

METAMORPHOSIS

MAIN CONSTRUCTION COMPANY : Hutchinson Builders

ARCHITECTS : Trapp Architects

STRUCTURAL ENGINEER : Robert Bird Group

PROJECT VALUE : \$55 million

The iconic 310 Ann Street redevelopment features an upgrade of the external façade, an internal refurbishment to provide tenancies for retail, A-grade commercial and office spaces, and includes an upgrade of the building services to target Green Star and NABERS ratings.

The \$55 million redevelopment saw 310 Ann Street stripped out completely, the façade removed, the structural plate for the floors extended horizontally, a new lobby added by cutting out floor slabs, a new external façade installed, building services upgraded and the internals refurbished to ‘lock up’ not fitout. The project comprised 20,000m² of net lettable A-grade office space. It’s aiming for a 5 Star As-Built Office rating V3 and 4.5 Star NABERS value.

“It’s a significant project that’s changed the face of an iconic Brisbane building that has always been known in the city over the past 30 years. It was quite an honour to work on it,” said Steve Williams, Site Manager of Hutchinson Builders. There was much overlapping of demolition, design and construction, which meant Hutchinsons had to coordinate with the client, consultants and trades constantly under a D&C based contract. About 110 subbies were onsite any given day.

Ground breaking happened in late 2015 and since then, the project hasn’t needed much concrete. “We probably only chewed through a couple hundred cubic metres, that’s not a lot,” said Steve. “The more significant thing was the 500 tonnes of structural steel bolting to the existing building, the steel and the glass. In went a whole new curtain wall façade of glass, from ground floor to the roof on Level 19. That’s what’s unique about this building.”

The biggest challenge was the tower crane. “We used one of our own Hutchies cranes. It stood 100m on a freestanding tower. To get it into place by Christmas last year, we had to position the crane so it was about 11m offset above an underground train tunnel. That’s drilling through apart rock base with a 12mm wide auger bit. Due to initial design documentation limitations, we were required to successfully negotiate installing the foundations for the tower crane within the rail corridor. The engineering was huge to work

out the base for the tower crane to sit on. We had to facilitate that.” They coordinated these ‘sensitive works’ with Queensland Rail and their engineers to ensure there was no pressure on the tunnel. The result was a tower sitting on 17m deep concrete piles.

Another challenge was restricted site access given the CBD location. Because of that Hutchinson Builders opted for as many elements to be built offsite then craned in which improved site safety. “On every floor there were three sections of floor that we extended out, so that was 40m² times three for the extended floor plates on all 17-levels. We referred to those as pods that bolted onto the side of the building. All 57 of those we had preframed and assembled offsite with hand rails attached so we could lift them in place and connect them safely. Once the façade was installed, the handrails were removed. We used structural steel handrails with mesh so it was a safe working platform for erection and façade installation,” said Steve.

One of Hutchinson Builders’ next big projects to finish in the Brisbane CBD, is the Skytower on Margaret Street, which at 100-storeys, will be the city’s tallest residential tower.

As one of Australia’s largest privately and locally owned building and construction companies, Hutchinson Builders earned \$1.6 billion of revenue last year, has \$2.6 billion of work on hand, with the average job size \$22 million. Their average build time is 13 months. Hutchinson Builders, set up in 1912, has 12 offices, employs 1,400 people with most of their work in all urban and regional parts of Australia. They have a national presence that spans from Darwin to Hobart and Cairns to the Pilbara in the West.

For more information contact Hutchinson Builders, 584 Milton Road, Toowong QLD 4066, phone 1300 HUTCHIES (4882 4437), email info@hutchinsonbuilders.com.au, website www.hutchies.com.au



Below Bennett & Francis celebrate 100 years of surveying excellence, helping to create some of Brisbane's most noteworthy projects.

BENNETT & FRANCIS CELEBRATING 100 YEARS

A century of offering surveying solutions – that’s what Brisbane based Bennett & Francis is celebrating this year. Licensed surveyor Cyril Fryar Bennett founded the company with his first job a survey of a Girl Guides’ site at Cleveland. “Wearing his traditional waistcoat and bowler hat, he was met at the Camp Hill tram terminus by the land owner with a horse and dray and he shared the survey fee with his chainman,” said current Managing Director, Jim Worrell, who has been with Bennett & Francis for 50-years-strong. Retirement not yet on his radar.

“I’m 69, I should be retired. What’s got me is the excitement of where things are headed in the surveying profession. I can’t leave because of the evolution of the business and technology. We’re at the threshold. When I started in this firm in 1966, we were using old technology such as theodolites that were being used in the early 1900s. In the late 1960s, a surveyor might have been happy with getting 200 measurements a day. By the mid 1970s, laser technology came in with electronic measuring equipment. Now we have computers that are state-of-the-art and are planning new applications every day. That’s part of the excitement.”

The transformation of surveying has hinged upon lasers, which continue to be refined. “These days with point cloud laser scanners we can get up to a million points per second, with a billion points total per day not uncommon. These technologies are extremely efficient in terms of time in the field. They also improve employee safety, as much of the time the capture is done remotely so there is no need for an employee to walk onto a road to take a measurement for example,” said Jim. That said data handling and distribution, whilst not new to surveyors, is a whole new field that requires specialist input if it is to be done successfully.”

The current proprietors, surveyors Jim Worrell, Jeff Wood and Phillip Pozzi and IT professional James Worrell have between them 175 years of industry experience, so clients of Bennett & Francis receive the best of both worlds – access to a century of traditional knowhow along with the benefits of cutting edge technology and work practices. The company has such a strong commitment to technology, they have a dedicated IT department to oversee custom software and hardware development. Recognising the advances in ‘reality capture,’ the firm has invested significantly in laser scanning instruments and associated software. Arguably we are the only surveying firm in the country with a ‘GPU-enabled compute cluster’, capable of streaming point cloud files of billions of points, directly to clients and consultants, thereby minimising their own data handling requirements be it hardware or software. Point clouds are only part of the capture process. We have two fully certified UAV remote pilots and the firm is currently awaiting



Below Bennett & Francis employed surveying services to locate specific points of the structure on the project.

approval of a CASA Air Operators Certification to fly over populous areas. The compute cluster comes in handy again for processing many ‘gigapixels’ of data collected via the UAV’s to produce 3D models or even refining these models against laser scan data, again collected in a separate mission either terrestrially or from UAV. This avalanche of data from the different tools, combined with our survey methodologies, means we can combine old fashioned survey, GPS, terrestrial scanning, airborne scanning, 3D model generation from photogrammetry all into a single homogeneous data set. The next few years is going to see the explosion of augmented and virtual reality (AR/VR). The above data sets can be combined with proposed development models and visualised together in headsets like Oculus Rift or Microsoft’s Hololens – and thanks to our reality capture workflows – it can all be survey-grade data – not just a shiny disposable brochure data set, but the same data set used by the architects and engineers for detailed design.

Reality capture can continue further into the development, scanning or flying of worksites nearly daily to provide consultant teams with near-real time feedback on site conditions and progress – or to visually inspect work against model data, again perhaps in AR/VR – checking that walls are in the right place for example – to catch errors early before it might mean very costly rectification.

Precise measurements were crucial to the success of transforming 310 Ann Street from a 1980s curved building with many irregularities into a perfectly shaped glass-covered building with increased floor space and features. Surveyors Bennett & Francis had five of their staff work on the project, which started being built in September 2015. It actually marks three decades the company worked closely with the main construction company, Hutchinson Builders.

“The initial request from Hutchinson’s was to locate specific points of the structure using conventional survey methods and abseiling specialists, but we used scanning and robotic technology to ensure we contributed to the efficiency of the build,” said Sean Hooper, Key Surveyor for the project.

This meant they could accurately calculate the location of the curtain wall, the connection between structural steel and the existing concrete structure, footing design, crane size and location and design of the new mechanical plant. Matching their data with historical architectural and structural design information had showed the built structure departed from the design – bigger in some places, smaller in others. “Before the curtain wall façade components could be installed,

we checked measurements to ensure they were placed into the right spot and confirmed these by using the latest technology,” said Sean.

Being tech savvy is crucial for their work in data management, as they often manage data to create solutions where information from architects and engineers don’t agree. “We make that work, for example, ensuring a building joins where it should,” said IT manager James Worrell. “Our client can download our data from the cloud into their software and it means they get real time data. For some surveys, you can even ‘walk around’ in virtual reality and visualise with your building model.”

From its Brisbane base, Bennett & Francis offers geographical and information solutions for property developers, engineers, business and private sellers. The company has been involved in up to \$100 billion of big projects over the years including the Lady Cilento Children’s Hospital, many high-rise buildings in Brisbane and most of the Westfield shopping centres in and around Brisbane, including at Chermside.

For more information contact Bennett & Francis, 100 Ipswich Road, Woolloongabba QLD 4101, phone 07 3239 5432, email j.worrell@bfsurveys.com.au, website www.bfsurveys.com.au

Below Trapp Architects designed the extensions of 310 Ann Street, including new atriums and multi-level spaces.

310 Ann Street, Brisbane



Trapp Architects fuelled the vision and drive behind extending the existing building at 310 Ann Street, Brisbane in three directions and removing part of the floors to create atriums and multi-level spaces. The 50-year-old company first got involved in the project five years ago.

“At the start we asked what are we going to do with this building? We did lots of permutations of value options and feasibility studies. It’s a significant undertaking to completely reinvent a building,” said Architect and Director, Di Lund.

“The building has an interesting complication as it’s on top of the main train line between Central Station and The Valley. It’s about the busiest train line you can get. The building is straight over the tunnel, so while we could have knocked down the building, we couldn’t have built again.”

Their solution was to create something that would stand the test of time, in the realm of cutting edge design but strike a balance to be accessible to the understanding and imaginations of a fairly conservative tenant base. “We looked at pushing the envelope on the design and we literally did that by increasing the lettable area.”

While 310 Ann Street will be an iconic project, Trapp Architects have designed a range of buildings including aircraft hangars and flight simulators for the Department of Defence and for Brisbane Tech Park, they masterplanned right down to the detail for each individual tenant.

Trapp Architects design for commercial, logistics, defence, industrial, education, special process facilities and residential projects and have worked across Australia in capital cities, regional and remote areas.

They employ 12 inhouse staff plus a mix of specialists that consult on graphics and landscapes. “We offer architecture from the ground up, which means providing services from creating a master plan, concept development, marketing presentation, the detailed documentation and construction support,” said Di.

For more information contact Trapp Architects, 349 Sandgate Road, Albion QLD 4010, phone 07 3862 3555, email info@trapparchitects.com.au, website www.trapparchitects.com.au

Below Stone and Tile Studio supplied and installed crystalline Onyx and marble-like tiling on the 310 Ann Street project.



Below Floth undertook the building services engineering and ESD for the refurbishment of the project.



Supplying and installing high-end stone and tiling was the brief Brisbane company, Stone and Tile Studio, excelled at for the 310 Ann Street project.

Managing Director, Percy DeMarco considers the ‘masterpiece’ to be the unique white and grey Onyx stone imported from Iran and processed at Stone and Tile Studio’s factory in China. These are going into the lift lobby walls to Ann Street, the mezzanine level, and at the Wickam Street entrance. “This beautiful crystalline Onyx is a first for Australia, but not without challenges, because it’s fragile. Some of the slabs being laid are 1,500mm x 1,500mm, so the logistics of moving and fixing these large panels is what keeps the adrenalin pumping.”

Stone and Tile Studio is also supplying La Fabbria vanity fronts and feature columns in the bathrooms. These tiles look like Statuario Marble, are easy to install, and cost under \$200 per/m² compared to the real stone at more than \$700 per/m². Also being installed are 450m² of granite slabs for the entrances at Ann and Wickham Street.

Percy has more than 30 years experience in the field, and his 12-year-old business works closely with Compass Tiling. They’ve worked on 330 Adelaide Street, the Roma Street Parklands, Jupiter’s

Casino Gold Coast, the Sofitel Hotel entries at Brisbane and Noosa, and are now working on the new Emporium Hotel.

“Our strength is in giving our clients a turnkey supply package. The buck stops with me. I personally source tiles from all around the world including, Italy, Turkey, Spain, China, Oman, Iran and Indonesia,” said Percy.

The two companies employ 12 staff, have two showrooms and a 6,500m² warehouse north of Brisbane. Staff have been working on the 310 Ann Street project since early this year.

For more information contact Stone and Tile Studio Pty Ltd, 440 Stafford Road, Stafford QLD 4053, phone 07 3356 9766, website www.stoneandtilestudio.com.au

Floth Sustainable Building Consultants, a leading independent Australian specialist engineering firm, undertook the building services engineering and Environmentally Sustainable Design (ESD) for 310 Ann Street on behalf of the building owner. For over 30 years Floth has worked on major projects across Australia and in Asia, earning a reputation for technically excellent, commercially viable and sustainable designs.

Floth leadership in sustainable building design is demonstrated by achievement of a number of Australian ESD firsts and international recognition as the first Australian winner of a World Green Building Council Asia Pacific Leadership in Green Building Award for Leadership in Sustainable Design and Performance – Commercial Category (2016).

Floth design philosophy embraces a totally integrated approach – to optimise the project as a whole, not just the services component. The client brief for the major refurbishment of 310 Ann Street demands achievement of PCA Grade A engineering services and ESD performance, including minimum 5 Star Green Star and 4.5 Star NABERS Energy targets. Floth Sustainable Building Consultants’ integrated design response cost effectively meets and in many cases

exceeds PCA Grade A requirements, with the following items exceeding PCA Premium Grade:

- Tenant Equipment Allowance of 20 W/m²
- Tenant Supplementary Loop Cooling Capacity of 35 W/m² (44 W/m² of heat rejection)
- Cooling Plant Redundancy at 60% of Peak Cooling Load
- Tenant General Exhaust Capacity of 0.35 l/s/m²
- Lighting at ≤ 1.5 W/m²/100 lux
- Lighting Control Zones at ≤ 100m²
- Standby Power to 100% of Lifts
- Standby Power to 100% of House Light and Power
- Standby Power to 100% of Central Plant
- Standby Power to 100% of Tenant Light and Power
- Onsite Fuel Storage for 29 hours of Standby Power

With offices in Sydney, Brisbane, Perth and Jakarta, Floth has the engineering scope, experience and expertise to add value to any building project in any market sector.

For more information contact Floth Pty Ltd, Level 2, 69 Robertson Street, Fortitude Valley QLD 4006, phone 07 3513 8000, email bne@floth.com.au, website www.floth.com.au