



built environment collective



engineered design & management

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Multi-Storey

Capability Statement

.....

5th Edition

bec.studio

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“

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

”

John Tuxworth

Managing Director
BEC



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Project:

Montevetro

Architect:

Richard Rogers Partnership

Significance:

Structural



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.

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.



Project:
Architect:
Contribution:

Evolution Tower
Pinzon
Structural &
Hydraulic Services

Our Expertise

We have significant experience in the design and documentation of high-rise & multi-storey developments both in Australia and abroad. Our contribution to multi-storey projects includes the companies core disciplines of structural, civil, hydraulic, ESD and project management.

Discipline Offerings:

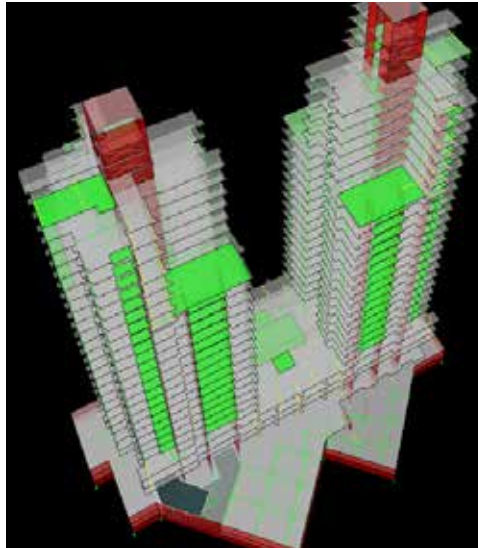
- > Structural Design
- > Civil Infrastructure
- > Building Services
- > ESD (Ecologically Sustainable Development) & Energy Efficiency
- > Project Management

Multi-Storey & High-Rise

- > Abu Dhabi Plaza, Kazakhstan
- > Belamar Towers, Angola
- > Evolution Tower, Angola
- > Wickham Street, Brisbane
- > Elise, Brisbane
- > Hercules Street, Brisbane
- > Verde, Brisbane
- > Vue, Brisbane
- > Gambaros Restaraunt & Hotel, Brisbane
- > Wellington Road, Brisbane
- > Jewel, Surfers Paradise
- > Scarborough Street, Gold Coast

Low-rise

- > Paga Hill, Papua New Guinea
- > Airvos Views, Papua New Guinea
- > 2-3 Storey Townhouse Developments, from Brisbane to Sydney



01

PROJECT: Belamar Towers, Angola
ARCHITECT: Pinzon
SIGNIFICANCE: Structures | Building Services

An exciting high rise in a developing country. This project epitomises the BEC team's ability to complete a multi-discipline, cross-continent, cross-language product.

Our team provided structural and hydraulic engineering services for these two 25-storey apartment towers located in Talatona, an emerging suburb 15km south from the capital, Luanda. The development comprises 468 apartments per tower, approximately 600 parking spaces, communal areas throughout several podium levels, including two swimming pools, a spa, and spa salons.

Floors were designed as unbonded post-tensioned flat plates, achieving longer spans with less weight, smaller columns and increased NLA. The post-tensioning strand layout was coordinated with integral horizontal services runs within the depth of the slab - in order to satisfy the client's requirement for reduced floor to floor heights.



02

PROJECT: Wickham Street Commercial
ARCHITECT: The Buchan Group
SIGNIFICANCE: ESD

This project is presently at DA stage. The prominent position on Wickham St provides a north-west / south-east orientation and a 15-storey commercial building of the order of approximately 24,000m² GFA commercial development has been proposed. The Client recognises the premium return on investment provided by Green Star rated buildings and has set GS and NABERS Star targets.

BEC were appointed as ESD Consultants in 2011 for planning, documentation and construction phases of the project.

Our ESD capabilities are founded upon Managing Director, John Tuxworth's experience, starting with the Greenwich Millennium Village (GMV) Project in 1998 working with renowned architect, Ralph Erskine. The GMV Project was undertaken with reference to BREEAM— arguably the world's foremost environmental assessment method and rating system.





03

PROJECT: Jewel, Surfers Paradise
ARCHITECT: DBI
SIGNIFICANCE: Structural

The Jewel development included three towers ranging from 34-47 storeys each, with a project value of \$1bn AUD. BEC staff were able to provide structural design, documentation, and construction phase services during the later stages of the project.

The mammoth site has a GFA of roughly 95,000m², housing 512 apartments within a multi-use 169 room hotel, serviced apartments, residential, and retail destination resort precinct. Jewel has 3 podium levels featuring hotel functions spaces, food & beverage outlets, spa, gym, indoor heated swimming pool, retail tenancies, and a ground floor resort pool with swim up bar.

04

PROJECT: Ellise Apartments, West End
ARCHITECT: VCP Developments
SIGNIFICANCE: Structural | Civil | Building Services | ESD

The Elise Apartments development in West End is a beautiful 7-storey apartment complex with 42 architecturally inspired apartments, swimming pool and 2 basement levels.

BEC was commissioned to provide civil infrastructure services including a comprehensive stormwater management plan, engineering services analysis and conceptual structural consultancy for Development Approval.

Stormwater was cleverly diverted and put through a Treatment Train to ensure regulatory water quality compliance. Scenario and peak flow calculations took into account site characteristics, topography and drainage.

Other considerations included potable water, sewerage, road and earthworks and telecommunications capacities and requirements.





05

PROJECT: Hercules Street
ARCHITECT: CCN
SIGNIFICANCE: ESD

BEC were commissioned to provide ESD services for this multi-storey development in Hamilton. The project included 144 units over 14 levels with a rooftop terrace and basement parking. Fundamental to the approach of the new development were the following targets:

- > Reduced environmental impact: minimised energy use and resource conservation.
- > Economic savings: reduced operational and maintenance costs.
- > Better and healthier living environments.

BEC have been involved in the project from the beginning, to implement design features which will reduce its environmental impact. The innovative ESD technologies/features include climate-sensitive building design, energy and water efficient fixtures and fittings as well as rainwater harvesting and recycling. This inclusion of these features will result in Superior Design Outcomes that will benefit occupants whilst minimising the impact to the broader environment.

This project has benefitted from Managing Director, John Tuxworth's extensive 20 year sustainability experience.



06

PROJECT: Verde Apartments, Cameron Street
ARCHITECT: VCP Developments
SIGNIFICANCE: Structural | Civil | Building Services

The BEC Team were initially engaged to come on board with this 12-storey project in order to provide civil engineering documentation in support of a Code Assessable Development Application. Our contribution to the 80-unit, South Brisbane project covered the site based stormwater management plan and engineering services report which included sewerage, potable water, roadworks, earthworks, telecommunications, electricity and gas.

Our brief was then expanded to include structural, civil and hydraulic design and documentation. This including additional hydraulic design for a proposed greenwall and associated greywater treatment system to service it. We were again engaged to provide QUU (Queensland Urban Utilities) Endorsed Consultancy services for major works on the water reticulation; then to superintendent the 72-week construction program.





07

PROJECT: Paga Hill
ARCHITECT: Glen Peterson Architect
SIGNIFICANCE: Structural | Civil Services

Paga Hill is a suburb of Port Moresby, the capital of Papua New Guinea. BEC were appointed in January 2012 to provide full structural and civil consultancy for this residential project, including construction phase services out of our PNG office. The project consists of 8 boutique style apartments with commanding views out to the Coral Sea.

Challenges in realising a development on this site included:

- > steep slopes and high retaining walls
- > accommodating tributary loads from a significant up hill development just meters away from basement excavations
- > earthquake forces
- > the distance of sewerage and stormwater legal point of discharge away from the site
- > logistics and construction materials supply chain
- > labour efficiencies

08

PROJECT: Abu Dhabi Plaza - Astana, Kazakhstan
ARCHITECT: HKR Architects
SIGNIFICANCE: Structural

The Abu Dhabi Plaza project spans 500,000m² and will boast five towers once complete; including the tallest tower in central Asia - at 88 floors and 380 metres. The integrated mixed use development includes serviced apartments, a 300 bed hotel, an international retail centre, as well as commercial & retail space. The project has a value of \$1.6 billion USD.

BEC staff provided structural engineering services in support of the development, including the design and documentation of raft slab footings, shear walls & composite columns, and outrigger walls.





09

PROJECT: Scarborough Street
ARCHITECT: Kahrtel
SIGNIFICANCE: Structural | Building Services | Civil

BEC was recently commissioned to provide multi-discipline design services for a unique and innovative multi storey development in Southport. BEC have already provided preliminary structural services, stormwater management services and civil documentation services and will be responsible for the structural, civil and hydraulic engineering aspects of the project once development approval has been attained.

Focused on making the most of a small space, the Scarborough Street Multi-Res manages a car stacker, ground floor café and 6 storeys plus a rooftop terrace onto a site of only 410m².

The project has made big waves in the industry – The Gold Coast City Architect recently referred to it as the most innovative site solution that he had seen in his time, predicting that the project would “become a precedent for Gold Coast and the wider region on how to best utilise small lot developments”.

Drawing inspiration from polite high density structures in Japan, Architect Joel Adsett from Kahrtel and his team aim to safeguard Australian cities from overcrowding by learning from areas already adapting.

10

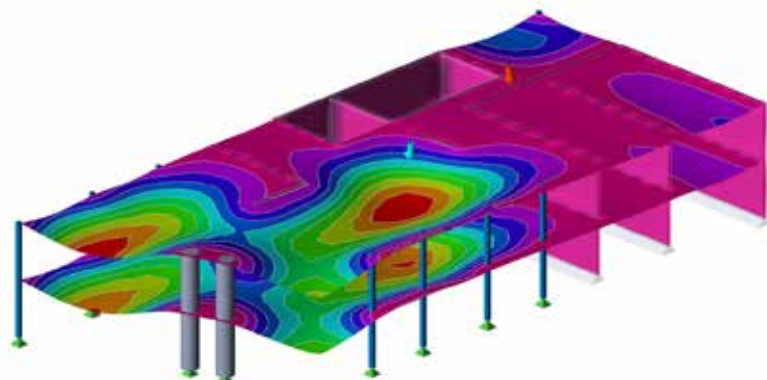
PROJECT: Wellington Road
ARCHITECT: Bureau Proberts
SIGNIFICANCE: Civil, Structural, Documentation

BEC have provided engineering and stormwater code compliance services as well as preliminary structural services for an impressive new East Brisbane development.

Featuring eight storeys plus a basement and a sleek angled feature column, the complex boasts a central location with a prime river view.

In order to assure comfort and convenience for its residents and to maximise the use of space, a car stacker is planned for the basement level which can accommodate eleven cars over a space that would normally fit four.

The top three floors open up to form an expansive penthouse with numerous guest rooms, a spa, pool, gym area and large balcony.



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

