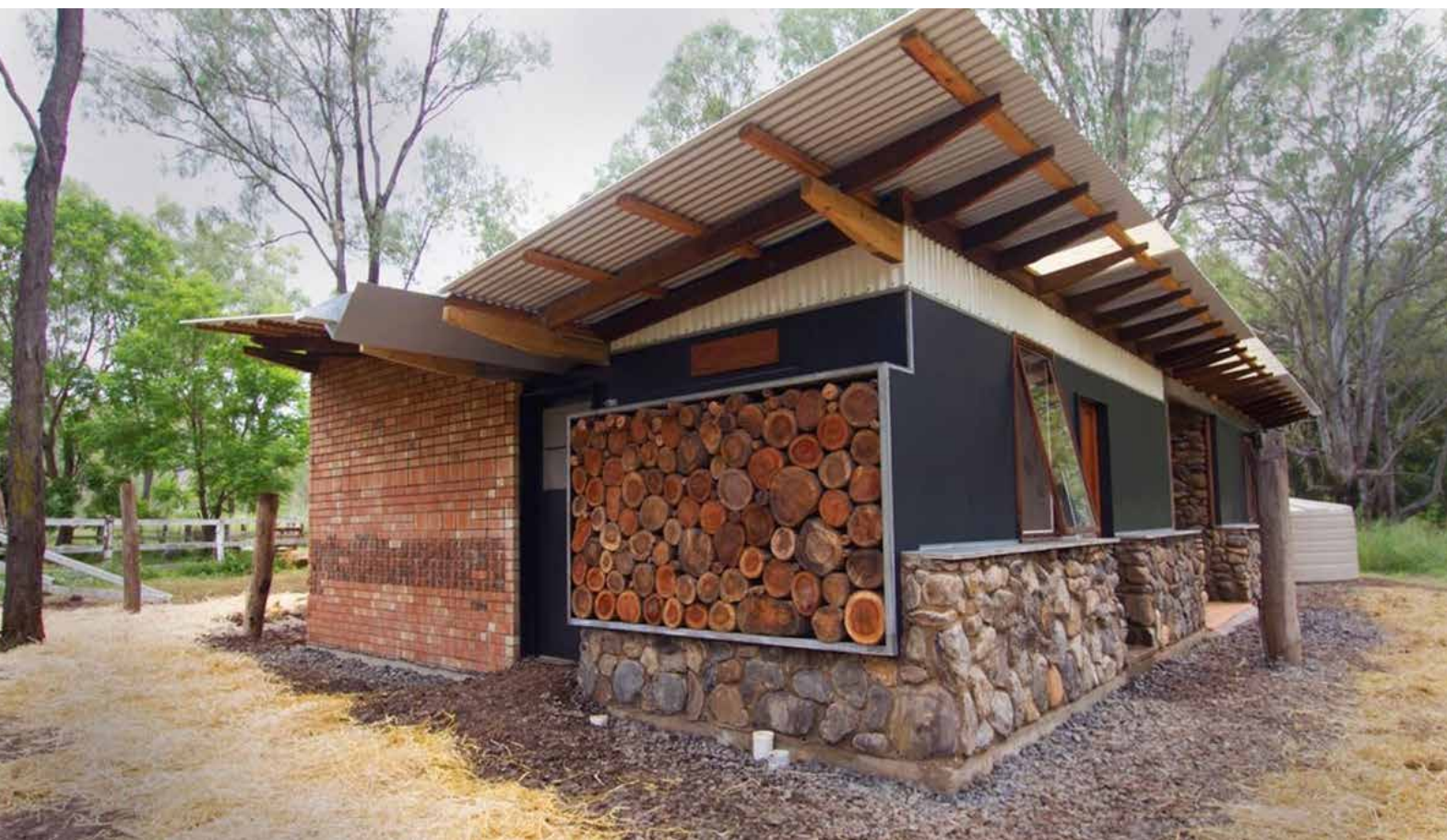
PROJECT:	Bicentennial National Trail Campsite, Murphy's Creek
ARCHITECT:	QUT Student Project
SIGNIFICANCE:	Structural Services
AWARDED :	2012 National Small Projects

The BEC team provided structural services for this new facility located at Murphy's Creek along the Bicentennial National Trail (BNT), west of Brisbane. The Bicentennial National Trail is the longest marked, non-motorised, self-reliant multi-use trekking route in the world, stretching an extraordinary 5,330 kilometres from Cooktown in tropical North Queensland, to Healesville in Victoria.

The structure consists of an animal shelter, hitching rail, feed room, tack/store room, first-aid room and PWD amenity. The design and construction of the project was part of Queensland University of Technology's Architecture degree course. The 3rd year Real Studio students were tasked to design a replacement campsite building situated along the BNT for travelers to use for overnight accommodation to rest and recoup. The students not only designed but helped build the studio under the supervision of a registered builder.

The previous facility was structurally damaged by the Queensland floods of 2011, and thus the students and community were very generous in realising the new facility.

Most materials and professional input for the project were donated, including BEC's time to design and document the required structure.



Modulo – Emergency Shelter



renders: mox. DIGITAL <http://moxdigital.com.au/>



built environment collective
< BE • Collective >
engineered design
structural | civil | hydraulic | ESD

08

PROJECT:

Modulo Emergency Shelter

SIGNIFICANCE:

Structural & Design Services

AWARDED:

2012 Engineering Excellence Awards - State Finalist

BEC were proud to be recognised as state finalists in two categories of the 2012 Engineering Excellence Awards. Our emergency shelter prototype, Modulo, which was designed, built and exhibited by BEC's managing Director John Tuxworth was selected as a finalist in the:

- > Building & Structures Category, and
- > Environment Category

In 2011, a number of international designers were selected to conceive and construct emergency shelter installations for an exhibition on the forecourt of Customs House in Sydney, 2011. Our submission was the only engineering entrant to be selected for exhibition.

Modulo is constructed from recycled polypropylene gabion-wall elements, which can be stored and transported as a flat-packed kit, along with roofing, flooring, lighting and heating components. The gabion units can be filled with building rubble and debris to provide walls with integrity, insulation, security and acoustic attenuation.

The Modulo kits are light-weight and it is conceivable they could be air-dropped into disaster areas. The process of building, and filling the gabion wall units with debris, could contribute to the emotional & psychological healing for survivors - providing a sense of purpose, identity, ownership and belonging in their temporary home.

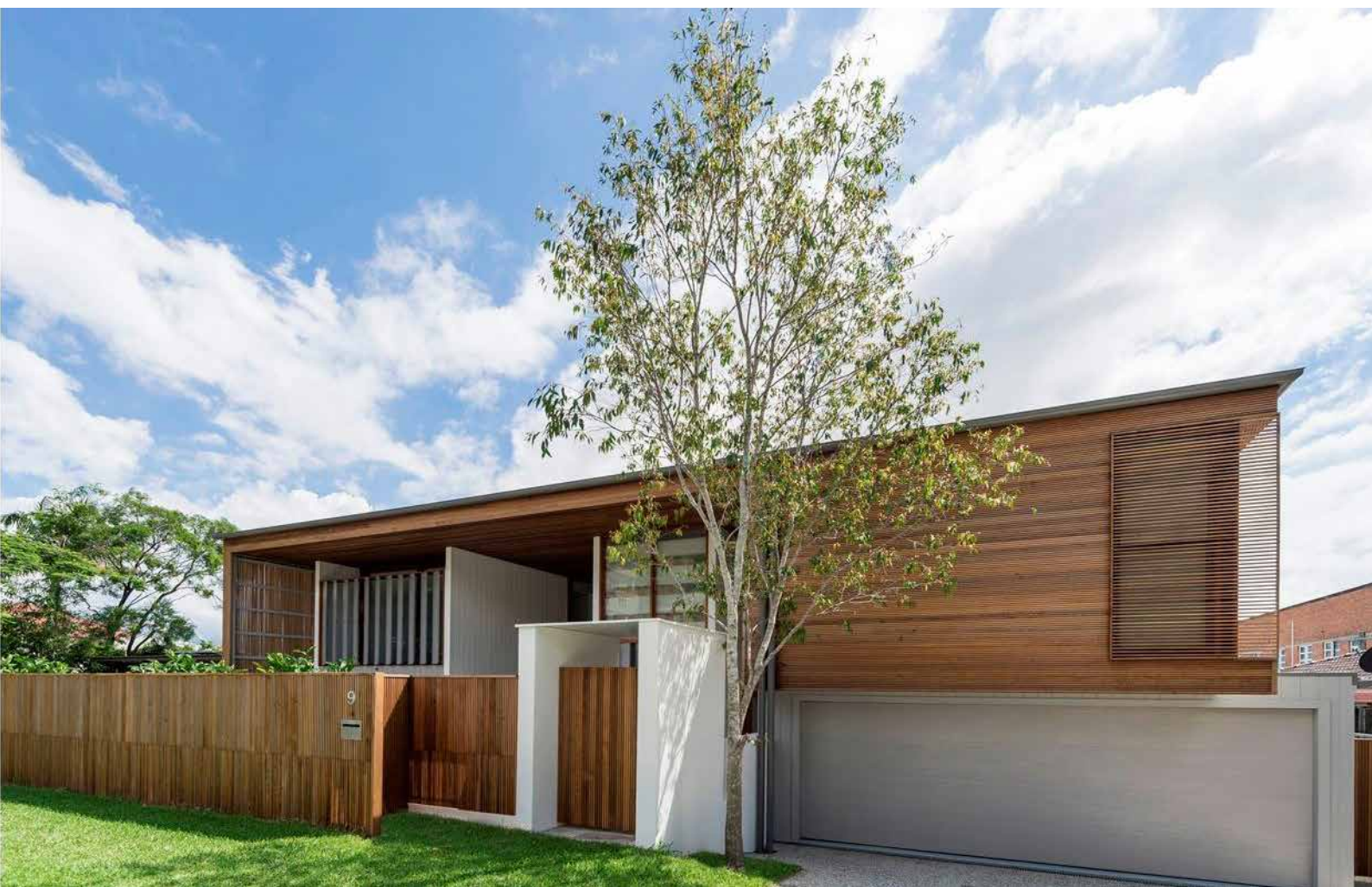


09

PROJECT: Backyard House
SIGNIFICANCE: Structural Services
AWARDED: 2015 AIA Brisbane Regional Commendation
2015 AIA Queensland State Architecture
Commendation

Situated on a compact site this house uses space intelligently through simple planning and skilful spatial manipulation. Although the house is of modest scale it is a dynamic piece of architecture that was achieved for an affordable price.

The house merges internal and outdoor spaces through the use of large operable fenestrations. Voids providing generous amounts of space and light and thoughtful detailing have created a house with strong character.



10

PROJECT: Kent Road
ARCHITECT: Bureau Proberts
SIGNIFICANCE: Architectural homes | Structures | Hydraulic Services
AWARDED: 2015 AIA Brisbane Regional Commendation
2015 AIA Queensland State Commendation

The Kent Road project consisted of a contemporary extension to an architect's own home in Woolloomin. The original house was a simple cottage with a dated 60's extension that had low ceilings, limited windows and a dysfunctional layout.

BEC were involved with designing and documenting the demolition of the 1960's extension and the construction of a new two-storey wing at the rear.

The structural design featured a steel portal frame that was crafted on site and craned into place, requiring some interesting details to ensure that it was aesthetically pleasing and could be easily constructed. The hydraulic commission facilitated the seamless coordination of structure and plumbing, enabling maximum head heights.

The character of the original house was retained and enhanced through the use of sympathetic materials. The end result is an unassuming weatherboard clad extension that connects seamlessly with the original.



Our Values

We challenge mediocrity & strive towards Client relationships & project team associations where a collective approach is championed in recognition of enhanced outcomes.

We are acutely aware of the adverse impact that current development paradigms have on the Triple Bottom Line sustainability.

We believe in professionals adopting a multi-disciplinary perspective in delivering projects.

Our Vision

To be the first choice of Clients who value quality, & to be recognised as adding-value [as opposed being just another commodity service] - by providing creative solutions based on diversified skill and experience.

To lead positive triple-bottom-line change in the construction industry.

To found our business success on a passionate approach towards Continual Professional Development targets in excess of the commitment required by the relevant institutes and councils.



Melbourne | Sydney | Brisbane | Gold Coast | Cairns | Perth | Port Moresby

