

25

**BLIGH
TANNER**

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THE STORY SO FAR

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PREFACE

The production of this 'Bligh Tanner Story' was initiated by two significant events occurring in 2017:

- 1) The 25th Anniversary of the first seeds of the business—the establishment of 'Roderick Bligh Structures', AND;
- 2) Chris Tanner leaving the company to take on some new challenges.

Over the past five years, the idea of Chris leaving the business was discussed frequently to enable succession and hand over to be as seamless as possible. Replacement of 'same for same' was never expected, and an overlap of new partners and senior staff took place to ensure continuity of the company, and its work for clients. The overlap also provided the opportunity for the transfer of experience and knowledge from Chris to others in the business.

These events led the Directors to reflect on what the company had achieved over the past 25 years and where the business was heading. We realised that we had much to celebrate and that Chris's departure was an opportune time to record our story and share it, most especially with valued staff (past, current and future), but also with clients, collaborators, and families.

We have enjoyed the collective process of 'digging through long forgotten boxes' and revelling in past stories, characters, wins, losses, smiles and the hard lessons of doing business. Pulling together some of the stories and recollections of 25 years from seven busy individuals fell to the very competent and professional hands of Jo Hoban, who through many months of patience and determination managed to keep us on track and filter all our random ramblings into a coherent and concise story. We are also grateful to Nicole Phillips for working her design magic on the content, presenting it in such an engaging style, and co-ordinating printing.

While the company has grown in many ways with projects, staff, collaborators and clientele, the one constant throughout has been our belief and insistence on great company culture. We are proud, not only of what the business represents in 2017, but also of how we got here.

We extend our sincere gratitude and respect to all who have journeyed with us and played a contributing role.



25

YEARS

4

LOCATIONS

Brunswick St, Wandoo St (heritage Woolstore bldg.), Florence St (another Woolstore bldg.) + Wickham St.

7

DIRECTORS

Rod Bligh, Chris Tanner, Paul Callum, David Hamlyn-Harris, Paul Easingwood, Cameron Riach, and Alan Hoban.

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STAFF

INTRODUCTION

Bligh Tanner is a structural, civil, environmental and water engineering consultancy distinguished by its high level of expertise, personalised service and reputation for delivering innovation on all projects. Over the past 25 years, Bligh Tanner has been responsible for some of Queensland's most innovative and complex engineering projects. In 2017, the company provides services in five key areas: Land and Infrastructure Development, Integrated Watercycle Management, Building Structures, Environmental Planning, and Special Structures.

'Is it a job, or is it a business?' This is a question that was often put to Chris and Rod in the first decade of Bligh Tanner's activity. Now, in our 25th year, Bligh Tanner has clearly become a business—a living entity with many vital parts and strong connections through industry and the community.

"To make a business work, there is no point just being one of the crowd: you really have to deliver. That's what has driven our business for a long time now—the idea of being a little bit different, being prepared to lead and to embrace change in our engineering."

Chris Tanner

(This quote is drawn from an interview with Chris, conducted by the Cooperative Research Centre for Water Sensitive Cities in early 2016, about how Bligh Tanner is putting people and nature back into the centre of infrastructure development and town planning.)

As the business prepares to farewell from the Board one of the founding partners, Chris Tanner, we are confident his legacy of integrity and innovation will prevail. Chris's new role (as Adjunct Associate Professor at the University of Queensland and Regional Manager of the Collaborative Research Centre for Water Sensitive Cities) is testament to Bligh Tanner's culture of seeking better ways of doing our work. This is illustrated further in Bligh Tanner's story with Chris acting on an early sense that land development practices lacked integration with the natural environment. Bligh Tanner now plays a leading role in sustainable development.

As a small company, we have fiercely protected our reputation through a deep desire to not 'stuff up' and to bring value to everything we do. Consulting engineering is a serious business that comes with great responsibility to protect and enhance lives and livelihoods. Over 25 years the business has gained the respect and trust to deliver major public projects. Supporting Australia at the 2018 Commonwealth Games at the Bligh Tanner-engineered Carrara Sports and Leisure Centre will be a wonderful opportunity to reflect on this trust.



(L – R) The Director team as at May 2017: Paul Easingwood, Director, Structures; Paul Callum, Director, Structures; Rod Bligh, Director, Structures; Alan Hoban, Director, Water & Environment; Chris Tanner, Director, Environmental Planning; and Cameron Riach, Director, Civil Engineering.

This Bligh Tanner story has been written for our current and future staff, to record how we arrived at our 25th year and hopefully to inspire future development of the business. We have learnt that holding a vision and acting with integrity is important. One key vision articulated in the year 2000 and now realised was of Bligh Tanner as a business that attracted great people—those with experience and skills looking to the company as a platform to expand horizons, and the best graduates with a passion to learn and contribute. We are proud of the opportunity that many have had to grow professionally and personally within Bligh Tanner and grateful for the energy and skills of those that are taking the business forward for the next 25 years.

It is tantalising to wonder what new directions and opportunities lie ahead, looking back at the various twists and turns that have occurred in the past. New people attracted to the business, pursuit of new markets, clients and colleagues bringing unexpected projects—all these things will lead to the variety and challenge that we enjoy. While the business will continue to grow in various ways, it is our desire that all Bligh Tanner people retain a strong sense of personal responsibility and hunger to improve and deliver the excellence that has been a feature of the first 25 years.

Bligh Tanner's Directors, May 2017

25 TIMELINE

Pre-1990

The following timeline tells a 'snapshot story' of Bligh Tanner's history and development, situated within the bigger picture of Brisbane's urban development. In its attempt to note many of the significant projects and experiences that have shaped the company so far, it also leaves a lot out and is by no means an exhaustive recount of all projects worked on, staff who have contributed to the business, or clients and collaborators.

Rod built his early career with Arup, having joined the graduate intake in London in 1984 working in the bridge design group. After completing a Masters degree in Edinburgh with a focus on fabric and cable structures, Rod worked in Arup's lightweight structures group in London, and later returned to Brisbane. This experience proved instrumental in developing Bligh Tanner's early reputation for innovation in structures.

Meanwhile, as a student surveyor and graduate engineer, Chris Tanner worked with the Hydro Electric Commission in Tasmania. A lover of the outdoors, he went bushwalking whenever he could with his nature-loving mates. These mates wondered how he could work for a builder of dams, and his work colleagues wondered why he hung around hippy types 'stopping progress'. This started Chris thinking about how to achieve progressive development in an environmentally-friendly way.

1991

In 1990, 'the recession we had to have' set an uninspiring industry tone for consulting engineering in Brisbane. Rod left his position with Arup, and in an effort to move up the creative food chain and enable closer relationships with clients, he embarked on an architecture degree at the University of Queensland (UQ). The first year of study in 1991 brought a deeper understanding of architectural theory and design, as well as demand from architects to provide engineering services on interesting small projects. Rod was also approached by an innovative Brisbane company, Shade Structures Pacific, to assist with developing membrane structure solutions for local and international projects; this called for specialist skills initiated by his study and work in the UK. Now enjoying the added dimension that close personal relationships brought to the business of consulting engineering, Rod decided to leave architectural studies behind.

1991 also saw Mark Ross of Dotdash introduce an unusual commission: Three maritime objects—an anchor, a buoy, and a propeller—were to be mounted outside the Maritime Museum as part of the creation of the Kangaroo Point walkway.

Brisbane's Urban Renewal programme commenced in 1991. Bligh Tanner's history runs parallel with this programme. The business's office locations on Brunswick Street, Wandoo Street, Florence Street and Wickham Street have been in the heart of the urban renewal precinct and indeed the Woolstore buildings (Wandoo and Florence) were subject to major transformation into modern warehouse apartments!

1992

The (official) start of business!

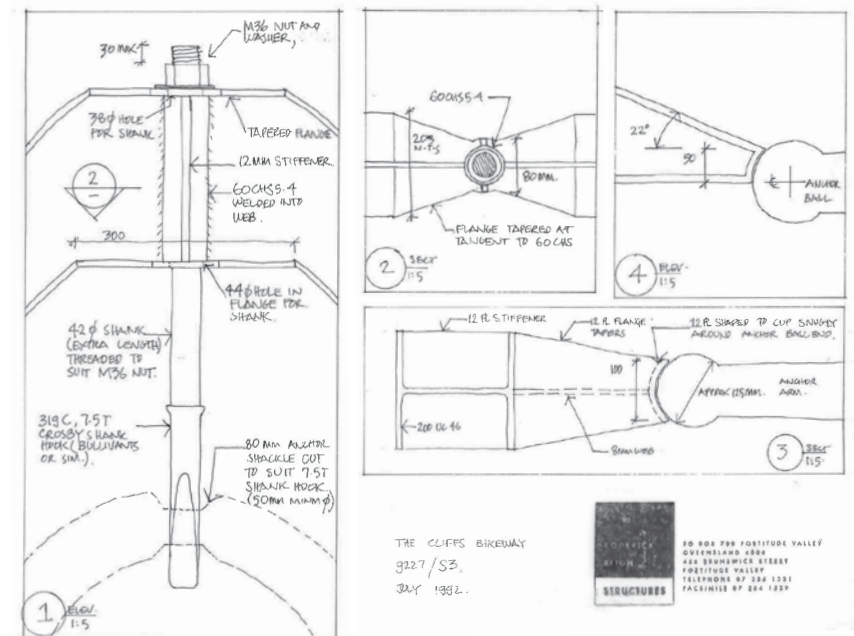
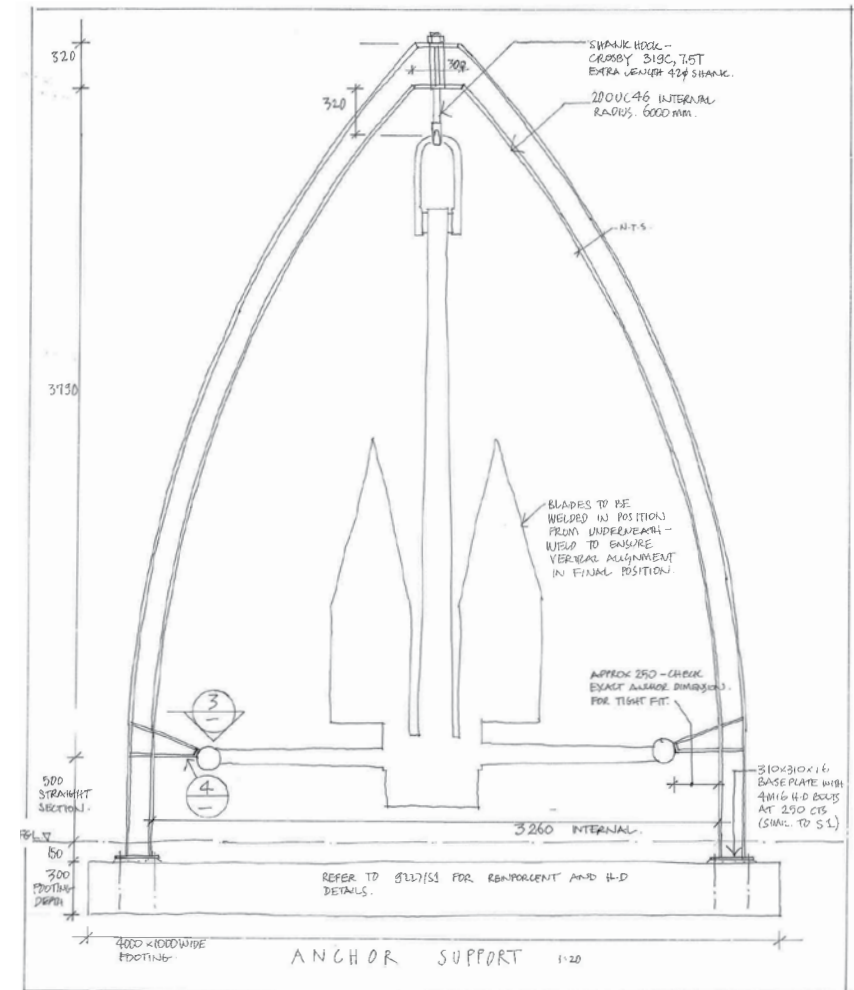
Rod started 'Roderick Bligh Structures Pty Ltd' with Judy, his wife, as co-director and principal financial supporter. And work began on the Kangaroo Point walkway maritime objects project.

As an engineer studying architecture—and having recently visited Carlo Scarpa's seminal Castelvecchio museum in Verona, which was considered an exemplar of artefact presentation—Rod used this opportunity to create structures which expressed and complemented the nature of each object. The success of this work and other art installations along the walkway, led not only to a long relationship supporting the Queensland Government Department of Project Services (including a later commission for the Kangaroo Point Parklands) but also to Bligh Tanner's expertise in sculptural installations. Bligh Tanner's relationships with Queensland Art Gallery/Gallery of Modern Art (QAGOMA), Milne and Stonehouse, Urban Art Projects, Barbara Heath and many other artists and commissioning organisations grew from this early work.

Meanwhile Chris was working out of Singapore for BMP and consulting to Bradley Gardner who was designing and building a unique resort in the mountains in Bali with architect Cheong Yew Kuan. Chris recalls the challenges of working on the project: "Information was very hard to collect. For example, rainfall data was not available and there were survey plans where you couldn't tell the difference between contours and rice paddy edges, and where the power supply would get switched over by the locals who would climb the power poles and short across to the village line, etc. I learnt to work more with the land and situation rather than on paper!"

RIGHT: Rod's original Kangaroo Point walkway maritime artefact presentation sketches.

Brisbane's South Bank Parklands opens.





1993

1st PREMISES: Brunswick Street, Fortitude Valley. Architect Robert Riddel had spare office space and generously offered to share his Brunswick Street premise which was above the quirky restaurant LA454. A long life and business relationship ensued, which was the foundation of Bligh Tanner's expertise in conservation engineering and recycling of existing structures. Interestingly, Robert's wife Pam Easton was also forming her extraordinary partnership with Lydia Pearson at this time, and many lunchtimes were shared at the Cosmopolitan Café as they plotted their way to international fashion fame!

Numerous other enduring relationships developed in these first years that set the course for work that Bligh Tanner still specialises in, such as structural engineering for iconic Queensland architect Gabriel Poole's many residential projects in the Sunshine Coast region. A host of young architects developed their careers within the highly-respected design practice of Gabriel and his wife, Elizabeth Poole, later spreading their wings to create, or work for, various Brisbane practices.

In a 2013 article published by The Courier Mail celebrating Gabriel and Rod's long-term collaborative relationship, Gabriel recalls: "I can't remember much about our first meeting. I probably thought he was a scruffy-looking little bugger... After he did the first job for me, it was clear he was good. I've got the greatest respect for him. He's a fantastic engineer. A good engineer is one who's much easier to deal with because they're not trying to cover their arse all the time. A lot of the older, safer engineers were in there overdesigning as far as I was concerned, but I found with Rod I could put up my ideas and he'd run with them, so I could really do things."

Rod was approached by Queensland Transport to develop their Road Sign Support Manual. It was a brave undertaking by the Traffic Branch to entrust this task to a sole practitioner, however previous efforts with the large consultancies over a number of years had not yielded a methodology or system that was adopted successfully by regional users. Rod developed a new approach that was adopted by the Australian standards and has now been in use for 24 years.

(This early project also helped Bligh Tanner to secure the Busway Station design work which commenced at concept phase in 1997 and continued through to the completion of the Northern Busway in 2012.)

Rod's engineering services were also commissioned for the Church Street Housing project, which commenced in 1993. Located opposite Fortitude Valley swimming pool, this was a key urban renewal project which initiated higher density apartment living in the Valley/Newstead precinct. It was a formative project for Bligh Tanner as it provided an entry into larger institutional projects which are now the company's mainstay. It also drove the need to expand into civil engineering services; delivering this kind of project with civil engineering subcontracted was far from ideal...

.....1994

Roderick Bligh Structures becomes Bligh Tanner



Chris was still living and working in Singapore with his young family in 1994. A keen cyclist, he penned a letter to his friend Rod who had done some cycle touring in France, asking for some advice. Rod sent a reply with his suggestions, including one additional suggestion for Chris to join him in business back in Brisbane so that they could offer a combined structural and civil engineering service. It struck a chord—Chris, his wife Jenny and their children returned to Brisbane where they bought Judy Bligh's share of 'Roderick Bligh Structures Pty Ltd' for AUD\$1.00 and the business was subsequently renamed 'Bligh Tanner'!

ABOVE: Rod and Chris have a beer to celebrate Bligh Tanner's first branded communication.

Both Rod and Chris wanted to deliver high levels of personalised service—in essence, best practice engineering for engaged clients on interesting projects. They believed that as work was an integral part of life, its practise should embody their values and aims as much as possible. These ideas remain central to the Bligh Tanner business.

With their newly combined strength in structural and civil engineering Bligh Tanner's work on public housing progressed well, and the two established a long, strong relationship with Fulton Trotter Architects undertaking school, university and community projects. Noteworthy early projects included Southern Cross University campus at Tweed Heads, Kingscliff Community Centre, and Mount Saint Patrick's School in Murwillumbah.

Other early projects included the concept design for the Townsville Strand with Mark Fuller (now a Principal at Tract, but then a Director of Gillespies Asia Pacific). The project concept combined flowing urban design with resilient infrastructure that complemented the seascape and is a key feature of Townsville's urban landscape today. The relationship with Mark Fuller continues to this day with Bligh Tanner regularly collaborating with Tract on a large range of projects.

ABOVE: Rod, Judy, Jenny, Jack (Chris and Jenny's son) and Chris. Judy and Jenny help with the celebrations. They were quite heavily involved with the administrative side of the business early on assisting with the bookkeeping.

Chris recalls being contracted to Caboolture Shire Council for an early job to document their water supply system and write up a set of water and sewer guidelines along with their standard drawings. When he tried to introduce some alternative arrangements for footpath service allocations/alignments, they decided to get someone else in to do the job. He quickly learned the challenges of bringing new ideas forward, and how important it was to combine technical skills with good communication.

At the end of 1994 Chris wrote a paper called 'Living Subdivisions'. It reflected his emerging engineering concepts for developing land in a more environmentally sensitive way, but 'sustainability' was not yet on the agenda of the time and no one was interested in publishing it. Nevertheless, this groundwork for sustainable development was to slowly emerge into the mainstream with Bligh Tanner as one of its technical leaders, something the company prides itself on to this day.

This year also saw both Chris and Rod follow up the early planning work Chris had done for the Begawan Giri resort in Bali when he was living in Singapore. The beautiful site was connected to a village above the Ayung River and the project became a once in a lifetime opportunity for the pair to create something extraordinary on a very challenging remote site. Led by Chris, they were responsible for all the engineering design services for civil and building works, including power and communications along with the construction phase supervision. "Our on-site supervisor was not only responsible for ensuring the quality of the concrete, which was hand-batched on site, but also for taking us surfing at Uluwatu during periodic visits!" Rod explains. The resort, now known as Como Shambhala Estate, is one of Bali's best. Chris and Rod's aspiration to continue working in Indonesia on high end projects came to an end with the 1997-8 Asian Financial Crisis.



ABOVE: Image supplied by COMO estates and resorts. Chris and Rod, aka the newly formed Bligh Tanner, completed all the engineering work (civil, structures, and services) for this esteemed luxury wellness resort.



ABOVE LEFT & CENTRE: The Begawan Giri resort during construction. ABOVE RIGHT: Image supplied by COMO estates and resorts. The Begawan Giri resort, now known as the COMO Shambhala, was COMO's flagship Bali estate, and was completed in 1994.

1995–96

This period saw Chris complete the Mango Hill Griffin masterplan for Pine Rivers Council. This proved to be a significant project as the local Councillors were environmentally aware and keen to promote 'green' principles. The Bligh Tanner masterplan presented concepts for stormwater swales, working with topography, and keeping trees where possible rather than using pipes to import water and bulldozers to re-shape the land—some of the concepts Chris had written about in his earlier paper, 'Living Subdivisions'. Strangely, on review of the early drafts of this masterplan, one of the local landholders who was on the community reference group had all the trees on his land mysteriously die literally overnight not long after the draft was presented, opening up much more of his property to development!

TECH TALES: *Bligh Tanner started business at the burgeoning of the dot.com movement. Digital uptake in this period was rapid and hugely transformational to the way business functioned. Rod remembers some of the technological challenges: "The fax machine was our friend and foe in the early years; our friend when it enabled rapid communication of sketch ideas with architects and clients from Bali to the Sunshine Coast and beyond, but our foe when it repeatedly jammed. It wasn't until the ability to scan to pdf came into wide use that it was finally put to bed. Before email, private intra office communication between Chris and myself was silently conducted by passing notes to each other on paper, an effective system that we could never imagine evolving. This didn't last for too long, as an early IT provider set us up with email, but it was some time before we used it to communicate with each other—why would you!" Chris recalls brick-like mobile phones were also adopted in the early years, allowing for more regular and easier client contact: "...a bit of a pain to cart around, but made us feel like real business people!"*

For more on Bligh Tanner's tech developments see pages 64–7.



2nd PREMISES: Wandoo Street, Fortitude Valley.

Bligh Tanner outgrew its first office space and by 1995 it was time to move on. The team initially shared a space with Parish Clarke Architects (lead architects on the Church Street Housing project) in the Wandoo Street building—one of the iconic old Woolstore buildings—later moving into their own separate space in '97. Wandoo Street had an interesting history. It had been a gambling den and place of various other illegal activities in the '70s and early '80s. The old gambling table was cut up and repurposed into Bligh Tanner's new reception desk. The office space overlooked the Coca Cola bottling factory, and had the novel aspect of having an exposed roof with no ceiling; this architectural feature has followed the company through each of its accommodations since that time.

The first high speed CityCat service begins in Brisbane.



1997

A resonant project for Chris was the Gunnin Road Subdivision in Fig Tree Pocket for Harry Knowlman and Elisa Swindon. Harry and Elisa wanted to present land with a park-like appearance; saving and working around trees was fundamental to their approach. This required considerable negotiation with Brisbane City Council (BCC) as many of their guidelines had to be relaxed to achieve this. The project was also the start of a new way of working with stormwater as Bligh Tanner introduced a very early form of a bio-retention basin at the outlet to the piped stormwater system. The project presented so well that BCC adopted it as a model for the Fig Tree Pocket neighbourhood plan. The project approach was negotiated with the Senior Council Engineer Con de Groot, and again this was the start of a long association (in 2017 Con is now the Director - Technical Services for Economic Development Queensland, a group for whom Bligh Tanner supplies expert engineering services on an ongoing basis).

This year also saw Bligh Tanner complete all the challenging civil engineering for the Inghams Chicken processing facility at Murarrie which was the start of a longer-term business relationship with Inghams and the main contractor, Badge Constructions.

1997 marked the beginning of a ten-year journey on South-East Queensland's busway network. With a referral through the membrane structure industry, Rod was asked by Derek Trusler of Woods Bagot Architects to help develop a concept design for future stations that would fit into a variety of urban and suburban locations. Derek Trusler then left Woods Bagot and worked out of Bligh Tanner's Wandoo Street office as the team completed a combined architectural and structural Station Design Manual. With a dedicated route alongside the South-East Freeway, this work quickly developed into the commission for ten stations—Bligh Tanner's largest project to date. Bligh Tanner sub-contracted five of the stations to Bonacci Winward, with the successful collaboration underpinned by the close relationship between Bonacci's Scott Woolcock and Rod. Collaboration with likeminded companies has remained an important aspect of the success of Bligh Tanner in 'punching above its weight'. However, the necessity to enlist external resources on the project did accentuate the need to expand the business.

In 1997–8 the Asian Financial Crisis gripped much of East Asia, with Indonesia, Thailand and South Korea strongly impacted.



ABOVE: RBWH Busway Station and Cycle Centre upon completion.



BELOW: Langlands Park Busway Station upon completion.



1998–99

Chris teamed up with Tony McAllister from WBM and John Wright from Hassell to complete a seminal study for BCC on a model subdivision that would manage water so that there was 'no worsening' or 'zero impact'. The group then took this engineering technology forward into a new project called Carindale Pines. This became the first estate in Queensland to install rain tanks at each of the homes, and to use swale drainage for stormwater. The engineering also pioneered the use of XP SWMM, a proprietary software package that enabled modelling of advanced water sensitive urban design practices and an ability to optimise stormwater infrastructure. This gave Bligh Tanner a competitive advantage over other consulting engineering firms, still enjoyed to this day.

Following on from this Chris teamed up with Tony McAllister from WBM again to work with Chris Walton and Colin Bear on an early feasibility analysis for the Currumbin Eco Village. Chris and Colin's goal was to develop the world's best eco village, though difficulties with land purchase meant the project was delayed for a couple of years. Meanwhile, 'sustainable development' was becoming a buzz word. Bligh Tanner started doing some projects with Pike Mirls McKnoulty (PMM), such as The Farm at Payne Road, The Gap. And similarly, with Place Design the team worked on a large subdivision at Sunnybank. Both of these projects were at the forefront of sustainable water management and went on to win state awards. The relationships with PMM (now RPS) and Place Design have continued to this day.

During this period of the later '90s, Bligh Tanner became recognised leaders in two specialised fields of structural engineering: architect-designed houses and membrane structures. It was a period when Queensland architecture was developing a style of its own and Bligh Tanner was the trusted partner of many architects developing ways of using materials to suit the new forms—many projects being the architects' own homes.

In the company's very early days, Bligh Tanner had forged a close relationship with Peter Kamols of Kamols Membrane Structures/Shade Structures Pacific through collaborating to develop fabric structure technology. This fabric structure work, supporting design and construct fabricators, peaked in the late '90s with Bligh Tanner servicing clients in a variety of locations including Singapore, Hong Kong, the Middle East, the U.S., the Philippines, Brisbane, Sydney and the Gold Coast. Projects included major temporary structures for the Sydney Olympics, the Museum of Melbourne amphitheatre, and a Falcon Training facility in Jordan. Increasingly, the work was done under extreme pressure; activities such as satisfying review authorities in typhoon-prone Hong Kong, fabricating membrane skins from Bligh Tanner's cutting patterns to meet shipment timetables, and providing steel shop details to exactly match the fabric panels which were to be installed on sites around the world, were moving Bligh Tanner away from its core engineering practice.

2000

The development of the analysis and design techniques for membrane structures and the emerging paradigm for water management were new ground and hard work, especially when combined with the pressures of young families. Rod and Chris were frequently partaking in 3am sessions while in the process of developing this technology, and there was plenty to worry about since the company was pioneering this work in the absence of relevant guidelines. This trust in first principles engineering continues to be a hallmark of the practice.

After much deliberation, Rod (with Chris's support) decided to withdraw from this specialist fabric engineering market to better concentrate on institutional projects with architects, a focus which remains at the heart of the business. This was significant, especially considering that Bligh Tanner had even developed their own fabric cutting pattern programme with Keays software. These days, Bligh Tanner only undertakes occasional special projects in this field such as the installation of bird exclusion netting over tidal canals at Brisbane Airport. But capability in the design of lightweight cable and membrane structures remains valuable in the company's ability to innovate and explore all design options.

These later years of the '90s also saw Rod working on a number of modest scale new buildings for Greenslopes Private Hospital with Stephen Coffey Architect. Following privatisation of the hospital in 1995, the new owner, Ramsay Health, planned a major expansion to commence in 2001. The scale of work presented Bligh Tanner with a significant challenge and opportunity.

Rod and Chris had been working on developing a strategic plan, BT2000, which had alternative paths of contraction or expansion. The contraction option was nicknamed 'The Mango Tree' option, referring to a studio Rod envisaged under his backyard mango tree. Their external business adviser, however, recognised the significant opportunities at play with the expansion option and pushed hard for the two to capitalise on them!

"The evolution of Bligh Tanner over 25 years has been defined by our seeking project opportunities, clients and collaborators who have sought to work with us, and by people who have been attracted to work in the business. We have always had a vision for the business as one that provides a platform for talented people to grow their careers in, and we believe that has transpired."

Rod Bligh

2001

Paul Callum had first met Rod at The University of Queensland in the early '80s when they studied a couple of subjects together. Later, their paths crossed again when they both worked for Arup in Brisbane, and they became friends. Paul stayed at Arup when Rod went overseas to do his Masters but they kept in touch. Over the years that followed, as Rod and Chris developed Bligh Tanner, Paul developed his experience at Arup running major structural projects such as the Brisbane Convention and Exhibition Centre. As his career progressed, he was spending increasing amounts of time out of the country and away from his wife, Lee, and their young family. "Travelling to visit me in Hong Kong while she was three months pregnant and with a three-year-old in tow was unsurprisingly not her idea of fun!" Paul recalls. So, with Paul's overseas travel schedule wearing thin, and Rod and Chris's need for another Structural Engineer to manage the Greenslopes Hospital job and help develop the business, the planets aligned for Bligh Tanner's growth. Rod and Chris invited Paul to join them and their five staff at their office in Wandoo Street.

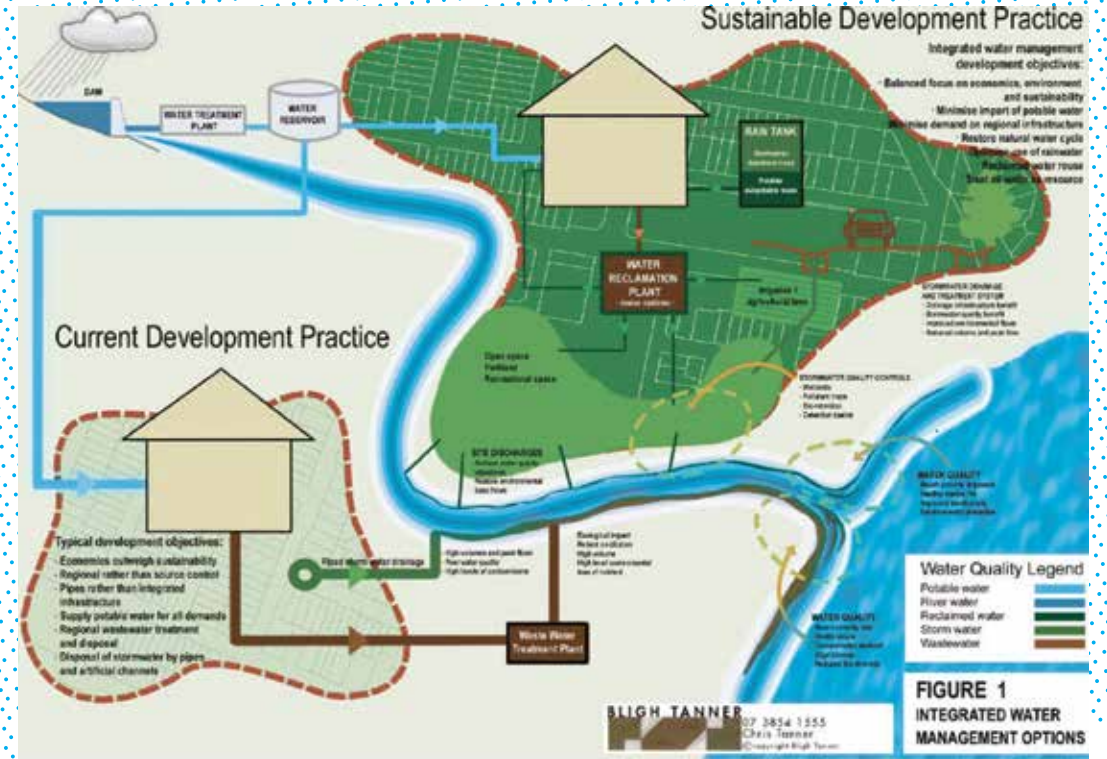
Paul jumped at the chance—the offer was for equal partnership (this equality between all owners persists to this day). At this time the group also planned for a fourth shareholder in the near future, mutually acknowledging the need for an expert in integrated water management to support Chris's work with sustainable land development. But first things first; the next task was for Paul to start earning his keep by delivering the Greenslopes Hospital project and working with Rod to bring in new clients and projects. Looking back, Paul considers joining Bligh Tanner "the greatest professional decision of my career".

"Bringing in new clients is often a slow process that starts with getting an opportunity to complete a small task, then gaining the client's confidence to be given more and larger tasks. It can take many years to develop trusted relationships. The University of Queensland was one where Rod and I knocked on their door over many years until we finally got a small opportunity. They are now a major client of the company but it was not achieved quickly."

Paul Callum

Many early clients are still very close to Bligh Tanner and engage the company across all disciplines. This upholds one of the group's fundamental philosophies, being to deliver a high level of technical engineering through personal relationships that create strong collaborative outcomes and the desire to keep working together.

A few of these longer-term clients stemming from the early days include Phillips Smith Conwell, Brand and Slater, BCC, w.i.m. architects, Mark Jones architects (later Architectus), m3architecture, Pike Miris McKnoulty (PMM)/RPS Group, Place Design Group, UQ, Buckley Vann Town Planning, Tract, Lat 27, Riddell Architects/Conrad Gargett, BVN, Fulton Trotter Architects, Push, Bligh Graham, Tim Bennetton and Hassell.



ABOVE: Chris's early design concepts for sustainable water management.

Bligh Tanner also still looks after the Ramsay Health Group and now designs their projects at five other sites as well as Greenslopes Private Hospital (Ramsay Health has provided well over \$250M worth of projects to the business over the intervening years). There are many long-term clients to whom Bligh Tanner is extremely grateful (it is certainly not limited to those listed here).

Amid this year of growth and change, the Currumbin Eco Village overcame its land purchase difficulties and got underway, with Chris completing the feasibilities, concept development and lodging applications for high-level approvals. This started a relatively long period of negotiations with Gold Coast City Council. The project would go on to become one of the most celebrated land development projects in Queensland.

"These applications would often draw a first response from the authorities along the lines that it didn't meet their guidelines and it wouldn't be approved. Though what I realised was that the authorities didn't yet fully understand the new engineering concepts. By working closely with them to develop their confidence in our work, and clearly explaining the environmental benefits that would accrue, we were usually able to obtain an approval."

Chris Tanner

ECO VILLAGE AT CURRUMBIN



The vision of the community's creators was to develop: "a world leading ecologically sustainable and conscious community where people and nature flourish in beauty, harmony and integrity". Set in the Currumbin Valley, the southern hinterland of the Gold Coast, the community would be a mixed-use village made up of 147 diverse lots over 270 acres of land, all underpinned with the best socially and environmentally sustainable design principles. In 2017, the Eco Village at Currumbin is working well and has won over 33 accolades for its design and leadership in sustainability. One of the most notable of these was the esteemed 'World's Best Environmental Development 2008' Prix d'Excellence Award from the International Real Estate Federation (FIABCI).

"The Eco Village was unique because of the owner's goals. Nothing would be compromised to achieve them, and we did, I believe, seminal work on lifecycle and environmental analysis for different approaches to land development engineering, resulting in our development of the 'Sustainability Carbon Index (SCI)'.

The SCI stemmed from client questions such as "What is better, a windmill powered pump or an electric pump?" In this example, the former needed to be a large steel structure (about 20m high) so that it could reliably deliver enough power. Or an electric powered pump with a constant draw on mains power. The SCI summed up the carbon footprint of all inputs to the various infrastructure options under consideration, including materials, labour and energy. Over a typical lifecycle it applied the going rate for carbon and added this to the capital costs. It was a great way of distilling the answer to questions like the above example into a single determinant, and often provided clarity." Chris Tanner

ABOVE LEFT: An eco-village home.

ABOVE RIGHT: Aerial view of the Eco Village. Image courtesy of the Eco Village at Currumbin.

Bligh Tanner pays its respects to Eco Village founder Chris Walton, whose life was cut short in 2012.

2002-03

By this stage, business was booming and there were projects on the boil left, right and centre. From a land development point of view, projects such as The Farm (The Gap), the Sunnybank sub-division, and many others were constructed, sold, and became living estates. Chris and the team obtained the high-level approvals for the Currumbin Eco Village, progressed detailed engineering plans and negotiated further approvals. Bligh Tanner was now often working with many of Brisbane's landscape architects and town planners on smaller-scale projects, largely because they'd developed a reputation for taking a sensitive approach to the environment and for being good collaborators with a high standard of work.

From a structural perspective, the Greenslopes Hospital expansion was in full swing and taking up considerable amounts of Bligh Tanner's time and energy. This \$20M project helped develop an enviable reputation for completing increasingly larger jobs and more complex multi-disciplinary work. The relationships forged at this time with Ramsay Health and Phillips Smith Conwell architects have strengthened, and some 15 years later, in 2017 alone, account for over \$80M of projects.

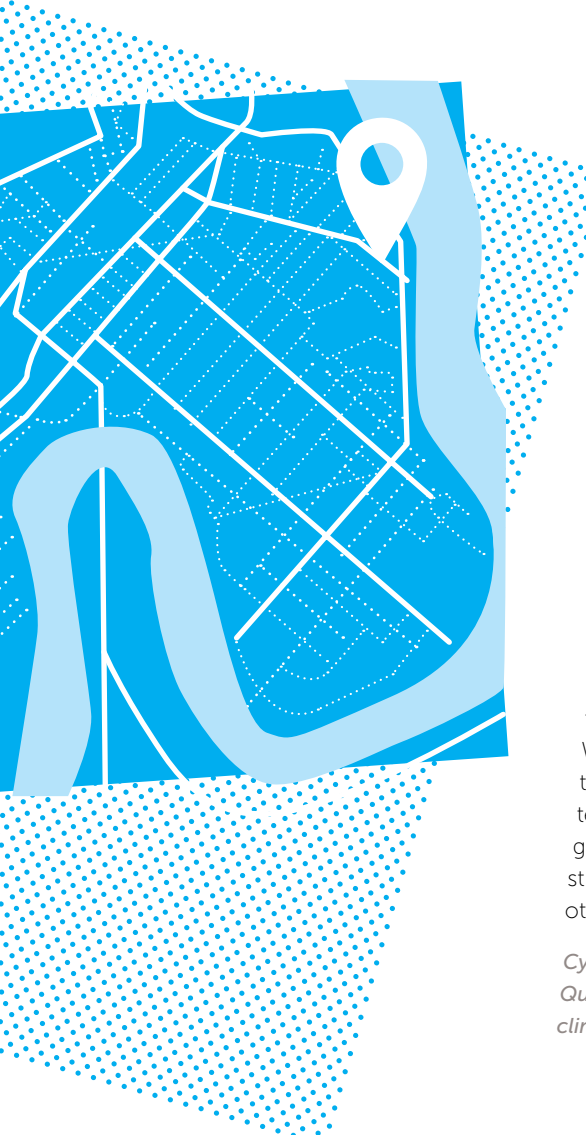
It was intended that Bligh Tanner's movement toward key institutional clients and larger associated projects would enable the company's work to become a significant part of the built 'fabric of Brisbane'. Of course, larger projects resulted in an ongoing increase in staff numbers and the realisation that growth had its own perils, such as increasing management responsibilities.

There were many discussions around the desire to keep the structure of the company flat and fluid, and to minimise growth. This led to an ongoing agreement between the Directors to only grow by another five staff, maximum. This maximum became a maxim—'just five more'—and continues to this day!

Around this time, the concept of staff profit share was born. While it has been through numerous alterations in detail, the distribution of 10% of profit to staff has become an important aspect of the culture of the company in recognising the valuable role all staff play in the success of the business, and rewarding everyone appropriately.

With Paul Callum now established in his leadership role, it was time to bring in the fourth Director that the team had planned for. In late 2003, they invited David Hamlyn-Harris to come on board as Director of Water and Environment. David knew Rod through mutual friends and a shared interest in a bush block near Mount Barney, and he also knew Chris.

Having studied in Brisbane, David left to spend six years with the Northern Territory Department of Transport and Works. From there, he spent around 17 years with GHD, predominantly in Sydney and only later returning to Brisbane. David had been aware of Bligh Tanner as a small up-and-coming consultancy for some years and shared Chris's interests in sustainable development.



3rd PREMISES: Florence Street, Teneriffe. Eventually the gentrification of the Teneriffe area resulted in Bligh Tanner's humble old Wandoo Street Woolstore building being converted into fashionable, new warehouse apartments. Bligh Tanner was evicted and started the search for new lodgings. The team loved the area and had grown used to the heritage style of building, and they soon found a similar space on Florence Street in the same area. They set up on the ground floor as the projects and staff numbers slowly grew. But during the first summer in the new office, rain water flooded the ground floor, coming down through the blocked internal gutters in the old saw tooth roof. The team were offered a larger space upstairs (again without a ceiling) which they embraced. This happened to be above the small architectural practice of Parups Waring. There were frequent trips up and down the stairs to progress projects with them and the Bligh Tanner team grew most enamoured with the benefits of working geographically close to their clients. In 2017, Bligh Tanner still has many clients within walking distance, and many others just a few 'Go Card' stops down the road.

Cyclone Beni causes flooding and damage in South East Queensland. Meanwhile, environmental awareness around climate change is continuing to gain momentum...

2004

David took up the new role of Director of Water and Environment: "Joining Bligh Tanner was a great opportunity for me to break away from a very large old consultancy and to take a more significant role in a much newer and more intimate team. It was also an opportunity for me to focus on smaller scale, more innovative, integrated water management projects, which has been my main area of professional interest."

At this point, Bligh Tanner's staff count was sitting at about 15. Projects were ticking along nicely. With a Director team of four, and part of their Florence Street building having recently been turned into residential apartments, it seemed a wise move to invest in their own premises, becoming their own landlords, and ensuring their longer-term stability.

"Bligh Tanner took its shape as a civil, structural and environmental consultancy focussing on key areas of expertise. The creation of the business had strong personal friendships at its core and this has proven to be an enduring strength, with responsibility shared equally and mutual respect carrying the team through all ups and downs."

Rod Bligh



ABOVE: The Bligh Tanner team in the upstairs office at Florence Street.

2005–07



4th and current PREMISES: Wickham Street, Fortitude Valley. In 2005, the Director team bought and moved the business to Level 9, 269 Wickham Street (then known as K-Tower), Fortitude Valley, and swiftly renovated the space to suit their needs. The floor had previously been let out as serviced offices and was divided into some individual office spaces. When they demolished the old partitions, the suspended ceiling came down as well, creating the opportunity to have a more industrial finish, and carrying on the distinctive tradition of their past office fit-outs. It is often the case that visiting architects love the look of it, while visiting engineers are inclined to ask when the work will be finished.

These years saw Queensland enter a period of drought (in retrospect referred to as the 'Millennium Drought'). It became progressively worse until South East Queensland was critically short of water. However, the drought created a range of opportunities to develop innovative water supply systems, and state and federal funding supported that. The Queensland Water Commission (QWC) was formed, with relatively wide-ranging powers to deal with the situation. Similarly, the Urban Land Development Authority (ULDA) was formed by the State Government to break through some of the red tape and activate progressive and innovative development.

Work continued apace. From a civil and environmental perspective, Bligh Tanner worked with the QWC around the multiple uses of stormwater, methods for assessing the Government's portfolio of water projects, and assisting with other projects. Bligh Tanner also wrote the Operational Works (detailed engineering) Self Certification Manual for the ULDA. The Eco Village was constructed and went on to win many awards. Also, the South Bank Rain Bank project was conceived and designed in 2007. (The build was completed in 2011 and the project would go on to win the Queensland Premier's Sustainability Award in 2012.)



LEFT ABOVE: The Wickham Street office current interior fitout

LEFT BELOW: The Wickham Street office more recently after an external refurbishment.

SOUTH BANK RAIN BANK STORMWATER HARVESTING SCHEME



The South Bank Rain Bank stormwater harvesting scheme was designed in 2007 to provide future drought resilience for the South Bank Parklands, a hugely popular public leisure and tourism location. A key requirement of the funding for the project was to provide a strong interpretive element so that the public could see how it worked and what it achieved. For example, a glass wall to the water treatment plant room allows visitors to look in at the treatment systems, aided by relevant information signage to help them understand what it takes for public spaces to operate more sustainably.

Guided by David Hamlyn-Harris, Rain Bank was conceived and designed in 2007 and completed in 2011, coming on line in 2012 and operating successfully ever since. It takes stormwater runoff from a South Brisbane catchment, plus backwash water from the South Bank pools, then stores and treats it suitably for irrigation around the parklands and for use in water features. In 2012, the project won the Queensland Premier's Sustainability Award.

Uniquely, it is Bligh Tanner's only project to date to be officially opened by royalty—Queen Elizabeth II.

*ABOVE: The South Bank Rain Bank during construction.
BELOW: Queen Elizabeth II officially opening the South Bank Rain Bank stormwater harvesting scheme in 2011.*



Along with these successes, Bligh Tanner was mindful not to rest on its laurels and tried to actively build new relationships and market its services. In 2007, the company showed a Japanese delegation around some recent projects, not knowing where it might lead.

High regional growth during 2005–7 gave impetus to development in areas that were not serviced with traditional water supplies and sewerage systems, and needed to be self-sufficient. As well as the Eco Village at Currumbin, Sunrise at 1770 was another innovative residential development Bligh Tanner worked on. Similar to the Eco Village, Sunrise at 1770 aimed for the highest standards of sustainability and achieved water self-sufficiency by treating and reusing its wastewater on-site and harvesting roofwater for drinking.

From a structural perspective, the Sunrise project incorporated numerous complex structures including fully suspended pools, multi-level dune-perched residences, resort style complexes, and simple life guard lookouts, all on unstable ground and in full cyclonic exposure.

Meanwhile, work continued on further Ramsay Health Hospital expansions and the \$45M Queensland Emergency Operations Centre (QEOC) in Kedron which Bligh Tanner had secured the civil and structural contracts for. The QEOC was an important project for Queensland since it was the new base for coordinating flood and other disaster efforts. In a similar manner to the evolution of Ramsay Health as a major client from modest beginnings, the QEOC project resulted from the relationship with Mark Jones Architects and subsequently the ongoing relationship with Architectus after the two firms merged. The QEOC project became the largest in the company's history and precipitated more growth as the resume of quality projects grew.

Business maintained steady growth and in 2007, Rod and Paul interviewed Paul Easingwood on Skype from his home in York in the UK. Paul had a strong engineering background having worked as a Business Unit Manager and Director for the northern England companies BWB Consulting and KMN group. Rod and Paul managed to entice Paul Easingwood and his family to Brisbane ready to take up an initial role as Senior Structural Engineer in the new year, though all were hopeful that in due course he would move into a leadership role as the third Director of Structures.

"As a Director of a mid-sized UK consultancy with around 200 staff I found myself increasingly absorbed by non-engineering tasks, which inspired a job search further afield. Having made the decision to emigrate with my family in 2008, I spent a lot of time researching locations and companies in Australia. I received some offers including one from a small boutique consultancy in Brisbane, Bligh Tanner—this one really piqued my interest. After two early morning skype interviews with Rod and Paul, dressed in a mixture of pyjamas, a shirt and tie (me that is!), my gut feel was that Bligh Tanner was the right choice. The appeal of working alongside experienced engineers in a small team, on innovative and challenging projects, with limited bureaucracy, whilst boxing well above their weight on the scale and level of project recognition, were all positive draws and reaffirmed my decision. Now fast approaching ten years after landing at Brisbane airport in December 2007 (it also being my first visit to Australia), I am very pleased I relied on my gut instinct—we have a fantastic team here!"

Paul Easingwood

The previous ten years of confidence, growth and prosperity, however, were about to come to an end with the onset of the Global Financial Crisis (GFC).

The Labor Party takes the reins of Federal Government from the long-standing Howard Liberal Government.

Queensland's Gallery of Modern Art (GOMA) opens in Brisbane's South Bank Precinct.

2008



When Paul Easingwood joined the company as a Senior Structural Engineer he focused on developing and strengthening relationships with educational clients and architects. This proved to be particularly important groundwork given the onset of the GFC. The previous ten years of prosperity had prepared Australia better than most countries, but this merely postponed the full impact of the GFC and Bligh Tanner was not immune; difficult times were on their way.

On a more positive note, the GFC was the catalyst for some government financial stimuli, primarily in thousands of small education projects. Since Bligh Tanner was already active in this sector, particularly working with Catholic Education institutions, the stimuli offered the potential for new work. Government stimuli was also directed toward projects relating to the water and environment needs created by the Millennium Drought.

Due to the group's reputation in sustainable land development and water management, Bligh Tanner was appointed as engineers to a residential development on Keswick Island, in the southern part of the Whitsundays.

As well as this, the Japanese delegation from 2007 returned, this time accompanied by a large Japanese corporation wanting to invest in a breakthrough project in Queensland to test the limits of water reuse technology. They had selected Queensland because of the state's reputation for advanced engineering skills in water management. Bligh Tanner introduced the Japanese to the ULDA, undertook feasibility and concept development studies, assisted both parties to obtain Federal Government grant funding that was available for new water projects, and the Fitzgibbon Potable Roofwater Reuse (PotaRoo) project was born. Coincidentally, the QWC was interested in developing a demonstration stormwater harvesting scheme in South East Queensland and Fitzgibbon provided the right opportunity for that. So, the PotaRoo was developed in parallel with the separate, equally innovative, Fitzgibbon Stormwater Harvesting (FiSH) scheme.

ABOVE: Bligh Tanner welcomes back the Japanese delegates who return to invest in innovative water reuse projects. In this photo, Bligh Tanner hosts the delegates at an AFL game.

FITZGIBBON CHASE



The Fitzgibbon Chase project has been recognised internationally as a new model for hybrid centralised/decentralised water supply systems. Guided by Chris Tanner, Bligh Tanner has created an innovative new water management model for a 114 hectare housing community in Brisbane that allows its water supply to grow as its population increases. Recent drought, combined with population growth, has increased the need to improve water security in Australia and to explore sustainable alternative water supply solutions.

The Fitzgibbon Chase project features a non-potable stormwater harvesting system (the FiSH) and potable roofwater harvesting system (PotaRoo). The FiSH diverts, filters and disinfects urban stormwater runoff to supply non-potable water for irrigation, toilet flushing, laundry and outdoor uses. The PotaRoo harvests roofwater from approximately 500 homes in Fitzgibbon Chase, which is pumped to a central water treatment plant to produce water of potable quality. Together, the FiSH and PotaRoo are estimated to achieve a 60% savings on normal mains water use.

ABOVE (L – R): *The Fitzgibbon Stormwater Harvesting (FiSH) scheme.*

Key US Financial Services firms collapse in 2008 triggering a global economic downturn and marking the onset of the Global Financial Crisis (GFC). With market uncertainty rife, banks reined in lending, demand plummeted globally, and employment and trade decreased. Governments initiated stimulus packages to keep things afloat, some more successfully than others (such as Australia). But the effects of the GFC were long-term and continue to affect global economic activity today.¹

At this time Bligh Tanner started to win numerous jobs working for educational sector clients. Work also continued on larger projects in the private health sector with Phillips Smith Conwell. Bligh Tanner's high level of design expertise was also being reflected in the world of art. The company was engaged to develop the large memorial 'The Tree of Knowledge' in Barcaldine with m3architecture, as well as for individual commissions with established artists such as Barbara Heath.

¹ "Global Financial Crisis", <http://lowyinstitute.org>, accessed 20 March 2017.

THE TREE OF KNOWLEDGE



The Tree of Knowledge Memorial provides a replacement canopy and enclosure for a significant, heritage-listed ghost gum whose iconic location is regarded as the birth place of the Australian Labor party. Sadly, in an act of vandalism the gum was poisoned and subsequently died in 2006. As part of the memorial project, the gum underwent a thorough preservative treatment and was then returned to its original location in the form of sculptural remains of the original tree. Led by Paul Callum, Bligh Tanner was responsible for the structural design and documentation of the Tree of Knowledge memorial, which involved significant collaboration with the architects from m3architecture and Brian Hooper, to ensure all detailing was sensitive to their design vision. At over 18 metres high, the structure includes approximately 4000 hangers and timber elements of varying length, with a glass roof and stainless clad primary roof trusses. Constructability was carefully considered in the design, especially due to the remote location. The outcome was a resounding success, with the structure being completed in time for its official opening in May 2009. Rising above the streetscape, the memorial canopy structure ensures that the iconic tree remains a significant, nationally celebrated Barcaldine landmark.

LEFT: The Tree of Knowledge Memorial lit up at night in Queensland's outback town of Barcaldine.

..2009-10.....

From early 2009, partly stimulated by the government's funding support of building schools for the future, and partly resulting from Paul Easingwood's efforts to strengthen existing relationships as well as build new ones, Bligh Tanner started work on many school building projects in conjunction with Fulton Trotter Architects, and Brand and Slater Architects. In this period, the company developed rewarding and productive relationships with diverse education clients such as Hillbrook Anglican School, Catholic Education, Churchie, St Aidan's Girls School, St Margaret's Girls School, and Ormiston College, to name a few.

From a civil and environment perspective, the Fitzgibbon projects dominated the next couple of years. Multiple approvals were needed from both local and state governments. Along with this, the construction of new technology required careful work between Bligh Tanner, its clients and contractors, to achieve the desired outcomes. Other work was emerging with the Environmental Protection Authority (EPA) writing guidelines for decentralised wastewater management, and the Healthy Waterways Partnership writing guidelines for Stormwater Harvesting and Multiple Use Open Space. From a structural perspective, the Global Change Institute (GCI) at the University of Queensland (UQ) in St Lucia was a career highlight for all who worked on it. The project cemented Bligh Tanner's reputation for delivering larger, complex buildings with a clear ability to innovate and add value.

THE GLOBAL CHANGE INSTITUTE (GCI), UQ

The GCI is a collaborative hub that combines diverse resources from across the UQ campus to work toward finding solutions to global challenges such as climate change, technological innovation and increasing population. It is Australia's first carbon neutral public building, achieved with the philosophy that the building 'lives' and 'breathes' like a natural organism.

Guided by Rod Bligh, the Bligh Tanner Structures team collaborated with Hassell to produce a pioneering structure. Stainless steel framed vertical shades track the sun's daily path and react to the seasons and daily forecasts. The building 'breathes' by moderating its internal temperature via natural ventilation for 88% of the year.

Breezes are 'inhaled' via walls of glass louvres which then flow through the steel framed central atrium, and are flushed out through a thermal chimney. The atrium is framed by a steel 'forest' that reaches toward a view of the sky through an arching Ethylene Tetrafluoroethylene (ETFE) fabric canopy.

The project was recognised with many awards including the national BPN Innovation Award, national Concrete Institute and Steel Institute awards, and the Institute of Architects national award for sustainability. The world first use of geopolymer concrete (zero Portland cement) was an initiative of Bligh Tanner's that became a major element of the global sustainability story.

The team was honoured to receive recognition from the inventor of geopolymer concrete via a letter to the Director of the GCI.

Dear Prof. Ove Hoegh-Guldberg,

Please accept my warmest congratulations for your new GCI building. I was really pleased when I learned several weeks ago that this building was the world's first building made with structural Geopolymer Concrete. My invention of Geopolymer Cement and Geopolymer Concrete goes back to the years 1983-1985 and started to be studied in the years 2000 in Australia. So, it took, 30 years to get through all the obstacles.

Again, thanks for this milestone in the development of geopolymer science.

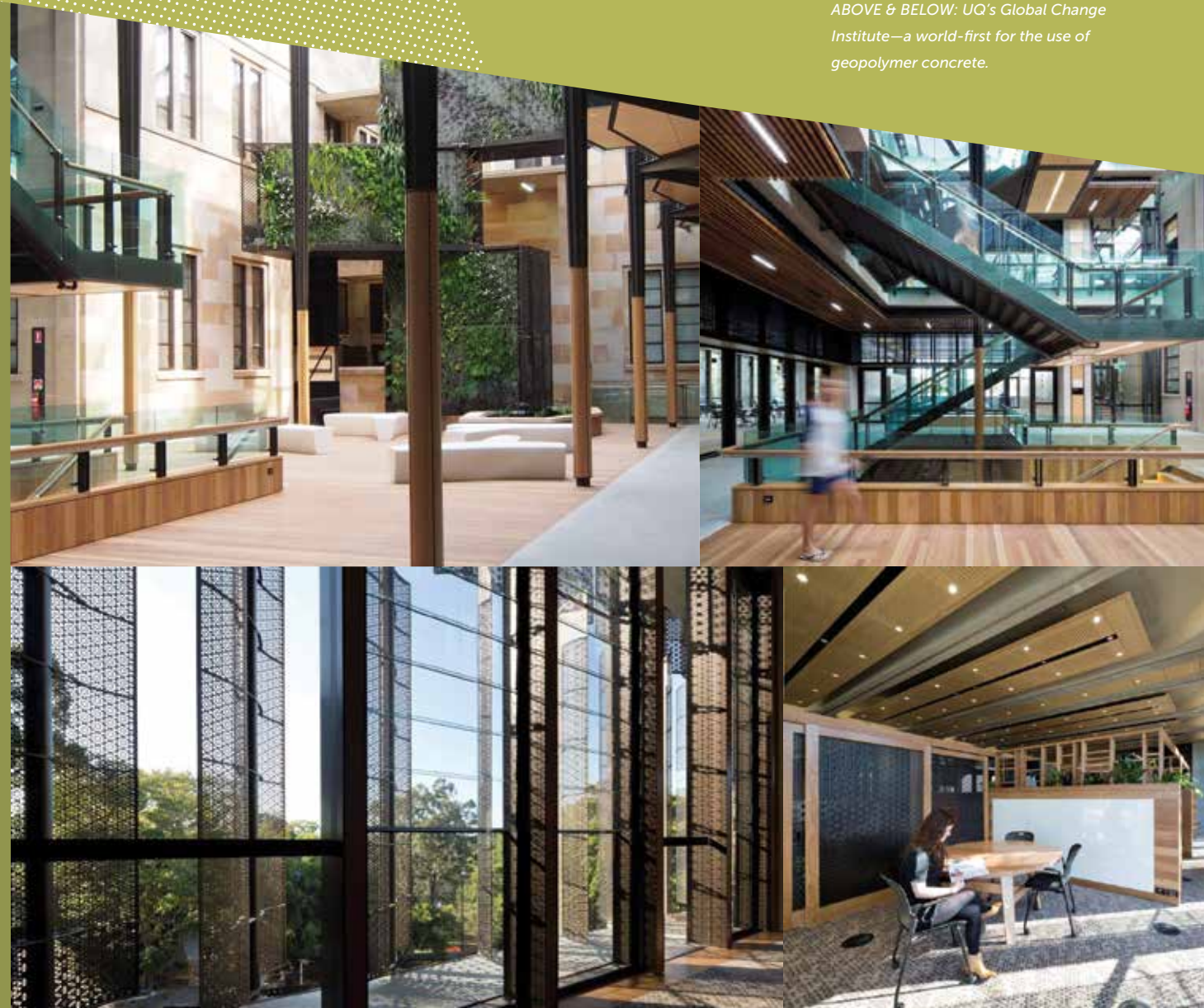
Bien cordialement

*Prof. Dr. Joseph Davidovits
Géopolymère Institute
16 rue Galilée
F-02100 Saint-Quentin, France*

The GCI strengthened Bligh Tanner's relationship with UQ who engaged the business for subsequent projects including the UQ Masterplan, the Goddard Building extension, the Forgan Smith building, and (at the time of writing in 2017) current involvement with the Student Union Precinct. As well as this working relationship with UQ, Bligh Tanner has been pleased to attract some of the best and brightest graduates from the university!



ABOVE & BELOW: UQ's Global Change Institute—a world-first for the use of geopolymer concrete.



Another notable project commissioned in late 2010 was the rooftop extension to the UQ Goddard Biological Sciences building, part of the renowned Great Court at UQ. Led by Paul Easingwood, this innovative project encompassed many of Bligh Tanner's key strengths. The existing three-storey building required a detailed forensic investigation to ensure that it could support an additional level on the roof. A lightweight structure with a bespoke copper façade screen respectfully integrated the new serviced accommodation with the original 1950s heritage-listed, sandstone-clad building.

In addition to the forensic investigation, the UQ Goddard project included detailed structural and facade design, and one of Bligh Tanner's most detailed and expansive uses of BIM (Building Information Modeling) to date (BIM being an intelligent, multi-dimensional model-based process to create and manage all project information before, during and after construction). The project was meticulously detailed in Revit to 5D BIM standards. Using additional clash detection software, Bligh Tanner ensured there were no site issues around the significant servicing of the building. This servicing included PC3 laboratories' flues and ventilation routed through a complex arrangement of structural steelwork, all enveloped in innovative composite sheeting, energy efficient glazing and perforated copper screening. The standard of Revit BIM modelling and documentation produced for this 2010 project was well-received and respected by the entire design team, and is testament to Bligh Tanner's in-house team and BIM Manager, Simon Byng.



RIGHT: Full staff photo, early 2011. Since then Bligh Tanner's staff total has grown by around 10.

.....2011 (Crash!).....

Significant flooding occurred in many areas of Queensland in early January, after ongoing rain in late December 2010. The water crisis went from too little to too much and the state government declared 75% of Queensland a disaster zone. Additionally, in April a change of state government saw a significant reining in of government spending.

These environmental and economic challenges led to the Fitzgibbon projects slowing right down, while real estate development 'wobbled', and many projects that were in the pipeline simply disappeared. This was a very challenging time for Bligh Tanner (and more broadly speaking across the Queensland economy). The company was forced to think strategically and had to retrench some staff. As well as this, everyone accepted a temporary 10% reduction in pay.

During this uncertain time, Bligh Tanner carefully considered the business's future. Paul Easingwood, who had been promoted to Associate Director during 2010, stepped in to the role of the third Director of Structures. And the company made the strategic decision to invite two new experienced and specialised staff members into the civil arm of the business.

Cameron Riach joined the business in June of 2011. Chris needed a team member who could take the lead on traditional civil engineering enabling him to focus more on the sustainability/planning work that he was heavily involved with. The Director team was also keen to enhance their capabilities in their civil works for building projects.

Cameron and his family had previously migrated from the UK to Australia so that he could manage the civil team at the Robert Bird group. Joining Bligh Tanner, Cameron brought an impressive track record of successfully managing many small and large-scale projects in both countries, along with specialised expertise in temporary work for major civil engineering road projects.

"I had always felt that the key to delivering civil engineering design work successfully was to 'do it right the first time', and not to try and create economies by spending less engineering time in the design phase; yes, this would lead to lower costs during design, but it would also inevitably lead to mediocre designs that were not fully resolved, creating issues during construction... My view was that it would be far better to work for clients who valued the benefits that good civil design could bring, and to get sensible fees that enabled the work to be completed properly. How refreshing it was to meet with Chris Tanner and find out that Bligh Tanner had built a successful business and enviable reputation for 'doing it right the first time'. There was a clear alignment of views, values and ideals."

Cameron Riach

.....2012.....

"I'd been wanting to get back into design work after having spent several years in capacity building and policy development roles, and Bligh Tanner was clearly the best place to be to take on challenging and out-of-the-box water projects and have a real impact. Chris and David had been delivering some highly innovative projects, and the business had built up a strong team and were trusted by authorities to work at the leading edge of integrated water management. But, more importantly, there was a sense of integrity and ethics. I'd worked in a range of organisations and wanted to find a professional home where it felt great to go to work each day, where the values of the organisation resonated with me, and where I was working with exceptionally talented people. I got off to a wobbly start though—the GFC was biting hard and my first week in the business ended with the announcement of several redundancies. That experience has stayed with me and kept me focussed on ensuring we build trusted relationships with a range of clients near and far, and ensuring we have a talented and highly versatile team."

Alan Hoban

Alan Hoban joined the team in May of 2012. Bligh Tanner was keen to strengthen their profile in stormwater management, and Alan was a key player in the water industry. He had a strong background in the Water Sensitive Urban Design (WSUD) field having worked on innovative projects for businesses including Ecological Engineering, EDAW, AECOM and Healthy Waterways. Alan had also worked on diverse projects including in Thailand as an environmental advisor to the Government; in Singapore assisting with the development of the Singapore WSUD Framework; and in Melbourne where he was one of the founding Directors of carshare start-up Flexicar (subsequently sold to Hertz as their self-service Hertz24/7 business).

Both Cameron and Alan were a key part of Bligh Tanner's succession planning, and it was hoped that they would both move into Director/shareholder roles swiftly.

Even though times were tough, and 'on the ground' projects were hard to find, Bligh Tanner's experience and knowledge in water technology meant that the civil and environment team had some commissions with various local authorities, assisting them with developing stormwater guidelines and infrastructure plans for their Planning Schemes.

THE NOOSA FLEXI LEARNING CENTRE

“Queensland’s water industry went through a remarkable period of innovation around 2006–11, fuelled by the needs of the drought and the financial stimuli borne of the GFC—Bligh Tanner played a significant part in that. In 2011–12 it suffered setbacks with the end of the drought and the shift in emphasis from water supply security to flood security, the ongoing global financial troubles, and political change in Queensland. All of these have contributed to refocusing towards cost-conscious water solutions and better ways to meet environmental outcomes, rather than on water security. It was interesting to experience how a severe drought invigorated the water industry.”

David Hamlyn-Harris

Challenging times called for reflection around Bligh Tanner’s positive differentiating factors; what were the things that really set the company apart? The company’s reliance on institutional projects, and long-term relationship building with key clients and institutional organisations were (and continue to be) two strong differentiating factors. The loyal support of many educational clients provided an important stream of work from 2009 to the current time, and no doubt assisted Bligh Tanner through the difficult period of the Australian strain of the GFC in 2011–12.



In 2012 Bligh Tanner was invited to work with long-standing collaborators Fulton Trotter on the Noosa Flexi Learning Centre for Edmund Rice Education. Completed in 2014, the centre offers a welcoming and distinctly non-institutional learning environment for youth who are falling through the cracks of the traditional school system. The project was an integrated company effort, combining the broad range of skills of the structural and WEILD teams. Bligh Tanner strived to apply its full scope of learning about environmentally sensitive design and integrated water management into this project to create a truly special place for these youths.

The innovative, cost-saving design of the Noosa Flexi Learning Centre preserves significant vegetation, and includes buildings that are raised on piers, avoiding impact on tree roots and preserving the site’s natural hydrology. The centre exceeds all stormwater management design standards while avoiding stormwater pipes; roof water is harvested and reused wherever possible, with excess infiltrated into trenches under buildings between the footings. A fully permeable pavement was used for the carpark, which further minimises stormwater runoff.

The school was awarded ‘World’s Best New School’ by Learning Environments International. It also won the award for ‘Excellence in Integrated Stormwater Design’ from Stormwater Queensland in 2014.

LEFT: The elegant low-impact centre showed that quality, environmentally sustainable designs can be cheaper to build than conventional approaches, and that stormwater quality objectives can be met in a way that minimises maintenance costs.

2013



Brisbane City Council (BCC) obtained Federal Government funding relating to stormwater policy for a tranche of new stormwater harvesting projects to enable sports ground irrigation. Bligh Tanner were successful in winning the design briefs for four out of seven of these projects, providing a great base load of work for the forthcoming year. Bligh Tanner introduced some novel concepts like using the relatively large volume of a flooded open drain as a 'free' water storage. Though to make this work the team needed to develop a complex mechanism so that control weirs would release automatically in flood situations. This year also marked the development of a new relationship with the Churches of Christ in Queensland—the beginning of another valuable, long-term relationship with key projects on the Toowoomba Range, at Thornlands in Redland Bay, and at Caloundra on the Sunshine Coast.

Toward the end of 2013 Bligh Tanner was invited by BVN architects to be the structural engineers for their competitive bid for the \$101M Carrara Sports and Leisure Centre (CSLC) also referred to as the Commonwealth Games Sports Halls. The team subsequently won the bid, which meant that in one stroke, Bligh Tanner had doubled the size of its previous largest project. The company celebrated this as the industry recognised its consistent expertise for producing high quality, innovative work—for a company of 30 staff winning this bid was a truly remarkable achievement!

At the end of 2013, Cameron took up the role of Director, Civil Engineering. This year also saw one of the first projects Cameron worked on being completed—the Ken Fletcher Park in Tennyson.

Located on the site of the old Tennyson Power Station, the land was originally intended to be developed with riverfront apartments as an extension of an existing development on the site, but the 2011 flooding resulted in the site becoming a park. Cameron led this project through concept and detailed design, and then construction supervision and inspections, overcoming earthworks and design grading challenges along the way. The stormwater strategy for the site minimised hard engineering infrastructure and maximised the environmental and aesthetic benefits by enhancing the riparian edge. The park has been a hugely popular family leisure spot since it was opened, with its equitable access, all-abilities playgrounds, and sensitive, playful approach to the natural environment. Aside from the dedicated play areas, the park also offers an array of appealing green spaces and pathways well-suited for all sorts of activities.

*LEFT: Ken Fletcher Park mid-construction phase, Image courtesy Brisbane City Council.
RIGHT: Ken Fletcher Park on completion.*

"One of the particularly nice things about public realm projects like The Ken Fletcher Park is that you can enjoy these with your family and friends once they're complete," says Cameron. The park is a typical example of the variety of engineering work that Bligh Tanner do, with the Environmental Planning, Civil and Structural teams all involved in the project.

In 2013 Minister McArdle for the Liberal National Party (the Queensland State Government of the day) formed an advisory panel from industry. The Panel was chaired by Mark Pascoe, CEO of the International Water Centre, and Chris Tanner was invited to be part of that panel. The panel served Minister McArdle and subsequent Minister Bailey over a period of several years, advising on WaterQ, a blueprint for water management in Queensland through to 2045, and helping Government form relevant policy.

THE FREEFALL COMPETITION

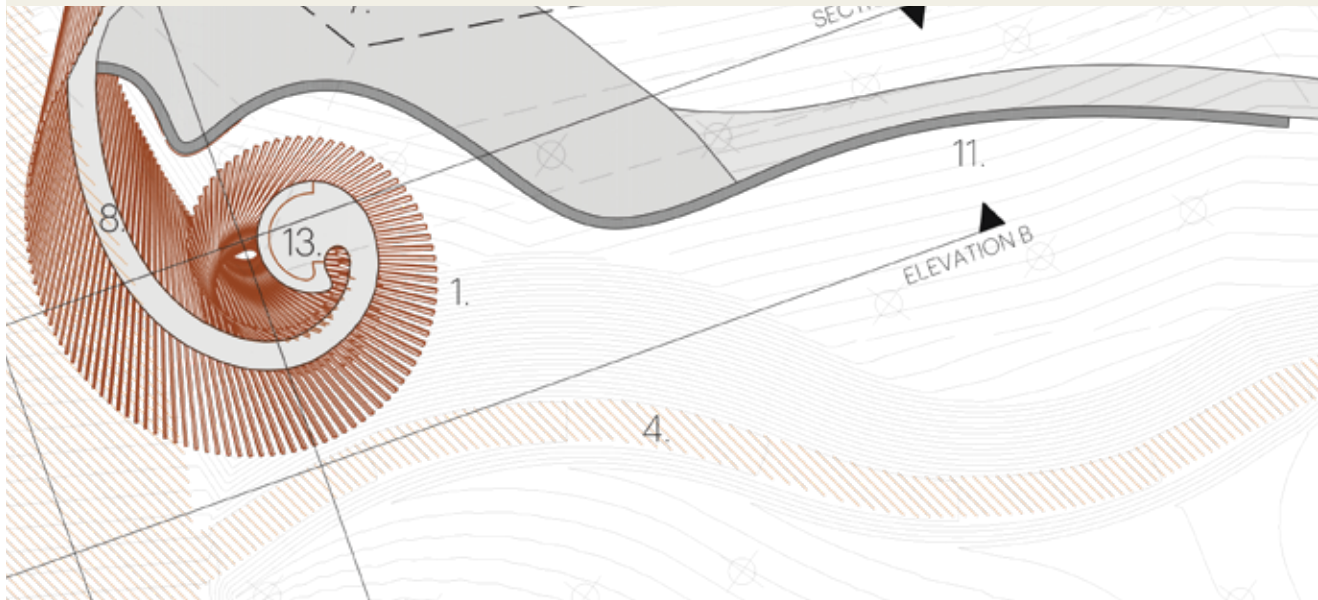
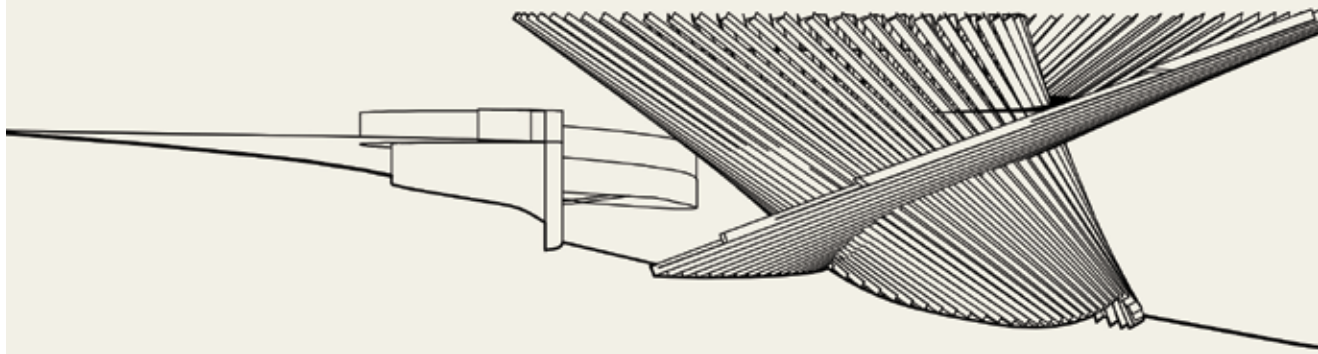
.....2014.....

2014 saw the design documentation work for the Carrara Sports and Leisure Centre progress quickly and the team led by Paul Callum was subsequently novated to the winning contractor, Hansen Yuncken. This exciting project took a huge amount of time and energy and is discussed in more detail on pages 58–59.

The structures team were also busy putting together a wonderful entry into an esteemed industry competition.

This led to some exciting and significant outcomes with the team winning the competition and Rod subsequently delivering the John Butters Memorial Oration at Engineers Australia's biennial event!

Late in 2014, Bligh Tanner began a new service offering when David was approached by Dr Michael Lawrence, formerly a Queensland Government water regulator, who was interested in developing a business in writing and auditing drinking water quality management plans for local government, helping them to better manage the quality and safety of their drinking water. As Bligh Tanner's first scientist Michael has successfully introduced a whole new field of complementary expertise to the business.

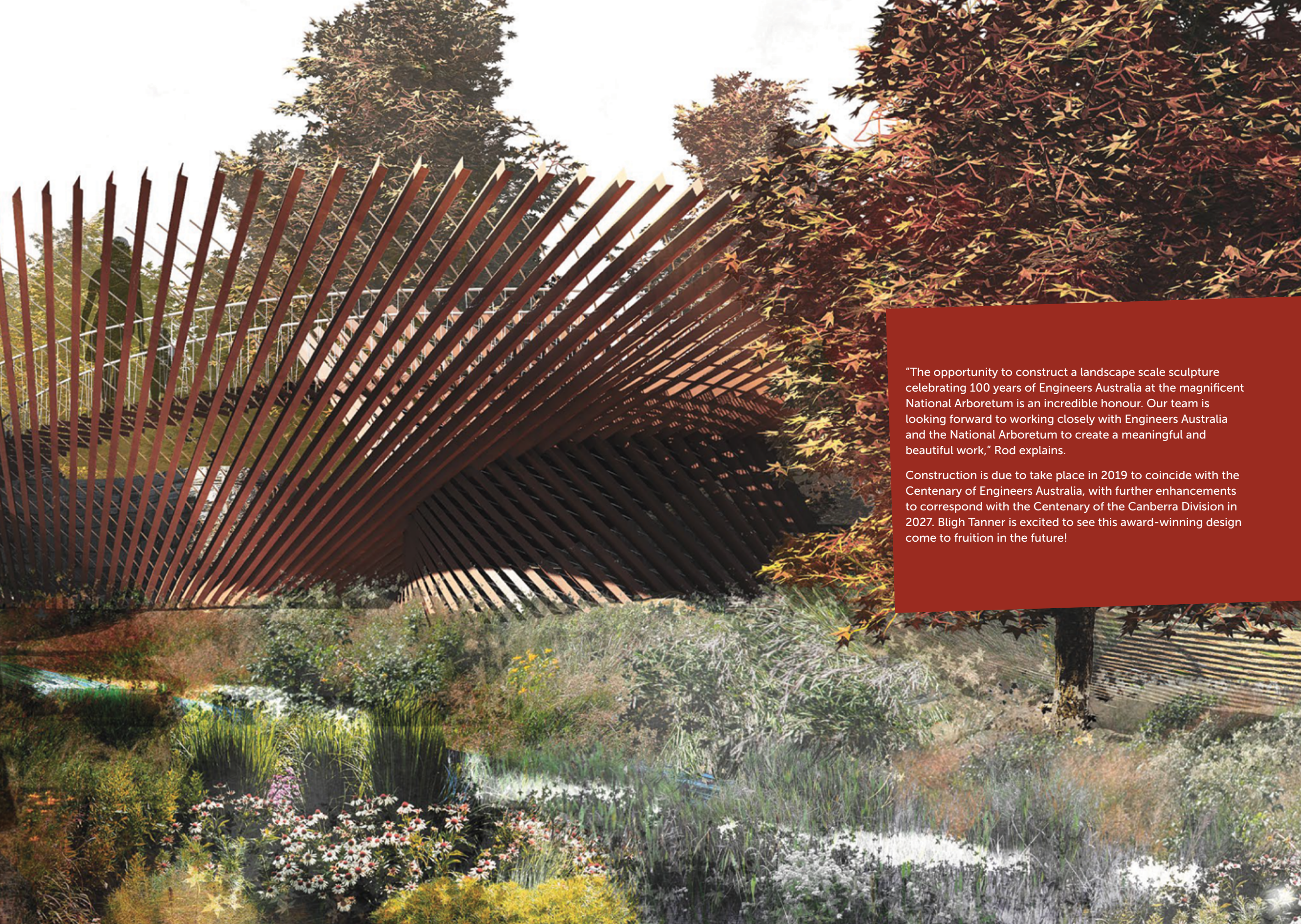


In 2014 Rod Bligh co-ordinated a collaborative team of Bligh Tanner staff, two artists (Susan Milne and Greg Stonehouse) and an architect (Nick Flutter) to produce an entry to the Engineers Australia Freefall Experience Design Ideas Competition—the entry won! The competition invited engineers, designers and other creative professionals from around the country to design a showcase installation for the Engineers Australia Freefall Pin Oak Forest at the National Arboretum.

The \$30,000 first prize was awarded to Bligh Tanner in an announcement made by the ACT Minister for Environment at the time, Simon Corbell. Mr Rolfe Hartley, past National President of Engineers Australia and Chairman of the Honorary Competition Jury said, "The winning entry 'Freefall' stood out. The work was superbly elegant in its engineering, immersive and contextual and above all intriguing for visitors to the forest."

'Freefall' is a transparent flowing sculpture of corten and stainless steel and rock that moves through trees, terminating as a spiral. The shape and sensory experience is inspired by the Cochlear implant—a world renowned Australian engineering feat. The installation includes an interactive system that senses its surroundings and interacts with visitors to the site.

LEFT: Design drawings of the winning entry, inspired by the Cochlear implant.



"The opportunity to construct a landscape scale sculpture celebrating 100 years of Engineers Australia at the magnificent National Arboretum is an incredible honour. Our team is looking forward to working closely with Engineers Australia and the National Arboretum to create a meaningful and beautiful work," Rod explains.

Construction is due to take place in 2019 to coincide with the Centenary of Engineers Australia, with further enhancements to correspond with the Centenary of the Canberra Division in 2027. Bligh Tanner is excited to see this award-winning design come to fruition in the future!



In 2014, Rod had the honour of delivering the Sir John Butters Memorial Oration at a biennial event that celebrates engineering and the work of engineers within or associated with the Australian Capital Territory. Rod was invited to speak about his team's winning entry in the Freefall Experience Design Ideas Competition. Rod's thought-provoking speech referred to the Engineering profession in Australia into the future, stressing the importance of competitions in engaging members of Engineers Australia and projecting the institution in a progressive manner to the broader community.

"We are all aware that engineering is generally a background force in society, which generally only comes to the fore at times of disaster and failure like the Christchurch earthquakes or Brisbane floods. It is tantalising to consider the opportunity for a place of deeper reflection on engineers' contribution to the nation," Rod said.

Rod also highlighted the importance of engineers considering aesthetics in design—translating concepts into meaningful built forms—and the value of collaboration: "While this project has been a special opportunity, it has always been my belief as an engineer that everything we design should be considered from an aesthetic perspective—it should be one of our Design Limit States..."

Much of the built infrastructure around us is in the control of engineers who all have the opportunity to create delight... Of course the best work is created when individuals have the opportunity to collaborate with a team that bring different skills and experience with them."

(The full speech can be found on the Bligh Tanner website, Design + Innovation Newsletter, Issue 5)

ABOVE & BELOW: Rod attending the biennial Engineers Australia event where he delivered the Butters Oration.



2015–16

2015 saw more exciting times for the structural team with Rod honoured as Queensland's Engineer of the Year.

Meanwhile, the business overall was experiencing some significant transition. David decided to step down as a Director in 2015 when he turned 60, but continues to work in the business as a Principal Consultant. David felt the time was right for him to reduce his responsibilities and in doing so, open opportunities for new, energetic Directors to take the group forward. According to David: "Joining Bligh Tanner was, for me, probably the best career decision that I have made and it has been a real privilege and very enjoyable to be part of a small and successful team, and to see it become a very significant player in Queensland consulting."

In July 2016 Alan took up the role of Director, Water and Environment and, with David, has progressed and consolidated a strong water and environment team based around: Alan's expertise in water sensitive urban design; David's integrated water management interests; and Michael Lawrence's water quality management work.

During this period, government spending was (and at the time of publishing remains) at notably low levels. Many decisions were being made based on price considerations, with environment a poor second. This has been particularly challenging for Bligh Tanner's civil, environmental and water engineering teams as for so long these areas of the business had specifically traded on high quality engineering work that was sensitive to the environment. But this quality requires greater effort and therefore higher fees, so in many cases Bligh Tanner was not winning jobs for this reason.

Even so, some interesting projects proceeded, such as the Townsville Stormwater Strategy, and the Griffin Development for Wattle Run, a family-owned development business committed to creating places of enduring value.

According to Chris: "These were gratifying projects because they were won and delivered on the basis of our high level of service and commitment to well-resolved, best practice engineering."

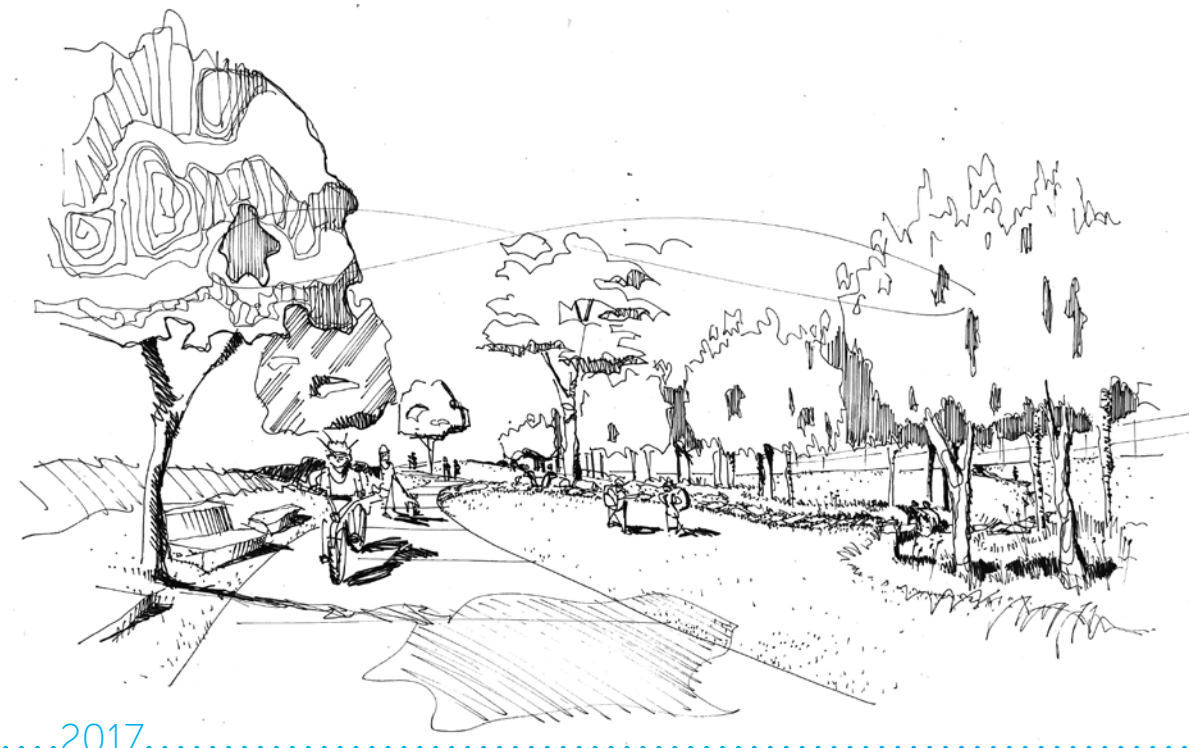
Another emerging idea was bicycle infrastructure, which had great synergy with the business as about a quarter of the staff were bike commuters. Bligh Tanner completed the concept development for the Woolloongabba Bikeway pro bono for Bicycle Queensland, with the concept subsequently adopted by BCC—the design was bold as it 'commandeers' a traffic lane from Stanley Street, and will provide a critical link for Brisbane's south-side commuters via a dedicated bikeway into the heart of South Bank (read more about this project in the 'Approach to Pro Bono and Community Work' section on pages 76–78). Bligh Tanner has also been appointed as the engineering designer for a new world class criterium facility to be designed and constructed at Ipswich.

At the end of 2015, Bligh Tanner's civil team secured two projects in Toowoomba and Gatton with new client, Bunnings; this work was a trial by Bunnings to improve the delivery of their new store developments and mitigate the cost and program risks surrounding the complex external roadworks and utility relocations. The projects involved developing functional road layouts, seeking Council and Department of Transport and Main Roads approvals, and detailed engineering design. Bligh Tanner used innovative 3D visualisation software programs which enabled effective collaborative design processes and engaged the stakeholders in the process (this is discussed more in the 'Evolution of Drafting Technology' section on pages 64–67). The successful delivery of the projects has led to further project opportunities with Bunnings.



Small Creek waterway today is a bleak, uninviting concrete drain.

The team conducted a week-long ideation session on site to gather and share ideas with the local community.



2017

For the water and environment team, opportunities emerged within the area of water management. And interstate opportunities were growing. One key project involved assisting Sydney Water develop innovative environmental strategies for the Western Sydney growth areas, forecast to become home to one million new residents over the next twenty years. A major consideration in the project was how to use water in the urban environment to enhance liveability, amenity and microclimate, reflecting a shift to more holistic thinking in the water sector.

Other key projects involved investigating opportunities to harvest stormwater and roofwater runoff for potable consumption in suburban Melbourne, developing a Growth Planning Framework for Icon Water (the ACT water utility), and engineering services input for the draft University of Queensland Master Plan. This latter project introduced the concept of the university campus as a 'Living Laboratory', feeding heavily into Chris's on-going interest in water cycle management and water sensitive cities. As well as these projects, the Queensland Government sought Bligh Tanner's skills and expertise to develop a discussion paper exploring how State Infrastructure Standards might be revised to better enable innovation and reduce pressures on housing affordability.

Around this time, the Bligh Tanner civil and water teams unified as the WEILD team; Water, Environment, Infrastructure and Land Development. According to Cameron: "The variety of projects that the WEILD team work on keeps professional interest levels high and technical design skills sharply honed. From the fabulous Mon Repos Turtle Centre, through to the complexities of designing heavy duty hardstands to cope with the loads from a 600 Tonne Travel Lift (the largest of its type in the Southern Hemisphere) for our marine clients at Hemmant, to designing the complex temporary roadworks and traffic management for a Tier One contractor on the Moreton Bay Rail project—there isn't a dull moment in the Bligh Tanner office!"

Bligh Tanner has demonstrated its agile nature in uncertain times with its ability to jump between large and small projects, effectively transferring the company's knowledge between them.

2016 and 2017 have seen a dramatic, and hopefully sustained, upturn in the water and environment business, with a significant increase in industry activity generating a diverse range of new and interesting projects. Bligh Tanner's review of the South Bank pool water treatment systems is an opportunity to re-establish the company's relationship with South Bank and a great opportunity to integrate the teams' range of skills.

At Small Creek in Ipswich Alan and his team are working with Ipswich City Council and Landscapology to deliver one of the most ambitious urban waterway restoration projects in Australia—the return of 1.6 km of concrete drain back into a healthy functioning waterway. Michael's water quality management work is going from strength to strength, and emerging strategic review opportunities for clients such as Sydney Water, NSW Health, and Queensland Urban Utilities are opening new doors to ongoing and interesting project challenges.

ABOVE: A Small Creek design development sketch (produced in collaboration with Landscapology) illustrates the intent to rehabilitate the waterway and activate the corridor for the local community. In June 2017, the collaborative Small Creek project won the Australian Institute of Landscape Architects (Queensland) Land Management award of excellence.

The structural group is working on exciting, geographically-diverse projects that will enrich the team's expertise. Specialty projects are underway in Sydney (art, medical, façade), Northern NSW (schools), and regional Queensland, with the Waltzing Matilda Centre in Winton. Core business in education (schools and universities) and health (hospitals, aged care and specialty projects such as radiology bunkers) is growing with the continual strengthening of relationships. More overseas opportunities are likely with recent projects in Shanghai (art) and Myanmar (heritage). Facades—new and existing—is a key area of opportunity, and expertise in timber engineering continues to grow as the company positions itself at the forefront of technological developments in this sustainable industry.

THE CARRARA SPORTS AND LEISURE CENTRE (CSLC)

At the start of April 2017, the CSLC achieved an official status of 'practical completion' and welcomed journalists from around the world to tour the venue as part of a 2018 Commonwealth Games press briefing highlighting the centre's scale and details. As the structural engineers for the \$101M project, a team of six Bligh Tanner staff guided by Paul Callum worked closely with the design team led by BVN architects and the main contractor Hansen Yuncken to ensure the delivery of complex engineering for the world-class facility. The facility will host the squash, badminton and table tennis for the 2018 Games and consists of two large multi-use halls, with multi-level facilities in between.

The building has been designed to meet Commonwealth Games Federation and International Sports Federation standards, as well as address the long-term legacy requirements of the City of Gold Coast (CoGC) community. According to Paul Callum: "The 'fast track' design process and subsequent construction methodology were major challenges requiring creative solutions. The roof trusses were large, being 70 metres long and weighing approximately 20 tonnes each. During the building programme we had to allow for the movement of the large mobile erection cranes within each hall footprint, so we provided a large temporary access slot through the 300 millimetre thick, post-tensioned slab to allow the crawler crane lifting and placement access."

With these challenges now in the past, the Bligh Tanner team are thrilled with the completed building and are looking forward to seeing some of the 2018 Games.

"As a mid-size Consulting Engineering company, it's a remarkable achievement to produce a building of this scale, complexity and impact, all in good time for its purpose," said Paul. Post-games, the CSLC will provide civic and sporting community buildings including two large sports halls, a new Gold Coast Suns AFL training facility and mixed use offices—a significant infrastructure development creating diverse opportunities based around furthering elite sports within the city.

Don Hewitt, the Director of Major Projects and Property representing Bligh Tanner's client, the Queensland Government, noted "Bligh Tanner's structural design processes ensured cost and operational requirements were achieved ... Bligh Tanner worked diligently through the early design processes with DSD (Department of State Development), the project Architect and project Quantity Surveyor investigating numerous structural options to ensure value for money outcomes were achieved for both the State, the Council and the Suns."

As well as this, BVN were pleased with the collaborative effort with Mark Grimmer, Principal, noting: "What we valued most about working with Bligh Tanner was the team's willingness to understand our architectural intent and support us to achieve a high quality design outcome for the project."

Bligh Tanner were also commended for its innovative use of 3D imagery relating to this project. For more on this refer to the 'Evolution of Drafting Technology' section on pages 64–67.



ABOVE: Hall 2 on Opening Day.
BELOW: The multi-level 'street'
between the two multi-use halls.





The Bligh
Tanner staff,
2017.





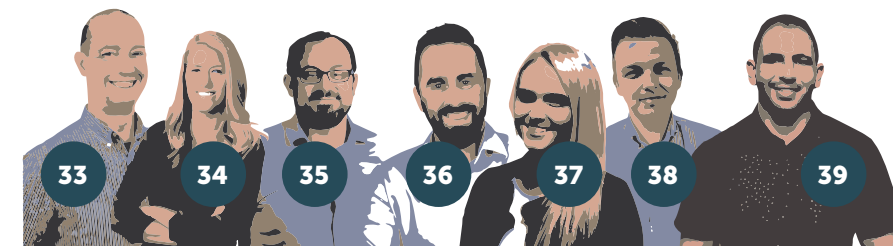
FRONT ROW (L – R): 1. Jack Foote, Structural Engineer; 2. Chris Tanner, Director, Environmental Planning; 3. Alan Hoban, Director, Water & Environment; 4. Rod Bligh, Director, Structures; 5. Paul Callum, Director, Structures; 6. Cameron Riach, Director, Civil Engineering; 7. Paul Easingwood, Director, Structures.

2nd ROW (L – R): 8. Toby Hodsdon, Principal Structural Engineer; 9. Simon Byng, Senior Structural Drafter; 10. Brendan Thomson, Senior Civil Designer; 11. Kate Heliotis, Student Engineer, Structural; 12. Ashley Flower, Senior Civil Designer; 13. Maddi Wakeman, Administration Officer; 14. Wendy Bennett, Bookkeeper; 15. David Hamlyn-Harris, Principal Consultant, Water & Environment; 16. Lynne Smith, Reception & Administration Officer.

3rd ROW (L – R): 17. Simon Kochanek, Associate Director, Structures; 18. Zane Gomez, Cadet Drafter; 19. Liam Sherman, Structural Engineer; 20. Jim Mitchell, Senior Water Engineer; 21. Stephanie Brown, Civil & Water Engineer; 22. Jim Lehmann, Senior Structural Drafter; 23. Matt Martin, Senior Civil Engineer; 24. David Robinson, Principal Structural Engineer; 25. Matthew Ennever, Structural Engineer.

BACK ROW (L – R): 26. Peadar Scanlan, Senior Civil Designer; 27. Michael Cohen, Senior Structural Drafter; 28. Jack Landsberg, Civil Engineer; 29. Simon Lewis, Structural Engineer; 30. Michal Studzinski, Senior Civil Engineer; 31. Nathan Scott, Principal Structural Engineer; 32. Jean-Pierre Victor, Structural Drafter.

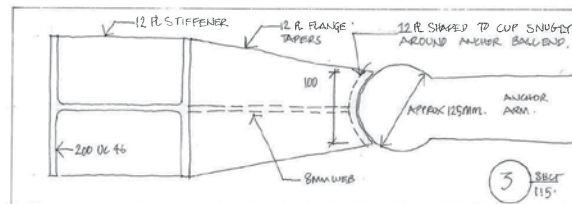
ABSENT/BUSY WITH CLIENTS/ON-SITE (below): 33. Michael Lawrence, Principal Scientist; 34. Leigh Ives, Senior Structural Engineer; 35. Juan Castro, Senior Civil Engineer; 36. Sean Hinton, Senior Scientist; 37. Heather Miethke, Marketing Co-ordinator; 38. Blake Hooper, Civil Designer; and 39. Daniel Exintaris, Structural Drafter.



MORE TO THE STORY

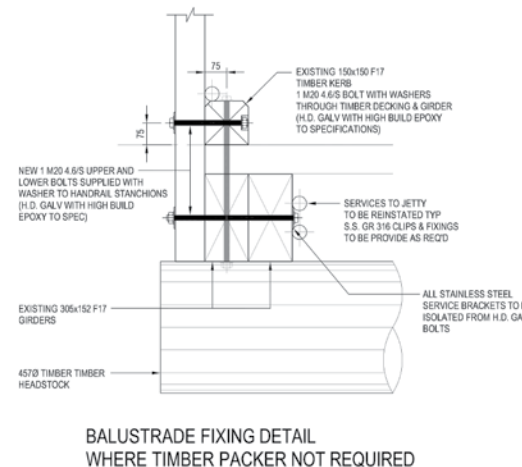
EVOLUTION OF DRAFTING TECHNOLOGY

The evolution of Bligh Tanner shares a similar timeline to the revolution in engineering design communication which has presented substantial challenges to engineering design offices. The early part of the 1990s saw engineering technologists transitioning from pen and pencil drawings on tracing paper to computer-aided drafting. The days of design changes requiring inked lines to be scratched out with a scalpel were gone forever. The new generation of engineering graduates would never again have to face the withering glare of a battle-scarred drafter being presented with 'little' changes.



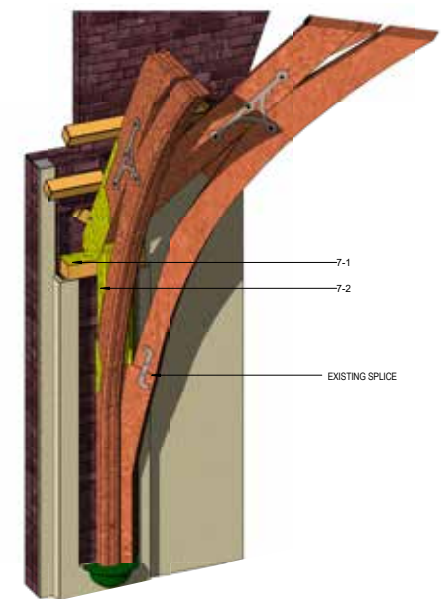
Section from Rod's 1991 Kangaroo Point walkway maritime object sketches, done the old-school way—by hand.

By the mid-90s AutoCAD had a stranglehold on the market with their 2D drafting software which simulated the manual predecessor. This early period is remembered fondly by many, because AutoCAD was simply a drafting aid to a design process that was well-established—engineering technologists were clear about the drawing package that was required, and building geometry was yet to take on the complexity that the power of electronic modelling and drawing unleashed.



Autocad drawing of Picnic Bay Jetty.

Over time, 3D modelling emerged, with 2D documentation produced from the 3D model. The 3D model is now used for automated project costing, routing of services, fabrication and building setout. In retrospect, it is probably only in recent years as we head toward 2020 that the skills, knowledge and roles have come together in a more efficient process—it has certainly been a challenge to integrate them all effectively.

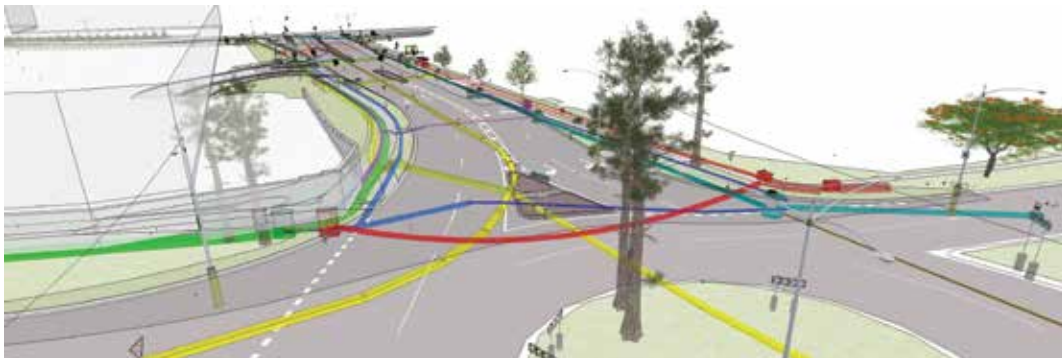


Recent Revit 3D structural drawing for Albert Street Church.

One thing that is clear is that technologists must be highly competent contributors to the engineering design process—in the hands of experienced, clever technologists and engineers, 3D design and drafting tools, such as Revit, 12D, Google SketchUp Pro, and other visualisation packages, have become powerful aids to Bligh Tanner’s ability to perform on the challenging projects the company thrives on.

Bligh Tanner’s use of advanced 3D modelling and visualisations in civil engineering has helped achieve some great project outcomes, not only improving the quality of design and documentation, but helping accelerate development approval timeframes.

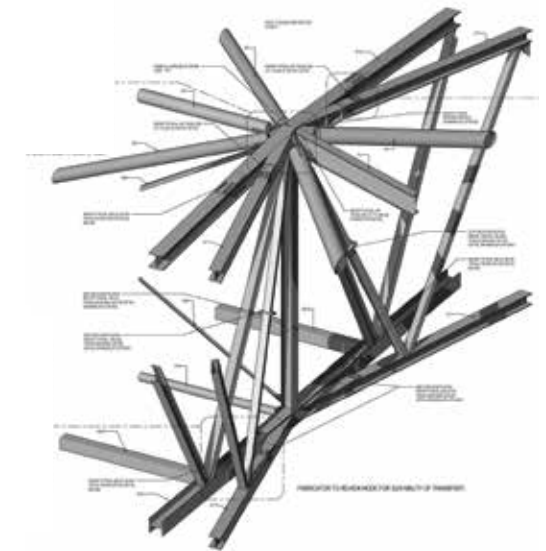
One such project was for a new Bunnings warehouse in Acacia Ridge. Like many infill and redevelopment sites, the new site was complex. Located in a busy urban environment, it had dense below ground services networks, heritage aspects and soil contamination issues. Bligh Tanner used an innovative 3D modelling software to construct detailed 3D engineering models of the proposed and existing scenarios. The 3D models are highly visual, dimensionally-accurate and can be displayed and interrogated in real time on a screen during design team meetings, pre-lodgement meetings with authorities, and community consultations. Bligh Tanner has received commendations from the Department of Transport and Main Roads and several local governments for this approach.



Google SketchUp Pro xray images produced from a 3D model of a busy intersection in Acacia Ridge. These images assisted Bligh Tanner’s client, Bunnings, to effectively communicate with authorities and obtain the necessary government approvals before construction of their new warehouse started.

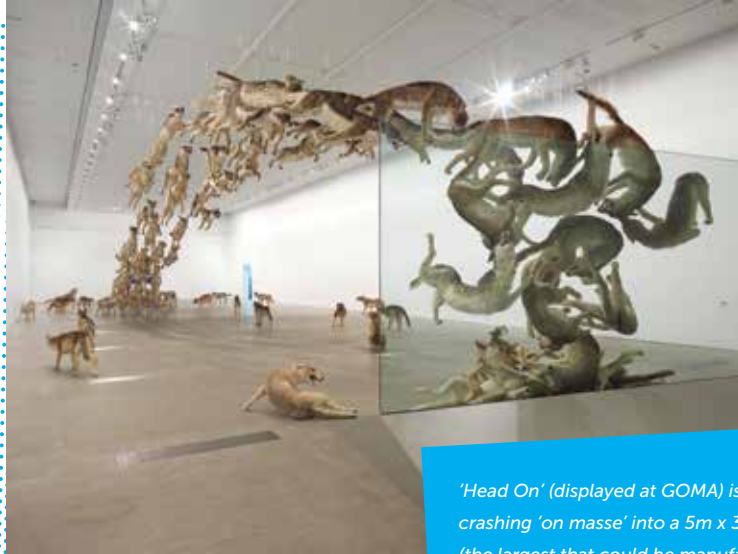
Bligh Tanner was recently delighted to be the only engineering firm recognised at the 2015 Australasia Revit Technology Conference (RTC) for Building Information Modelling (BIM) excellence. Simon Byng, Senior Structural Drafter at Bligh Tanner collected the runner up prize in the Documentation category of the RTC Competition for the innovative use of 3D imagery in documenting the 2018 Commonwealth Games Carrara Sports and Leisure Centre project. Bligh Tanner used 3D imagery to add to the understanding of the building’s geometry and construction sequence, while still producing high quality traditional structural engineering documentation. “We have used images to explain complex truss connections in a clearer and more efficient way than traditional documentation. Stair paths can be explained more clearly with an image than with multiple elevations, and welded frames can be easily visualised... It is great to be recognised for the strength of our drawings and to be the only engineering firm selected along with some of Australia’s largest and best architectural firms,” Simon said.

While Bligh Tanner no longer has drawing boards and hanging cabinets, the light table and butter paper for sketch overlays still hold a valued place in the group’s office. This may shift in years to come. But for now, the company is still finding value in mixing traditional, and not-so-traditional, hands-on methods, with new technologies. A great example of this is the civil team recently experimenting with plasticine and kinetic sand as rapid methods to resolve 3D design challenges in a hands-on way.



Example of BIM excellence—imagery showing truss connections for the CSLC project.

SPECIAL STRUCTURES & PRODUCT DEVELOPMENT PROJECTS



'Head On' (displayed at GOMA) is a large piece with 99 wolves crashing 'on masse' into a 5m x 3m specially cast piece of glass (the largest that could be manufactured). Support had to be as non-intrusive as possible and so a small clamping wedge was used at the base as the only support.

In recent years, Bligh Tanner's special structures expertise has developed over multiple bespoke projects. The company naturally aligns itself with specialised and innovative projects, offering expertise in forensic and investigative engineering for a wide variety of: buildings; bridges; membrane, tension and shade structures; artworks in the public realm; marine structures; façades; and products developed as built environment solutions. These types of projects rely on experience and the ability to work at a detailed small scale. They also require professionals who are curious about new materials and systems—progressive engineers inclined to thinking 'outside the box' about what is possible.

Bligh Tanner consistently demonstrates an in-depth understanding of the structural design of artworks encompassing varied materials and techniques including stainless steel, aluminium, glass, copper, timber, corten, massive timber construction, Cross Laminated Timber and ETFE (Ethylene Tetrafluoroethylene) membranes, often in combination with one another.

Perhaps some of the most publicly recognised of Bligh Tanner's special structures projects are the GOMA installations, including 'Head On' (pictured) which was completed in 2015.

The company's depth of understanding has recently enabled progress into the field of façade engineering working on numerous innovative projects for UQ (including the Global Change Institute, and the Goddard and Forgan Smith building additions, noted in the Timeline). Bligh Tanner has also worked on a complex suite of glazing systems for the Institute of Marine and Antarctic Studies at the University of Tasmania, Hobart, and a glazed link bridge between two existing buildings on Ann Street in Brisbane.

The past few years have seen Bligh Tanner develop a strong track record of innovation in the field of product development, including the first use of geo-polymer concrete in suspended concrete slab, composite panel testing and engineering, and lately the testing and development of Cross Laminate Timber (CLT) with Hyne-XLam and UQ.

THE SUMMITS

In 1994, Bligh Tanner commenced with a weekend away at the foot of Mt Lindesay (situated on the border of Queensland and New South Wales in the Scenic Rim region) with Rod and Chris joined by Judy and Jenny and the two young Tanner children—an appropriate location considering the families shared a keen interest in outdoor pursuits. The weekend strategic planning event held every year since then has been referred to as the Bligh Tanner 'Summit'. The Summit continues to be a family-friendly event, and is important in ensuring the partnership remains strong.

The format of the Summit involves Directors discussing broad strategic directions and aspirations away from the office and reporting back to their partners over a Saturday night dinner. For many years now the Directors have sought staff input relating to intended Summit discussion topics—so they also report back to staff after the weekend away.

The format of the Summit has evolved with the inclusion of an external moderator/coach over the last 10 years, but the essential nature remains.

External advisers who have helped to guide the business and facilitate the Summits are:

- + **Stephen Eager** Stephen came to Bligh Tanner highly recommended by Arkhefield who had been through a recent successful growth phase;
- + **Peter Conde** Peter generously fit Bligh Tanner in around his role as Performance Director for the Australian Olympic sailing team (which he managed to success in London and Rio de Janeiro);
- + **Andrew Buckley** The ex-Managing Director and CEO of Cardno has brought his considerable experience in engineering consultancies to help counsel the business through a period of Director transitions, and challenge the Strategic Plan to help ensure the ongoing success of the business.



CULTURE

Striving for good organisational culture and spirit has always been important to Bligh Tanner, and in the past has been a key element that has attracted talented, socially engaged people to the group. The company has tried to maintain a flat structure to encourage open, more informal and creative lines of communication and collaboration. In 2017 there are six Directors each working closely with a small team. The belief is that within a diverse melting pot, everyone can learn and develop from each other; in a fast-paced, technologically-developing world, the younger people in the business have as much to offer as the older, more experienced professionals. And those who have worked in different communities or countries bring alternative perspectives and ideas.

Bligh Tanner believes that innovative engineering practice stems from these and many other knowledge overlaps.

The administrative team's role cannot be understated—they are central in helping the Bligh Tanner office and culture thrive day-to-day, and dealing with the nitty gritty that keeps the place moving. Longstanding receptionist and administrator Lynne Smith has introduced some wonderful traditions over the years, such as cooking up delicious staff lunches at the end of each month—something all the staff greatly enjoy!

As well as within the business, it is important to acknowledge that people's roles and identities extend far beyond their work and those aspects to their lives need to be respected. Bligh Tanner sees its Christmas parties and occasional weekend social events as opportunities for staff and their families, or significant others, to relate in a relaxed environment outside of the workplace. There have been some fantastic staff parties in the past, including members of the company forming their own band, 'The Banners' (including Cameron on bass guitar and Rod on rhythm), to provide the live entertainment for the evening!

More recently many of the Christmas parties and social get-togethers have been held in the homes of the Directors, embracing a more personal approach to the business and its culture.

In 2017, weekly yoga sessions have become another way that Bligh Tanner supports the overall wellbeing of staff. It's better than a shot in the arm (though annual flu jabs are on offer too!).

THE GINGER GROUP



The Bligh Tanner Ginger Group as at May 2017. (L – R) Juan Castro, Senior Civil Engineer; Michal Studzinski, Senior Civil Engineer; Nathan Scott, Principal Structural Engineer; Toby Hodsdon, Principal Structural Engineer; Michael Lawrence, Principal Scientist; Simon Kochanek, Associate Director, Structures.

A ‘ginger group’ is an evolving formal or informal group seeking to influence the direction and activity of an organisation as a whole. Bligh Tanner formed its first ginger group in October of 2015, the idea being that it would empower select senior staff to drive the development of systems for team, project and cost management, QA, employment, and so on. The group channels its natural combined energy and drive to enhance the business from within, creating a valuable and dynamic internal “ideas engine”.

The ginger group’s specific purpose is to make the business more efficient, not to bog it down in meetings and processes, and the group is composed of members from all the Bligh Tanner disciplines. It meets regularly to review and progress a list of items, with Directors assisting to prioritise action.

The group provides quarterly reports to the Directors for review at board meetings, and a final report for review at the annual Directors’ Summit. At this stage the following year’s ginger group membership is also reviewed to ensure a fresh stream of ideas.

The ginger group’s first year has been very successful with many key business items reviewed, discussed and in some cases already implemented. An example of this is the buddy system of mentoring, which was proposed by the Ginger Group to ensure that everyone at Bligh Tanner, regardless of their role or experience, has a sounding board, an advocate, or a friendly ear for those times when this sort of support can be invaluable. These people are referred to as “mentors”—the mentors are simply people who have been there before and who can offer some perspective or personal experience to help with good decision making. While the buddy mentoring system is optional, all are encouraged to be involved to help develop relationships that go beyond the superficial, embedding a genuine culture of mutual support at all levels of the Bligh Tanner family. It is hoped that the relationships will develop organically over time and the system will grow increasingly effective.

VISUAL IDENTITY AND BRAND COMMUNICATION

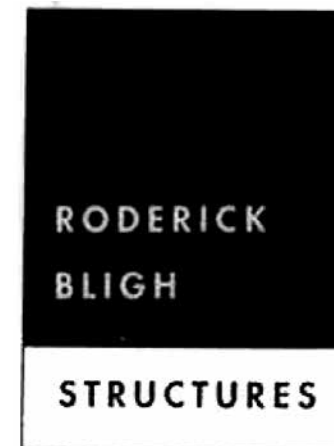


It is always fun to reflect on a business’s identity and look back at past logos—they become such a strong visual identifier for any brand. The evolution of Bligh Tanner’s visual identity from the very early days to today’s logotype reflects a story of growth and adaptation.

The very first logo for ‘Roderick Bligh Structures’ was used from 1992–94 and was stylistically derived from Russian Constructivist ideas relating to organising abstract, geometrical elements to make dynamic yet visually stable forms.

Rod worked with the design team at Dotdash and the graphic pictured to the left was the main inspiration. When Chris and Rod joined forces the logo approach remained the same. This identity remained from 1994 to around 2001.

The very first logo was inspired by the style of this 1923 Bauhaus poster.



The first ‘Rod Bligh Structures’ logo by Dotdash was adapted simply to reflect the new business name, ‘Bligh Tanner’. While these examples are black & white, the colours actually used were red and black, in common with the Russian Constructivist movement.



Michael Phillips, a local artist and graphic designer, was responsible for the next big shift in 2001. He developed a base artwork by abstracting the shapes, colour and texture of a concrete structure joint—the logo and other graphics were then derived from that graphic. The colours used were blue to represent water and the sky, and browns to represent the earth.

This base artwork is an abstract representation of a concrete structure joint.

In 2008, the logo was sharpened up by Peter Lynch of Entica. It retained the basic shape of the prior version, along with the colour palette. But it simplified and introduced a separation within the graphics meant to evoke flow.



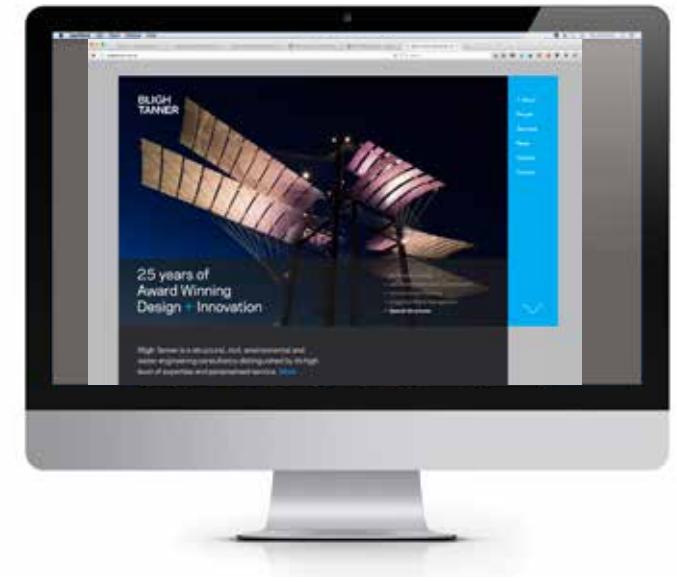
The new 2001 logo was derived from the base graphic.



The 2008 iteration still referred to the earlier base graphic.

**BLIGH
TANNER**

Bligh Tanner's current logo and website.



In 2014–15 Bligh Tanner worked closely with Lindy Johnson's Marketing and PR team to uplift the company brand and communications strategy. Up until this point, the strategy had been relatively low-key and informal. Lindy recognised that the company had a lot to say and show, but was mostly keeping that information to itself. Her mission became to 'lift the light from under the bushel' with a website and branding overhaul that encouraged Bligh Tanner's broader communication and interaction both in-house and with the industry at large. In particular, Bligh Tanner's *Design + Innovation* newsletter series effectively highlights many of the company's recent successes and industry-relevant news—this has become a rich record of the company's recent history!

On this occasion, the task of revamping the Bligh Tanner logo and visual identity elements went to Tony Gooley Design. Bligh Tanner wanted to use the company name as their logo to maximise space allotted in proposals and publications; the older logo shape was now taking up valuable space. As a nice nod to the past, Tony Gooley developed a font that retained the angles that were introduced by Michael Phillips back in 2001.

The recent overhaul of the company's visual identity and communication approach has been very successful and is something the Bligh Tanner team are proud of. The website has become a gold standard that other companies often aspire to.

APPROACH TO PRO BONO AND COMMUNITY WORK

As Bligh Tanner's business has grown, the company has had the capacity and desire to offer some pro bono services to both the local community and communities further abroad in developing countries. In many of these countries engineering expertise is hard to come by yet greatly called for to preserve heritage. Occasionally this pro bono work has led to other opportunities for remunerated projects, however this has been an added bonus of such work and certainly not a central focus.

The company has been involved with some interesting projects over the years, including the following:

- + **Los Palos (East Timor)** In 2012 Bligh Tanner staff worked with a charity group to adapt and re-use a heritage Portugese Market place building into a community centre for cultural use (arts, dance, etc). The building was originally going to be demolished but since the group saved and renovated it, it now gets great use.
- + **The Bush Owner Builder Project** In 2013, Bligh Tanner staff started working with Balkanu, an Aboriginal corporation which focuses on economic development for Cape York Indigenous people, providing structural engineering design for Bush Owner Builder (BOB) houses. The BOB houses extended some initial work the company had completed designing shelters for the Mossman Gorge Gateway project. The aim of the BOB project is to support people in remote Indigenous communities who wish to build their own houses on their homelands. The self-built houses are constructed with the assistance of trained staff who supervise and pass on necessary building skills to the future owners, who may then be able to pass on those skills to others in the future. The construction materials used were selected to reflect local climate, culture and availability. The houses are intended to create a sense of ownership and pride, strengthen community bonds and promote natural leadership. The group involved visited the first lot of these houses in Hopevale—they learnt a lot from this process and subsequently modified the system using a prefab steel frame that the families could use as a core frame to build onto in their own time.



Ancient monastery and monks in Kashmir.

- + **Kashmir** In 2015 Bligh Tanner staff travelled up into the remote mountains of Kashmir to undertake a structural survey of a very old functioning monastery (founded in AD80 and with about 30 monks in 2015).
- + **Myanmar** In 2015 Bligh Tanner staff spent one week in Yangon (previously called Rangoon, the old capital of Burma) to undertake a structural review for the adaptive re-use of a major 1890s British Colonial Building known as 'The Secretariat'. And later returned to conduct a review of an old colonial Clock Tower in the same area.



'The Secretariat' in Yangon.

- + **The Wolloongabba Bikeway Project** In 2015 Bligh Tanner staff provided pro bono advice to Bicycle Queensland to make a long awaited Gabba to Goodwill dedicated bicycle link a reality. This positive action followed the tragic death of a cyclist in a collision with a truck at the corner of Stanley Street and Annerley Road in South Brisbane, 2014. The site had become a car-dominated environment over the past two decades, despite the growing urban population and mixed use; adaptation was needed. Bligh Tanner worked with a team including Tract Urban Design and Landscape, and Cambray Traffic Engineers (both also acting pro bono) that provided well-rounded consideration of the complex issues affecting the site. The team successfully engaged with BCC and the Queensland Government Department of Transport and Main Roads to build their support for the initiative. BCC has now embraced the project and committed funds to make the Gabba to Goodwill bikeway a reality over the next couple of years. This bikeway proposal fulfils a key need of the City of Brisbane's transport infrastructure. It will promote safe cycling and encourage greater numbers of people onto their bikes, reducing pressure on an already crowded road network. As the urban fabric of the local area evolves, the bikeway will provide opportunities for improved public amenity, commercial activity and enhanced streetscapes. "This represents a powerful change in how we do things in Brisbane, and gets us in line with world's best practice," said Bicycle Queensland CEO Ben Wilson. "On key routes, segregated bikeways are the answer to getting more people cycling and cycling in safety. It will mark a new way forward for Brisbane and get thousands of new people on bikes." In June 2017, the Gabba to Goodwill project was awarded an Australian Institute of Landscape Architects (Queensland) Community Contribution award.
- + **QAGOMA Programs and Exhibitions** For the past five years, Bligh Tanner has offered some in-kind structural engineering services to the Queensland Art Gallery and Gallery of Modern Art (QAGOMA) in support of presenting art and culture in Brisbane. QAGOMA is a leading institution for the contemporary art of Australia, Asia and the Pacific; it hosts a dynamic program of Australian and International exhibitions. Bligh Tanner also proudly contributes to The Chairman's Circle which unites a group of industry leaders dedicated to supporting the development of culturally-enriching programs and exhibitions.

LOOKING TO THE FUTURE

In a world full of change, there will always be a need for talented engineers with a passion for design and innovation, who can listen to their clients, communicate effectively, and who take pride in delivering excellence. As Bligh Tanner looks to the future, some of the big issues affecting our work include:

- + **Climate change** With a rapidly growing decentralised and renewable energy sector, there is increasing awareness of the need for climate-resilient design, and major planning implications for infrastructure, especially along coastlines and waterways.
- + **Technological innovation** With virtual reality, augmented reality, 3D scanners, drones, environmental sensors, cloud computing and more, we'll be able to achieve things beyond imagination. Cutting edge technologies will become commonplace—just as it was when Rod and Chris exchanged their first email instead of a paper note!
- + **Major demographic changes** With retiring baby-boomers, there is an increasing demand for better places for retirement living and aged care. Combined with this, we have a new, younger generation coming through who are tech-savvy, environmentally aware, and seeking meaningful work that makes a positive contribution to the world.
- + **Increased gender diversity in the workplace and at home** More and more of the top engineering graduates are women. Bligh Tanner will have an increasingly diverse team, and will be far better for it. There's also changing expectations about family and work, with a trend to shared parenting and greater participation of dads and grandparents in family lives. We will need to constantly evolve to provide a progressive workplace. Sooner or later, that will include greater diversity on the board.



Bligh Tanner recognises that its strength is its people. We aim to consciously recruit the brightest graduates, and the best experienced professionals with the strongest skills in their area of expertise, and provide them with a challenging and varied workload. We believe our project work is underpinned by a strong culture and value set, and acknowledge that the whole is significantly greater than the sum of its parts.

As the newest Directors, we (Paul Easingwood, Cameron & Alan) have all joined Bligh Tanner as part of a plan to enable and empower the business to be ready for its next chapter. We are committed to ensuring that future succession planning continues and believe this provides a positive, unifying bond within the company.

Our breadth of specialised experience, natural desire to work at the detail level, pursuit of innovation and challenging projects, coupled with attracting and retaining the best and brightest individuals, places us at the forefront of our industry.

We think the best way to face the future is to do what Bligh Tanner has always done: lean into it, embrace innovation, and, most importantly, unleash the potential of the most talented people we can find. Great teams are needed now more than ever!

Paul Easingwood, Cameron Riach & Alan Hoban, May 2017

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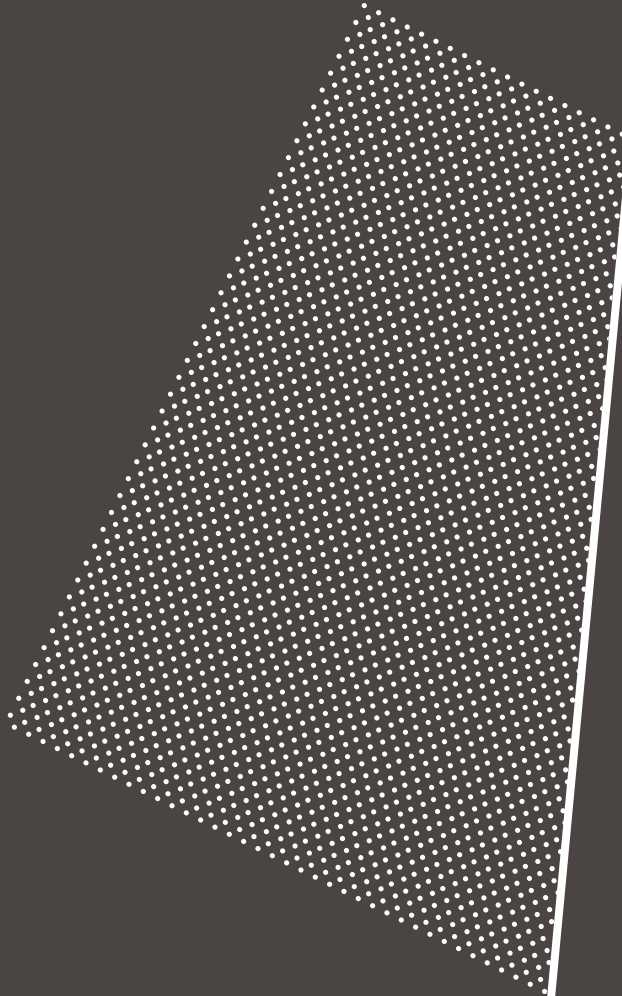
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