

built environment collective

# <BE • Collective>

engineered design & management

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## Educational Buildings

Capability Statement

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2<sup>nd</sup> Edition

[becollective.net](http://becollective.net)

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**Project:** QUT Library Kelvin Grove  
**Architect:** Peddle Thorp | James Cubitt  
**Contribution:** Structural Services

“

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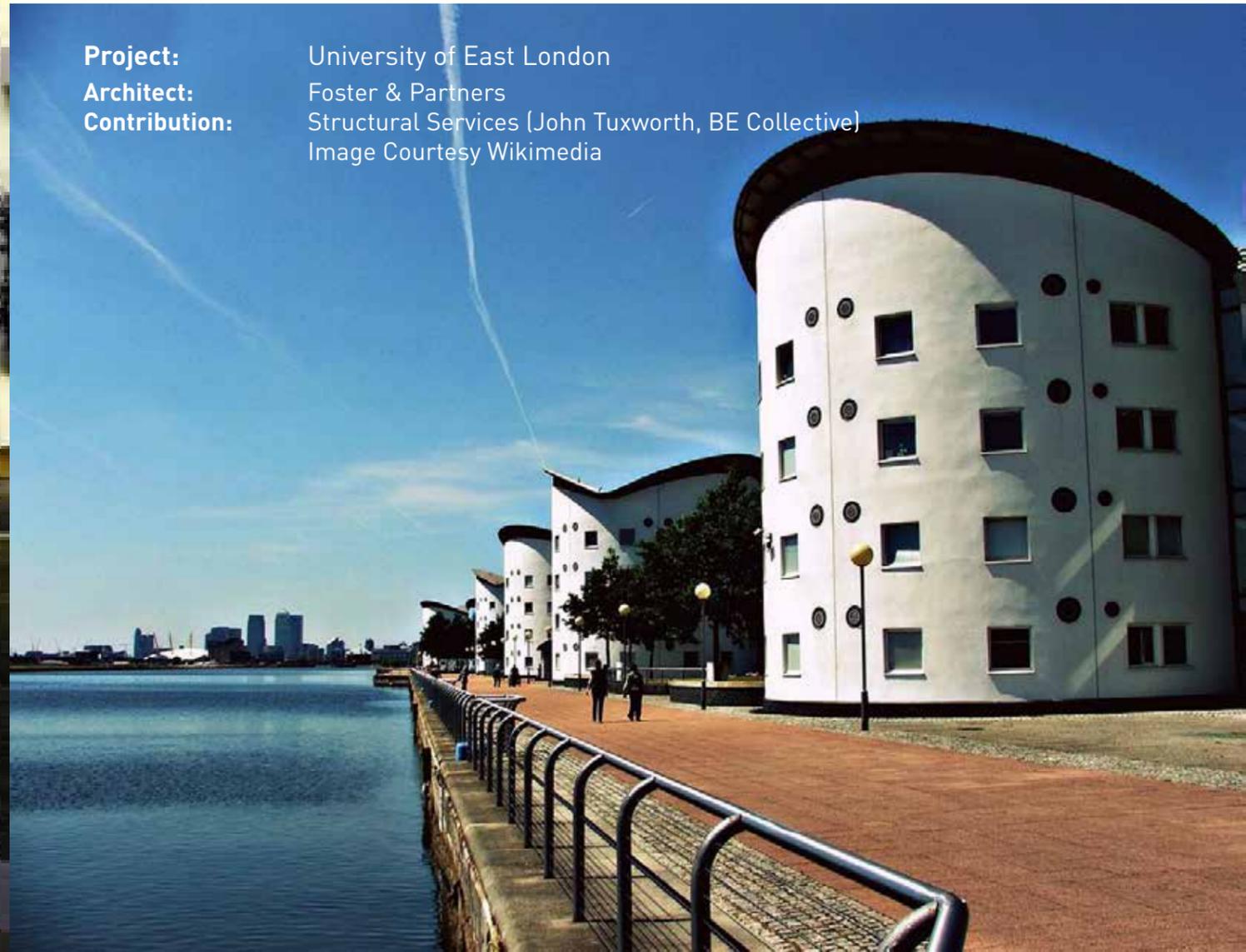
**John Tuxworth**

Managing Director  
BE Collective

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**Project:** University of East London  
**Architect:** Foster & Partners  
**Contribution:** Structural Services (John Tuxworth, BE Collective)  
Image Courtesy Wikimedia



# Our Company

Built Environment Collective is an Australian-based design consultancy offering enhanced Client outcomes via integrated engineering solutions and a holistic approach to design and 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, including heavy industry and manufacturing.

From the main operation in Brisbane we have delivered projects as far as Angola, on the west coast of Africa, to Tonga in the Pacific.

# Our People

BE Collective is comprised of diligent, passionate consultants, who utilise their professional 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 technically across all disciplines. 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 MBA studies through Latrobe University. John is also one of the few structural/civil specialists to be accredited as a Green Star Professional.



**Project:** Griffith University Library Extension  
**Architect:** Thomson Adsett  
**Contribution:** Structural Services  
Image © Angus Martin

# 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 educational 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 and delivery of projects both in Australia & abroad, across the company's core disciplines of structures, civil infrastructure, building services, & ESD.

## Project Management

- > Feasibility & Project Planning
- > Design Management
- > Contract Administration
- > Superintendency
- > Programme and Disaster Management

## Building Services

- > Hydraulic (Plumbing and Drainage)
- > Wet Fire
- > Mechanical
- > Electrical

## Structural Design

- > Multi-storey
- > Architectural Homes
- > Commercial, Education, Municipal
- > Industrial, Heavy Industry, Petrochemical
- > Specialist Concrete
- > Facade
- > Forensic

## Civil Infrastructure

- > Stormwater Management
- > Engineering Services
- > Subdivisions
- > Roads
- > Flood Studies
- > Traffic Engineering
- > Queensland Urban Utilities Endorsed Consultant

Industry Recognition for BE Collective:

[**NOMINEE** - 2015 Structural Awards: Heritage and Small Practice]

[**STATE FINALIST** - 2012 Engineering Excellence Awards: **Buildings & Structures**]

[**STATE FINALIST** - 2012 Engineering Excellence Awards: **Environment Category**]



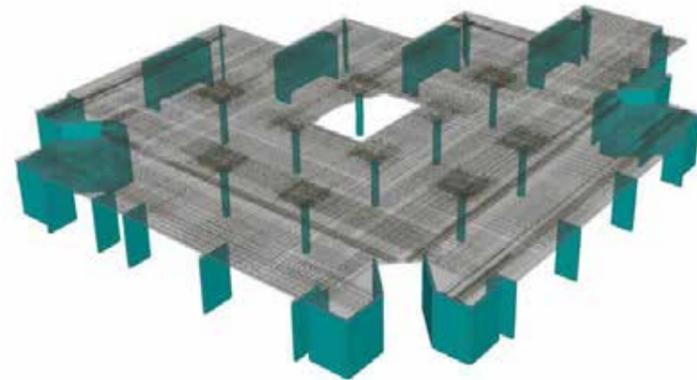
# 02

**PROJECT:** University of East London, Docklands Campus  
**ARCHITECT:** Foster + Partners  
**SIGNIFICANCE:** Structural

BE Collective director John Tuxworth lead the structural design team for four new teaching and residential buildings as well as a bridge. Situated in a stunning waterfront location the Dockland campus was opened in 2000.

Designed by Foster + Partners for UEL's Dockland campus. The steel framed educational structures supports precast hollowcore floors and roof, which also incorporates building services.

The characteristic brightly coloured circular residences provide accommodation for over 1200 students.



# 01

**PROJECT:** QUT Kelvin Grove Library Refurbishment  
**ARCHITECT:** Peddle Thorp | James Cubitt (architects in association)  
**SIGNIFICANCE:** Structural Services

The BE Collective 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, BE Collective 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.

Our input on this project contributed to it being awarded a 2012 AIA Brisbane Regional Commendation!



Images: [Coutesy of Ridge Interi-





Images: [Courtesy of Metcalfe Constructions]



## 03

**PROJECT:** UQ Hervey Bay Rural Clinical School (UQRCS)  
**ARCHITECT:** S3 Architects  
**SIGNIFICANCE:** Structural | Civil | Hydraulics

This new learning and discovery centre opposite Hervey Bay Hospital and St Stephan's Private Hospital in Hervey Bay enables UQ to provide even more teaching opportunities for its students. By training students in rural areas it is hoped this training facility will encourage medical students to take up a career in rural practices.

The facility was part of a staged development incorporating lecture rooms, wards, computer lab, stimulation lab, observation and debrief room, clinical skills lab, conference room and much more.

BE Collective provided design and construction services for structural, civil and hydraulic disciplines.

## 04

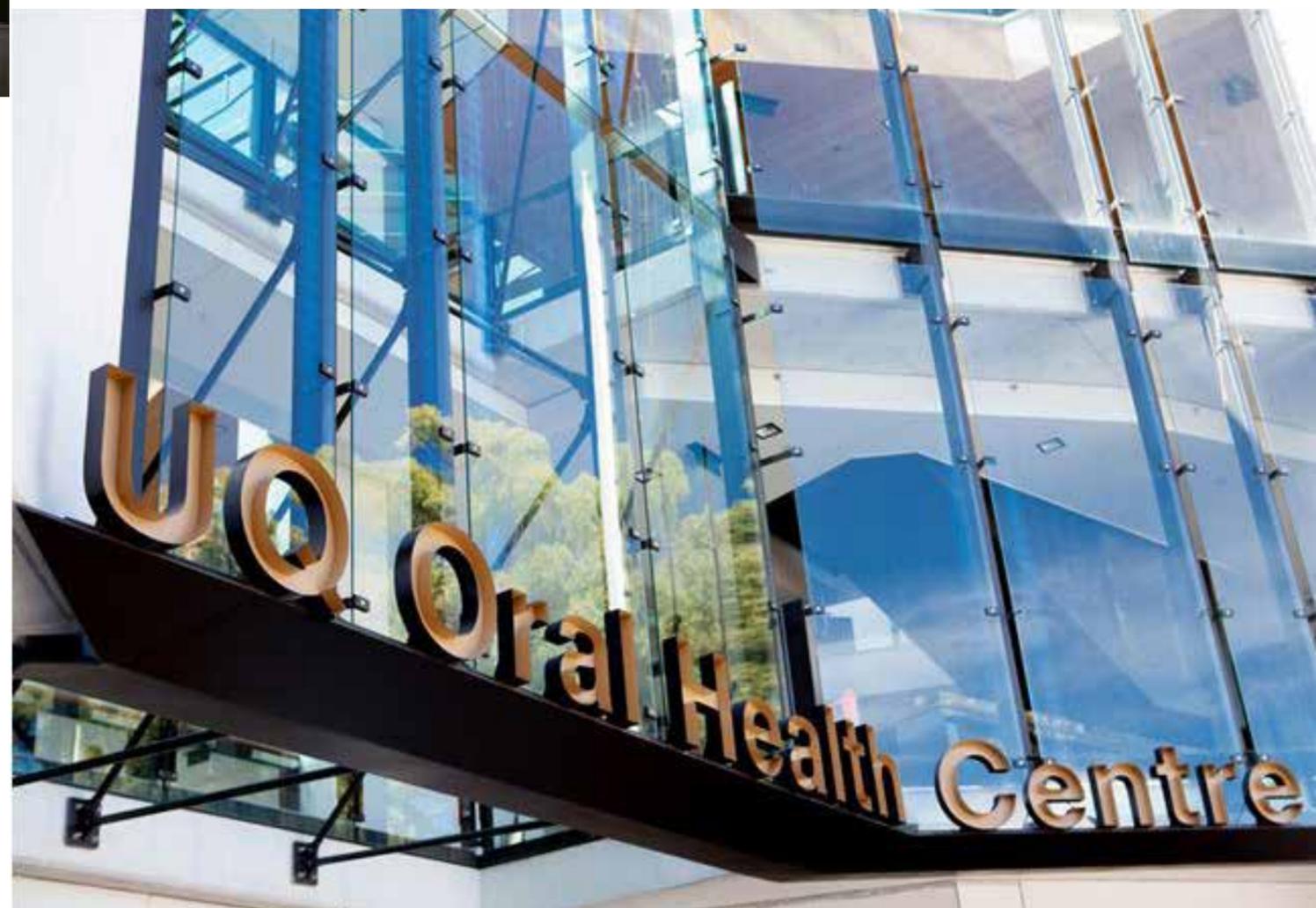
**PROJECT:** University of Queensland Oral Health Centre  
**SIGNIFICANCE:** Structural Inspection & Reporting

The new University of Queensland Oral Health Centre, has been incorporated into the Royal Women's Hospital precinct at Herston.

The multi-storey reinforced concrete structure was built by Lend Lease, who commissioned BE Collective to provide specialist advice relating to construction of the reinforced concrete elements.

Our John Tuxworth is considered one of a hand-full of concrete specialists in Brisbane. Our commission included forensic inspection of noncompliant items including face-step tolerance, formwork quality & reuse, propping, fixing and sealing...and even a work-glove cast into a concrete slab. Our reporting informed contract negotiations.

Image : [Courtesy of UQ School of Dentistry]





[Images: Courtesy BBN constructions]



# 05

**PROJECT:** St Eugene's College - Stage 3  
**ARCHITECT:** Bureau Proberts  
**SIGNIFICANCE:** Structures

Our team provided structural engineering services for Stage 3 of this new school.

BE Collective designed several buildings including:

- 1 a three storey teaching block
- 2 library extension
- 3 student support building
- 4 new covered area

BE Collective worked to ensure that our design tied in with existing structures, while coordinating with other disciplines and seeking out all possible sources of efficiency in construction.

The design used precast concrete to form the façade to the library, post tensioned concrete to the floors of the teaching spaces and lightweight steel to the student support area to match the material use to the local construction preferences, and the economies of construction.

# 06

**PROJECT:** University of Queensland Rural Clinical School  
**ARCHITECT:** S3 Architects  
**SIGNIFICANCE:** Structural | Civil | Hydraulic

BE Collective were commissioned to provide structural, civil & hydraulic consulting services for the new UQ Rural Clinical School at Bundaberg. The development is an extension of the existing hospital precinct, and is one of several buildings proposed to be sited at the old Pony Club oval. The facility houses ward treatment rooms and is utilised by both the University of Queensland and the hospital for training new health professionals.

The building sits elevated above the modelled Q100 flood level, with car parking and building services located in the full-height undercroft. The building structure comprises a suspended reinforced concrete floor and load-bearing tilt-up wall elements. Whilst not a formal project requirement, the civil design incorporates in-ground rainwater detention following recommended best practice. Hot water is supplied from combined instantaneous and solar thermal systems. Reclaimed water has been adopted for toilet flushing and sewerage is discharged via a small pumping station.



Images: ©CFJ

# 07

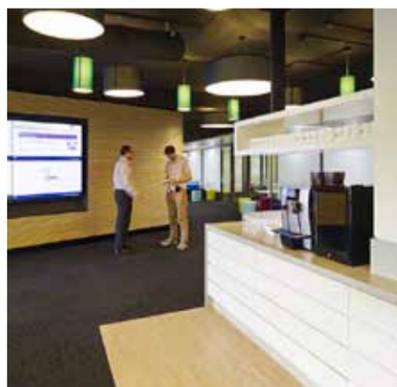
**PROJECT:** QUT B-Block Refurbishment  
**ARCHITECT:** Wilson Architects  
**SIGNIFICANCE:** Structural | Civil

BE Collective provided structural engineering services for the refurbishment of level 4, B-Block Gardens Point. The renovations occurred to accommodate a new Corporate Education centre for the Faculty of Business.

This facility was designed to provide a high quality teaching space, with a distinctly corporate feel. B-Block is an existing 5 level structure, and refurbishment of Level 4 included the demolition of partitions, ceiling and facades to create new:

- > Seminar spaces
- > Catering and Kitchen Space
- > Mixed use rooms

The design and construction solutions developed by BE Collective were required to facilitate work during office hours, with other building levels occupied.



# 08

**PROJECT:** Griffith Library & Gumurrii Centre  
**ARCHITECT:** Thomson Adsett  
**SIGNIFICANCE:** Structural Services | Revit

Griffith University's new learning commons is designed to create a range of internal and external learning environments which promote student and staff interactions. The existing building is triangulated and transformed with a 'permeable' 160m long extension that creates a strong identity and hub presence within the heart of the campus, promoting a sense of 'arrival'. The building form and simple yet striking facade is to encourage connectivity with University Drive.

The BE Collective team provided conceptual design services including structural advice and 3D Modelling. A key complexity of the design was the interaction between the new structure and the existing buildings that surround it. As opposed to demolition, where possible BE Collective nominated structural solutions that incorporated existing elements into a new structural scheme.



# 09

**PROJECT:** QUT D-Block & Link Structure  
**SIGNIFICANCE:** Structural

The purpose of this commission was to provide structural review of the 'as-built' suspended slab on Level 4 D-block, and of the Level 4 Bridge-Link connecting D and R Blocks, in order to facilitate the relocation of the library collection items.

A structural analysis of the Bridge-Link 'as built' and D-Block reinforced concrete floor element was performed to confirm current load capacity of the existing slab, and to provide advice as to the amount of additional load/collection which could be safely accommodated.

On-site Non Destructive Testing with Ground Penetrating Radar (GPR) and local minor core drilling was also undertaken to validate the information provided by record drawings.



# 10

**PROJECT:** Brisbane Boys College – College Hall  
**CLIENT:** BBC - Presbyterian Methodist Schools Association  
**SIGNIFICANCE:** Project Management & Contract Administration | Education

BE Collective staff provided Project Management and Contract Administration services for the construction of the new Brisbane Boys College hall.

The structure is a unique, high-quality performing arts and learning complex designed specifically to enhance the school's reputation as a leader in music and arts education. The new hall features a two-storey, 700-seat multi-purpose performance and speech hall on the upper levels, and a two-storey music department on the mid-levels. Also included is an art gallery, servery, performers' dressing rooms, and a high-end boardroom.

The site was significantly constrained both in space and access. The Hall is located on the only road into the school and adjacent to the main entry and administration centre, necessitating careful traffic management, delivery materials storage and management of tower crane time. Site noise, dust and sediment control were also carefully managed due to the proximity of classrooms and swimming pool.





# 11

**PROJECT:** Boonah State High School – Trade Training Centre  
**CLIENT:** Queensland Government - Department of Education and Training  
**SIGNIFICANCE:** Education Sector | Structural Design | Project Management | Contract Administration

BE Collective staff provided both Structural Design and Project Management services for the Construction phase of the Boonah State High School Trade Training Centre project (TTC). The TTC is a mixed use teaching, workshop, administration and storage space of approximately 600m<sup>2</sup> overall. The design incorporates a traditional steel portal structure with innovative pier and slab design. The structure is clad with multiple finishes and connects with existing adjacent school buildings.

Critical to the project was a short 12-week program, compromised by the proximity of construction to other buildings and curious students within the operating school campus. Despite significant program slip due to issues with Plumbing & Drainage approval issues and wet weather delays, the project was delivered on time, on budget and highly commended by an exceptionally pleased client.

## 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.

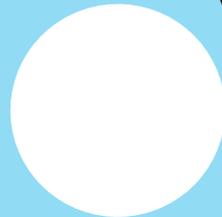
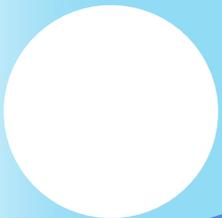
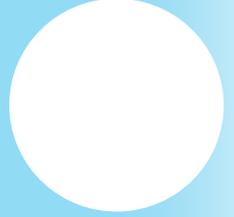
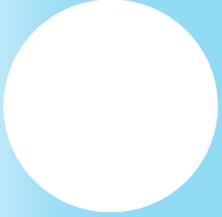
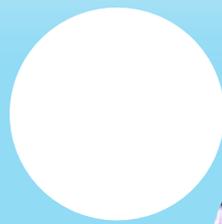
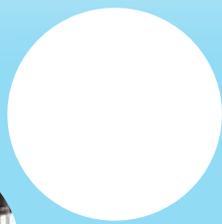
We believe in professionals adopting a multi-disciplinary perspective in delivering projects.

## 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.



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Sydney | Brisbane | Toowoomba | Port Moresby