



# THE HEIGHT OF LUXURY

**MAIN CONSTRUCTION COMPANY :** Meriton  
**ARCHITECTS :** Tony Caro Architects  
**STRUCTURAL ENGINEER :** Bonacci Group Pty Ltd  
**PROJECT VALUE :** \$450 million

Soaring above 170 metres to become the tallest residential building in the Parramatta CBD and designed by award-winning Architects the \$450 million Altitude Apartments sets a new benchmark.

Since 1963 the Meriton Group has spearheaded Australia's apartment revolution. Leading the way with award winning residential apartments in Sydney, Brisbane and the Gold Coast, they have grown to become Australia's largest and most successful residential developer, having built, sold and leased over 70,000 residential and serviced apartments.

A private company, Meriton's founder and managing director, billionaire property entrepreneur Harry Triguboff, is still passionately involved in the design and construction of all projects. Many are the tallest residential towers down Australia's eastern coast.

Altitude Apartments is the next in line. Soaring 53 levels with stunning Sydney CBD and river views, Altitude is designed by award winning Tony Caro Architects. It will be the ultimate height of living and the tallest tower in Parramatta. "Rising over 170m high, Altitude is right in the heart of the cultural district, surrounded by dining, sporting and outdoor options," informed David Cremona from Meriton.

"Like all our projects, Altitude is being built with the community and residents in mind, to activate the riverside area, maximise views

and make this into a landmark development for residents, shopping and dining."

While enjoying sweeping views of Parramatta, inside the apartments residents will enjoy contemporary apartment living and premium quality finishes and fixtures throughout. "There are one, two and three bedroom layouts to choose from, many with studies and timber-tone flooring throughout living areas," added David. "Entertaining will be easy, with sleek gourmet kitchens. Residents will also benefit from Meriton's own shopping centre built below Altitude tower, that will include cafes, a convenience store and specialty services."

Residents will also enjoy full access to Meriton's renowned 5 star resort style facilities including an outdoor resort-style pool with views over the Parramatta River, an indoor heated pool, spa and sauna, fully equipped gymnasium and an onsite building manager and security.

Already established along the waters' edge and only a short walk from Altitude, are numerous award-winning restaurants and a live theatre. Riverside Shopping Centre will add further convenience to Altitude residents as well as the local area.

Meriton offer a superior choice of residential apartments for sale and rent, along with luxury serviced apartment accommodation. Each apartment development is an evolution in quality and design, driven by an understanding of the way people want to live.

"50 years of evolution, superior quality control and a 100% completion record is what makes Meriton different," David proudly states. "Meriton's apartment living offers something for everyone. We build each development with children in mind; from purpose built playgrounds, landscaped gardens, resort style swimming pools, to on-site child care centres."

Today the Meriton Group offers a complete package with sales, leasing, property management and strata management services, as well as the luxury accommodation brand Meriton Serviced Apartments at more than 13 locations nationwide.

"We adapt to market conditions, predict housing trends and design to suit our customers' ever changing needs. Collaborating with some of the world's leading architects and designers, we implement innovative design and construction methods to create apartments that exceed our customers' expectations," continued David. "Our in-house team control the planning, design, construction, sales and marketing of all our apartment projects. We also undertake property and strata management, enabling strict quality control and superior outcomes at every stage."

Being self-funded, Meriton's size and scale allows them to undertake major projects with certainty. They offer stability no matter what the market conditions, with a proven track record of completing every single project they have started – something no other developer can offer.

*For more information contact Meriton, Level 11, Meriton Tower, 528 Kent Street, Sydney NSW 2000, phone 02 9287 2888, email [media@meriton.com.au](mailto:media@meriton.com.au), website [www.meriton.com.au](http://www.meriton.com.au)*





**Below** JBW Surveyors provided a wide range of specialised surveying services for the Altitude development.



**JBW Surveyors is one of Australia's leading surveying companies and has been partnering with Meriton on a variety of quality projects for over 40 years with many outstanding award-winning results.** With JBW's dedication to the successful delivery of a wide range of specialised surveying services for the property development and construction industries, Meriton's new soaring Altitude Apartments in Parramatta is in excellent hands.

Established in 1959 by John Boulton White in the St. George area of Sydney, JBW's initial involvement in surveying consisted of marking boundaries, setting out cottages for project home builders and carrying out identification surveys for solicitors.

"As time passed the firm became more involved with medium density residential developers and as developments became more complex our involvement with the developer grew to a stage where, today, we are an integral part of the development team from pre-purchase through to completion," informed Robert Cornish, a Director of JBW along with Wayne Diver-Tuck.

JBW commenced work on the Altitude Apartment site back in 2010 undertaking various site investigations followed by a boundary survey and comprehensive detail and levels survey of the site and surrounding streets, buildings and other features all for design and DA submission purposes.

During demolition and excavation, JBW were involved in a high precision monitoring exercise to monitor movement of Church Street and the adjoining neighbouring property adjacent to the southern boundary. Monitoring commenced in February 2014 and was completed in April 2015.

"The specific requirements of the monitoring included the preparation of complex graphs tracking the movement of the 12 fixed monitoring points with associated reporting for the project engineers," informed Robert. "We're currently engaged to monitor the compaction rate of certain internal elements of the concrete structure including various columns and the lift core."

Altitude's West Tower is designed with 57 levels above ground and utilizes a mechanical jump form system over the entire floor plate. "Our biggest construction surveying challenge is to maintain the accurate transfer

of vertical survey control over the entire height of the building across its floor plate," said Robert. "The West Tower jump system weighs approximately 500 tonnes and progressively climbs the structure from floor to floor placing incredible loads on different parts of the structure during construction. It's our responsibility to transfer control vertically and set out the required elements needed, together with the ongoing liaison with the sub-contractors involved — all crucial to the timing and completion of the structure."

Other challenges facing JBW include the complex stratum subdivision of the building into a number of retail and residential components, and subsequent staged strata subdivision of the West Tower.

JBW currently has a staff of around 35 including Surveyors, field assistants, draftspeople and administrative staff. "Since the commencement of this project, we have had no less than 15-20 staff members working on the site at different times for different tasks. Currently we have two dedicated survey teams controlling the construction surveying requirements on site," added Robert.

"The relationship we've built-up with the Meriton Group over the past 40 years and the success of the projects like these two iconic towers in Parramatta has only been possible because of our incredibly committed staff who complete these works. Both my Co-Director Wayne Diver-Tuck and I sincerely thank our entire staff and congratulate their efforts for maintaining such a professional approach, attitude and service on a daily basis. We are also pleased to have had such a long and professional relationship with the Meriton Group."

JBW is currently involved in a number of other large-scale projects with the Meriton Group at Pagewood, Rosebery, Dee Why, Waterloo, Lane Cove, Chatswood, and Zetland.

JBW Surveyors' client focus and personalised service, combined with strong surveying expertise, delivers high client engagement and satisfaction, delivering professional results every time.

**For more information contact JBW Surveyors Pty Ltd**, Level 7, 376 Bay Street, Brighton-Le-Sands NSW 2216, phone 02 9335 9700, fax 02 9556 3100, website [www.jbwsurveyors.com.au](http://www.jbwsurveyors.com.au)



**Below** JK Geotechnics provided Geotechnical Engineering and Environmental Consulting Services for Altitude.

**New South Wales most livable suburb, Parramatta will soon have its tallest residential tower.** Soaring 170m skyward Altitude Apartments is a proud collaboration with award-winning architects, Tony Caro Architecture and developer Meriton, who once again have raised the benchmark in apartment living. Beautifully framed by the banks of the Parramatta River, Altitude takes centre stage with 360-degree panoramic views and 53 levels of luxury living and 4 levels of basement which extend to below water level in the adjacent Parramatta River. A development this size begins below ground level and JK Geotechnics provided Meriton with their industry leading Geotechnical Engineering and Environmental Consulting Services for Altitude.

Established in 1976 as Jeffery and Katauskas Pty Ltd, JK Geotechnics have 40 years of experience and more than 28,000 successful projects under their belt. They provide cost-effective solutions and can identify the potential issues affecting a site such as groundwater conditions, landslide risks, acid sulfate soils, and contamination.

“JK Geotechnics is proudly employee owned and managed. We value professionalism through honesty, dependability and integrity. We strive for excellence in practical, innovative and value added solutions. It’s been our goal to help individuals, developers, architects, structural and civil engineers, and local and state government bodies identify potential geotechnical and environmental problems across a range of projects,” informed Associate Geotechnical Engineer Nicholas Smith. “We understand that the performance of buildings and infrastructure hinges not only on their design, but on an understanding of the environment they are built in. Knowledge of the surface and subsurface conditions that can impact on a development’s integrity is essential to the success of the project. By offering qualified and competent services we give our clients confidence. Our fully qualified and experienced staff will provide solutions for developments no matter how complex and technically challenging.”

JK Geotechnics have about 40 professional engineering and scientific staff, four who worked directly on the Altitude project since 2011 completing both preliminary and supplementary geotechnical and hydrogeological investigations and providing detailed design advice for the proposed development. “We subsequently completed detailed 2D Finite Element Modelling to assess potential

impacts of the proposed development on neighboring properties and optimise the design of the boundary retention system,” added Nicholas. “Design of the deep basement shoring system, particularly along the southern boundary, required detailed consideration of the soil-structure interaction as deformations below the neighbouring buildings needed to be controlled. Also, for stability, groundwater cut-off and founding considerations, the shoring system needed to be socketed a significant distance into the underlying high strength sandstone bedrock. The wall system eventually adopted was an anchored diaphragm wall.”

JK’s geotechnical site investigations give a client peace of mind, ensuring the development is protected. JK Geotechnics’ advice can cover issues such as:

- **Foundation Recommendations:** considering the site’s subsurface conditions to recommend appropriate foundation advice for the development.
- **Excavation Methodology:** assessing the site’s subsurface conditions and recommending appropriate soil and rock excavation methods.
- **Retention:** identifying the appropriate temporary or permanent retention systems to both make the construction site and development stable.
- **Slope Stability Issues:** vital when building on steep slopes, whether located in coastal foreshore settings, bushland or near creeks and other landslide risk areas, the assessment methods will help identify hazards and management measures.
- **Groundwater:** critical when basements are proposed, assessment of groundwater levels and flow conditions, dewatering requirements and long term basement tanking requirements, including analysis and assessment for submission to DPI Water.

JK Geotechnics are currently working on a large number of projects across Sydney, including multi-story residential apartment buildings, commercial buildings and transport infrastructure and have the capability to provide efficient, reliable and high quality services.

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**Below** Sypher Solutions supplied and installed all of the lighting solutions for the Altitude Apartments.

Australian owned and operated, Sypher Solutions Pty Ltd has over 16 years of experience in the lighting industry and are renowned for sourcing and supplying the best lighting products for commercial, retail and residential developments. Our ability to supply only quality lighting products at a price which meets the budget of every project has ensured our success and growth over the years.

Sypher Solutions Pty Ltd were contracted to design and supply the lighting products for the Altitude Apartments, located at 330 Church Street, Parramatta. Altitude is a multi-function development on the former David Jones site, designed by Tony Caro.

It includes an East tower at 30-storeys (242 serviced apartments), a West tower at 53-storeys (354 residential apartments), a 3-storey podium including eight commercial tenancies and a 4-level underground car park. The development includes lively outdoor dining and cafes along the riverfront and Meriton's new Riverside Shopping Centre as part of the complex, with the estimated capital investment valued at \$149.9 million.

We are proud to be associated with many of the quality Meriton developments, including Altitude Apartments Parramatta, the current Kent St Mascot project and Lane Cove projects amongst many others.

Working closely with the Meriton team, Sypher Solutions Pty Ltd have helped design and have supplied many of Meriton's Serviced Apartment projects, such as Chatswood and Zetland in Sydney and in Brisbane at Herschel Street and Adelaide Street. Working closely and co-ordinating our work with other trades has proven to be a valuable tool in managing our business. Through advanced management techniques, Sypher Solutions ensures that illumination for the projects is streamlined and their client base is completely satisfied.

Collaborating from the early stages of a project has proven to be advantageous to the development of Sypher Solutions. Expertise in understanding the illumination needs of their clients enhances the lighting process which provides vast opportunities to highlight their skills in creating that unique 'wow' factor, resulting in a positive and satisfying experience for both the client and their company. The undeniable combination of high quality

and unique products always works together in creating smart, energy efficient and cost effective results. "Working alongside interior designers and engineers alike from project infancy allows us to fully understand every design brief attained from a client thus allowing us to create unique lighting solutions for large or small projects. Many of our fit-outs have included successful retail outlets, specialty locations, commercial offices and more," added Tony.

More than ever there is an increasing demand for appropriate building illumination as it can transform any building by creating an exclusive ambiance and an assured customer experience. Factors such as lighting efficiency, budget compliance and quality become huge determinants to many developers. Sypher Solutions have developed specialised products by request, to suit the requests of their clients. This may include working closely with clients to go through a "design and manufacturing" process, and spearheading creations which never cease to intrigue the masses.

By offering flexibility to diversify the current product range and adapt to a gamut of needs, clients are presented with a much needed opportunity to satisfy specific applications on various projects. This further highlights the creative talents and specialised experience of the Sypher Solutions team to successfully supply, manufacture and install various fixtures.

One of Sypher Solutions conscious approaches towards promoting a greener environment is through the use of energy efficient lighting by utilising LEDs. "With access to a wide and diverse range of manufacturers we also custom design lighting products to suit specific customer requirements," added Tony.

"We pride ourselves on our exceptional service and competitive prices, which has led to a loyal customer base that is growing rapidly."



**For more information contact Sypher Solutions Pty Ltd,** Unit 7/71-83 Asquith Street, Silverwater NSW 2128, phone 02 9648 5223, fax 02 9648 5243, email sales@syphersolutions.com.au, website www.syphersolutions.com.au





**Below** Bonacci Group provided award winning structural, civil and infrastructure engineering design consulting services for the Altitude project.



For over three decades Bonacci Group has been providing award winning structural, civil and infrastructure engineering design consulting services from their national offices in Sydney, Parramatta, Melbourne, Brisbane and Adelaide in Australia and Auckland, New Zealand. Bonacci Group were the structural engineers for Meriton's two residential projects in Brisbane, Soleil in Adelaide Street and Infinity in Herschel Street. "Both towers were 77 storeys above ground and the Soleil project won a Queensland Engineering Excellence award in 2013," said Bonacci Group Director Tim Hoare. "We've been assisting Meriton on Altitude Apartments in Parramatta since the beginning and have an on-going role till completion."

In the heart of Parramatta, Altitude Apartments will be the tallest tower around, over 170m high with 53 levels of luxury apartment living, each with spectacular Sydney CBD and river views. Bonacci Group has developed innovative engineering approaches and set standards that are recognised nationally through their many awards.

"We're solution driven. We listen and aim to find solutions that facilitate faster construction, enhance project economic viability and buildability, while maintaining the integrity of environmental sustainability and creative design," stated Tim. "We have an in depth understanding of the

imperatives of developers and builders and the factors that influence excellence and economy in structural design, with strong capabilities in 3D structural and civil modeling and documentation (BIM) systems. For each engagement, we commit a dedicated project team to draw from our collective experience and specialised skill base."

Bonacci Group employ over 120 permanent staff in their various Australian offices. Their new Auckland office has a team of six people who work in the development and building sectors designing new buildings and assessing existing buildings for earthquake compliance.

"In Parramatta our team of ten people are servicing both Meriton's Altitude project and also the residential redevelopment of the Heartland Holden site in Church Street."

Apart from many other high-rise projects, Bonacci also work in the health sectors field with Health Infrastructure NSW and are currently in the planning stages of Taree, Musllbrook and Goulburn Hospitals.

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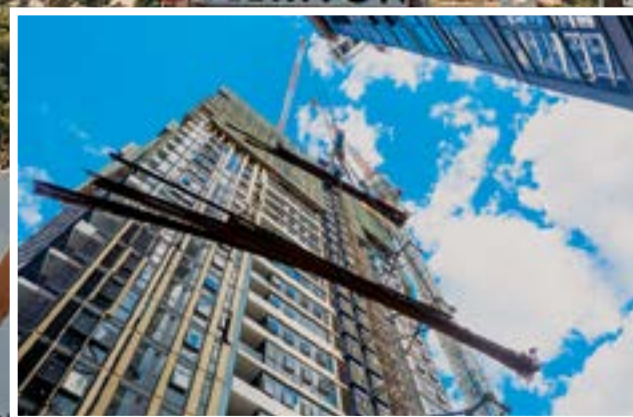
**Below** Avopiling undertook the piling and ground engineering work for the Altitude Apartments.



**Below** Uplift Cranes provided and conducted crane services to the Altitude project.



Diaphragm Wall – Basement retention system for Altitude Apartments



With 27 years of diverse experience in the piling and ground engineering field it's easy to see why Meriton chose Avopiling to do the 'ground work' on the exciting new Altitude Apartment towers in Parramatta. Established in 1989 by current owner and Managing Director, Avo Tevanian, Avopiling is an Australian owned and privately run family business that has contributed to major building infrastructures in every mainland state. "We employ over 120 staff. The head office is in Chatswood, our major workshop facility in Unanderra, NSW and branch offices in Clontarf, QLD and Rivervale, WA," advised David Tevanian, National Operations Manager for Avopiling.

Our team of engineers and site operatives are highly qualified and continue to deliver a wide range of projects including civil works, sheet piling, CFA piling, bored piers retaining walls, ground improvement works, cut off walls, foundations for multi-storey buildings, bridge foundations, drilling large diameter shafts and offshore piling throughout Australia to a broad client base of developers, builders, engineering consultants, architects, mining industry, government and public organisations.

A diaphragm wall with multi-level anchors was designed and built by Avopiling as a basement retention for a three level car park for Altitude Apartments. The diaphragm wall was designed to extend beyond

the final excavation depth and penetrated well into high strength sandstone to provide ground water cut-off. "Our major challenges were the ground conditions and the pre-existing footings and piles from the old building that had to be removed prior to us starting the diaphragm wall work," informed David. "Being adjacent to Parramatta River added additional risk to the works with respect to trench stability and sensitivity for environmental reasons, plus the close proximity to local businesses that need to remain operational whilst we operated on site. Minimal movement of the adjacent wall had to be maintained and guaranteed for the duration of the excavation. We met these requirements during the excavation process by monitoring the wall movement at each stage of the excavation."

Avopiling have been a market leader in the piling industry and continue to provide cost effective and sound ground engineering solutions. Their current involvement include WestConnex-M4 Widening, CSM Wall at Bay Street, Botany, Maitland WWPS Upgrade, Moreton Bay Rail Link, Jupiter Casino redevelopment in Gold Coast and Yagan Square in Perth.

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**Uplift Cranes is a proudly family owned and operated business.** Established by Santo Rapisarda back in 1988, they have been providing top-notch tower crane and mobile crane hire service to its customers for almost 30 years.

After migrating from Sicily at 16, Santo has proudly called Australia his home for over 50 years. Today his team of experienced and professional engineers, project managers, cranes, personnel and rigging services have over 50 years combined industry experience — the reason Meriton chose them for their soaring Altitude Apartments towers in Parramatta.

"Our team possesses insights and expertise that can't be matched in our industry," informed Haisam Nouh, Uplift Cranes National Manager. "We tailor the clients requirements for each project. Also by using our modern and computerised fleet of tower and mobile cranes, we provide greater efficiencies.

"We ensure that each site is inspected by an experienced crane manager or supervisor so that the most appropriate crane is used for the job thus avoiding unnecessary delays. At Altitude Apartment towers we are operating four cranes. They are situated so close to each other this brings its own set of challenges, particularly the staging of the cranes.

"On the east tower we have two external climbing cranes. This meant we had to take into consider the global loads that the crane ties exerted on the building itself. On the western tower we installed one of the cranes inside the lift shaft and climbed the crane internally using the lift core walls. This brought the two cranes servicing this tower within 20m of each other, so our engineering department came up with a new way on how to weather vain the cranes so they wouldn't collide when packed away in free slew."

Uplift Cranes employees 85 staff nationally. At any one time 12 staff have been working at Altitude Apartments since November 2014, including operators, doggers, engineers, erection, dismantle, climbing, tie manufacture and installation personnel. Their tower crane fleet comprises hammer-head cranes, 8 to 24 tonne winch luffing cranes and can also integrate external climbing frames and lift shaft climbing frames to suit construction site requirements.

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