

REACH FOR THE SKY

MAIN CONSTRUCTION COMPANY : GWH
ARCHITECT : DBI Architects
STRUCTURAL ENGINEER : BG&E



This image by Josh Hogan Photography

Sky Residences is a two building development comprising a 19-storey building with 113 apartments and a private residents only roof-top Sky Lounge, and a nine-storey tower with 73 apartments joined by a podium level on Level 3.

Constructed by GWH, the company has over 25 years of experience in commercial, industrial and residential construction and development. Located in Newcastle, New South Wales they have delivered over 600 new homes in the region, since 2017.

SKY Residences, GWH's latest residential development, comprises two residential apartment towers of one, two and three bedroom apartments featuring a range of communal facilities, built over two stages. Onsite works for stage 1, the largest structure standing 19-storeys tall, began in October 2019.

Fronting Hunter Street, one of Newcastle's busiest arterial roads, stage one of the development comprises 113 apartments, a gym, heated pool and a beautifully landscaped rooftop area, the SKY Lounge, offering uninterrupted views over the city. At 66m tall this tower truly epitomises the name Sky Residences. Three ground floor suites are also available for business tenants, ideally located in close proximity to public transport, retail and hospitality venues.

Construction of the second structure fronting King Street began in March 2021. The 9-storey building features 73 apartments with its architectural design complementing the taller tower through consistent use of façade materials.

As the largest residential project undertaken by GWH, the construction and project teams implemented a range of innovative engineering feats throughout the buildings development.

"A 1m thick raft slab comprising 2,000m³ of concrete and 600 tonnes of steel was

developed to support both the Stage 1 and 2 towers, whilst excavation of the shared basement saw the removal of 30,000 tonnes of sand. For construction of the 11m deep basement retaining wall, we used a specialist basement construction technique known as Cutter Soil Mix (CSM), 300 steel beams and 1,800m³ of bespoke concrete mix," explained Project Manager, Brad Aldous.

This was the first time the CSM construction method had been utilised outside of an Australian capital city. A more expensive option, the CSM method was selected for its premium waterproofness and durability, amongst other advantages in comparison to traditional retaining wall construction methods.

"The building contains a number of precast elements all supplied by our partners at Hunter Precast. The Stage 1 tower alone featured 1,360 precast elements, as well as 850 windows and frames manufactured by Hunter Windows," explained Mr Aldous.

The project was successfully delivered through extremely difficult operating conditions, with GWH and many others forced to adapt to the continually evolving COVID-19 restrictions placed on the construction industry across the country. At the projects peak there would have been approximately 140 people onsite including subcontractors. To deal with COVID restrictions, GWH implemented a number of measures above and beyond the Public Health Order guidelines onsite, with these measures enabling GWH to maintain site continuity and ensure progression of the project and delivery by the end of July 2022.

Another key to the company's ability to maintain continuity through a period that saw many other operators struggle to do

so is the strategic partnerships established with companies within Hunter Construction Group. Consisting of seven companies in total offering a range of services that span the construction industry, these integrated partnerships provide GWH unparalleled visibility into the supply and quality of key materials required to construct their developments.

"Access to such a high quality specialist construction network allows us to enjoy unprecedented transparency across all our projects, providing us with: end-to-end visibility of projects, extraordinary architectural and structural solutions, complete transparency of costs and timelines, and the ability to plan, implement and maintain control of projects efficiently and cost-effectively while managing risk," said Marketing and Communications Manager, Shannon Hutton

"In addition to our strategic partnership with Hunter Construction Group, we also have a network of preferred partners whom we utilise for all of our projects, ensuring consistency in results for our clients."

"The opportunity to routinely work with our established network of preferred partners from project to project is one of our greatest advantages. The consistency and continuity that this approach provides ultimately flows through to the quality of the finished product."

"When combined with our long standing strategic partnership with businesses within the Hunter Construction Group, we believe we have the proven formula to deliver exceptional projects on time and within budget, without compromising on quality," continued Shannon.

Successful developments for GWH include AERO, awarded Apartment Development of the Year, 2018 by the Master Builders Association; and Highpoint, a 17-storey apartment building with a ground floor commercial suite located in Charlestown, Lake Macquarie. Recently completed is Darby Plaza, a 7-storey state-of-the-art A-grade office space in the heart of the Newcastle CBD.

For more information contact GWH, Suite 301, Level 3, 352 Hunter Street, Newcastle NSW 2300, phone 02 4966 3766, email admin@gwh.com.au, website www.gwh.com.au



Below BG&E designed the structure and foundation of the two reinforced concrete residential towers of Sky Residences.

BG&E is a leading global engineering consultancy which has been enhancing the built environment for over 50 years.

From structural engineering to façade design, civil engineering to materials testing, and beyond to transport planning, hydrology, flood modelling, digital engineering, asset management and geotechnical – BG&E's expertise is characterised by technical brilliance, innovation and buildability.

New development solutions add value to client projects and enable communities to thrive, including BG&E's structural engineering innovation for Sky Residences, Newcastle's newest skyline tower, comprised of over 19-storeys of luxury apartments.

To construct the foundation of the two reinforced concrete residential towers of Sky Residences, the need to drill 40m into the ground was eliminated, along with the associated time and cost implications.

"To enable GWH to start laying the foundations straight away, we designed a raft slab along with temporary anchors to be used during construction for the complex site, which is prone to movement due to coal mining, has a deep compressible clay layer and a high water table. The anchors held the hydrostatic slab down against the pressure of the groundwater and GWH were able to stop dewatering the site much earlier than usual," explained Structural Designer, Peter Shrewsbury:

As another win for sustainability, and a first for Newcastle, the Sky Residences project also used Cutter Soil Mixing (CSM), which means existing soil was used as an aggregate for concrete instead of importing new materials.

"CSM entails a process where sand from the foundations is mixed with cement to make a retaining wall, which speeds up the construction process and provides a better finish with walls that resembled sandstone aesthetically. We also used slabs of post tensioned in-situ concrete and precast concrete panels for the walls, including the lift core, which is a cost-effective and environmentally friendly foundation method."

The walls are further strengthened with stitched steel plates to ensure they are earthquake resistant – a system BG&E first

designed for GWH at Aero Apartments in 2016.

BG&E's structural engineering services for Sky Residences encompassed the design and analysis of both buildings, including the 2-level basement, for vertical and lateral loads, in addition to working with a CSM consultant for better materials outcomes.

Founded in 1970, BG&E established a solid reputation for the design of tall towers with its engineering of the award-winning 226m high commercial development Central Park in Perth.

By 1989 BG&E were operating in Sydney and soon after that opened offices in Brisbane and Melbourne. Today BG&E has a team of over 800 highly skilled people in 14 offices across Australia, New Zealand, Singapore, the United Kingdom and the Middle East.

"We opened the Newcastle office in 2014 and have been growing in the local market, currently working as far as Gosford, Armidale and Dubbo. We hope to continue to expand the company, especially in our emerging disciplines such as resources, flood modelling and façades," said Peter.

All BG&E offices leverage global experience, which includes groundbreaking high rise developments and hallmarks of ingenuity, including AMP's Quay Quarter Tower.

BG&E worked closely with Multiplex for the 216m tall redevelopment project, which entailed partial demolition of the existing commercial tower at 50 Bridge Street in the heart of Sydney, while retaining over 60% of the core. Australia's first large scale example of upcycling was underpinned by innovative structural and construction engineering, in addition to materials services by BG&E.

Working for clients in the property, transport, marine, defence, renewables and resources sectors, BG&E's clients benefit from multi-disciplinary services from specialist inhouse teams.

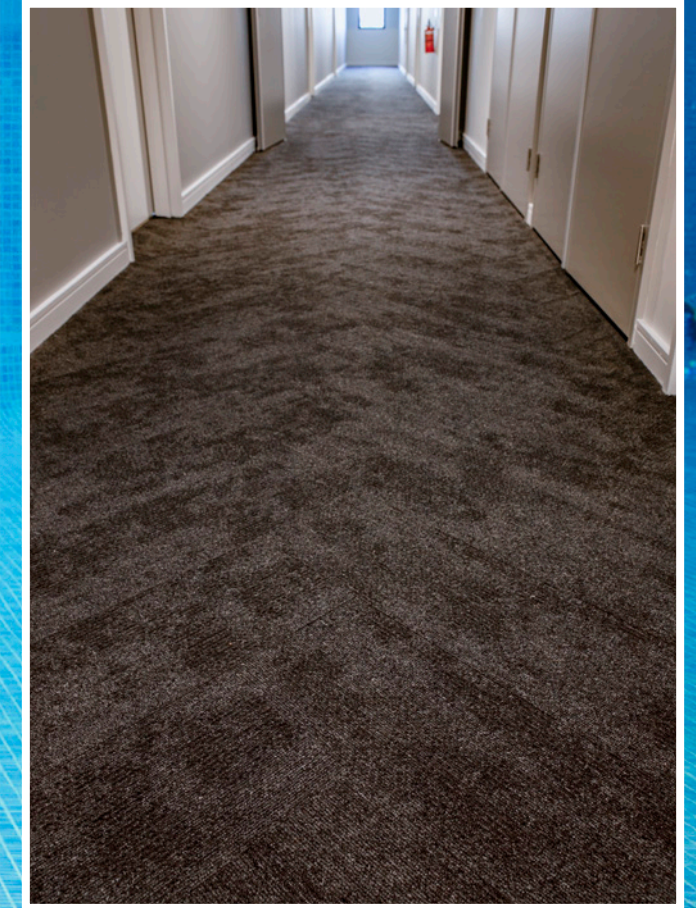
They work collaboratively with leading contractors, developers, architects and government agencies to create projects that make a difference in people's lives.

For more information contact BG&E, phone 08 6364 3300, email info@bgeeng.com, website www.bgeeng.com



Below CF Group worked on the perimeter shoring wall, capping beam, temporary anchors, bulk excavation, foundation piles and detail excavation of the site.

Below All Floors Commercial installed all the flooring in the apartments and common areas across both towers.



CF Group is a geotechnical contracting company offering a wide range of engineering techniques facilitated by state-of-the-art installation equipment and an innovative approach to the construction of structural foundations, ground improvements and retaining structures. For Sky residence, CF Groups experienced personnel delivered and successfully installed CSM perimeter shoring wall, capping beam, and temporary ground anchors. On this project, they utilised their innovative piling rigs for the installation of the shoring wall. The system used, Cutter Soil Mix (CSM) wall, is an advanced deep soil mixing method with sophisticated CSM equipment which allows the mixing of natural ground with a cementitious material to provide high quality retaining wall for deep basements solutions.

At CF Group, their skilled, dedicated and vastly experienced team will bring you the results that you need. For over 15 years, CF Group has specialised in design and construction of a wide range of shoring walls, foundation pile and excavation projects. They are piling and complete basement specialists using state-of-the-art machinery owned by CF Group

They own and operate a comprehensive fleet of piling & earthmoving equipment. The wide range of fleet gives CF Group the advantage to manage and deliver projects for all types of ground conditions and

complexities. The company specialises in shoring walls (CSM, Secant, contiguous, soldier and sheet piles), Foundation piles (CFA, Bored, driven), Ground anchors, structural bracing, excavation, remediation. They also offers others services such as demolition, capping beam, de-watering, shotcrete, underpinning.

CF Group prides itself on its inhouse ability to deliver all of the services necessary to provide the complete basement solution. Commencing with detailed design, the engineers will develop a competitive and comprehensive certified design basements solutions. CF Group was appointed as the main contractor for the Cranbrook School Redevelopment project for Richard Crookes Constructions. The scope included, turn-key package with cased secant wall, capping beam, permanent & temporary anchors, bulk & detail excavation and foundation piles.

Other projects CF Group have worked on are, Pagewood Re-development for MERITON, Barangaroo Re-development for VENTIA and Rockdale Central.

For more information contact CF Group, 154 Euston Road, Alexandria NSW 2015, phone 02 9316 4012, email admin@cfgroup.net.au, website www.cfgroup.net.au

Founded in 2004, All Floors Commercial is a family run business operated by partners Brian Russel and Mel Bower. Following success across Canberra, All Floors Commercial opened an office in Newcastle in 2016 and has been expanding its business in the region.

At Sky Residences, All Floors Commercial installed all the flooring including sub floor preparation, in all the apartments and common areas across both towers.

“We started on the first building in November 2020 laying 15mm thick timber boards with acoustic underlay in the 140 apartments and high quality carpet tiles in the common areas,” explained Brian. “We laid the carpet planks in a herringbone pattern and we were very pleased with the result. In the gym we put down a Regupol flooring system with rubber and foam for acoustic insulation. Stage 1 took 9 months and we then finished the apartments in the second tower in late June 2022. Altogether we installed 9,000m² of timber floorboards.”

“The challenge involved co-ordinating with other trades however the work went very well. This was our first job with GWH and the whole team was very good to work with.”

All Floors Commercial work across the commercial and high rise residential sectors with experience in the completion of large scale developments. They also supply and install flooring to the health care industry, residential aged care facilities, education and hospitality.

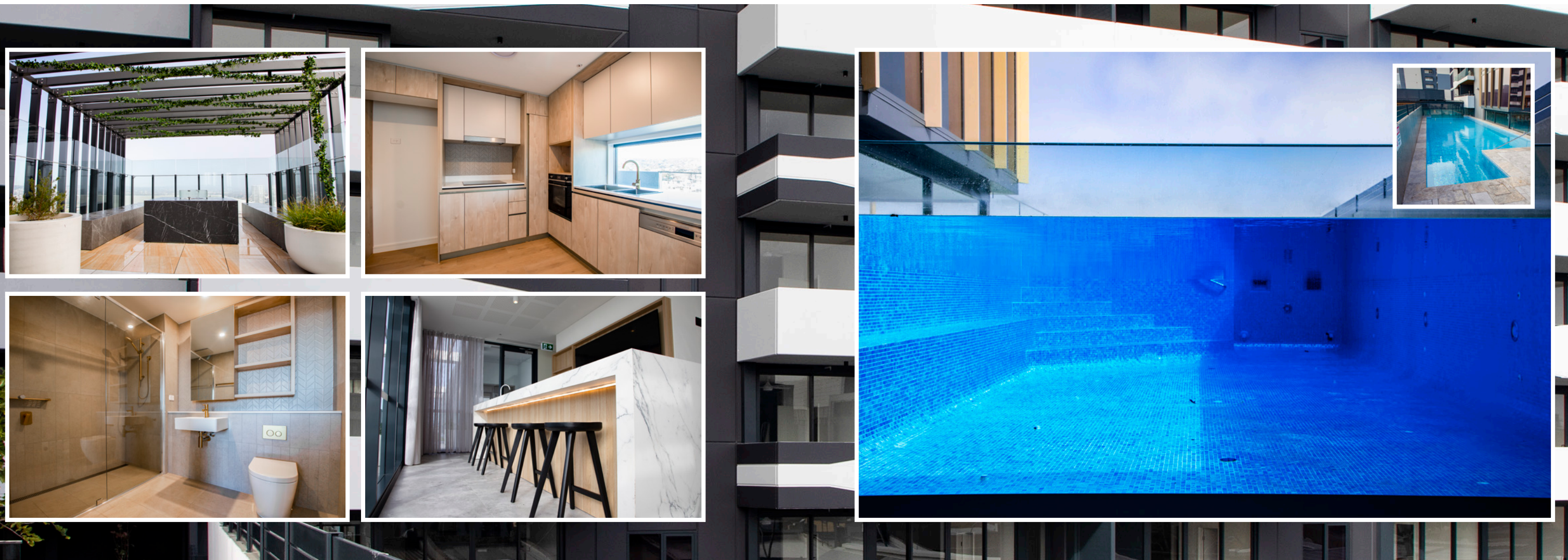
All Floors Commercial employ local labour and support local suppliers to install a range of flooring products including laminates and vinyl sheet, Axminster carpet and rugs, rubber and synthetic grass. They also offer a range of hybrid flooring, a contemporary water and stain resistant timber look-alike option.

A special feature used by All Floors Commercial is an application developed by a colleague called Dash Pivot. The app allows photo and data inputs to be uploaded in real time and it can then be accessed by builders, project managers and subcontractors for updated information.

For more information contact All Floors Commercial, phone 0478 680 646, email brian@allfloorscommercial.com.au, website www.allfloorscommercial.com.au

Below Euroform manufactured and installed cabinetry and joinery items across all the apartments for Sky Residences.

Below 3D Splash was contracted by GWH to construct the swimming pool for Sky Residences.



Euroform is an Australian owned and operated manufacturer specialising in providing cabinetry, stone benchtops and high quality polyurethane finish doors and panels to the wholesale market. For Sky Residence, Euroform manufactured and installed cabinetry and joinery items as well as stone benchtops across all apartments as well as the Sky Lounge on Level 19 and the ground floor commercial tenancy.

Working to the designer's specifications, Director, David Galea worked closely with GWH to choose the best finish, colour and style for the kitchens, laundries, bathroom shaver cabinets, linen and storage. Coordinating with the other interior fixtures, the team created apartments that are both functional and visually striking. Utilising polyurethane painted kickboards and channel handles in Evic Dusty Gold or Evic Graphite, the design team brought a beautiful modern silhouette to the kitchen to compliment the Smartstone™ bench tops.

The fitout of the SkyLounge is one that David is particularly proud of. "Incorporating three Bars, a wall fireplace, firepit with surround bench seating and table areas, the stunning entertaining area is finished off with over 150m² of Smartstone™ Atlas Plan Porcelain and we were able to install it all in just over two weeks".

"Euroform have partnered with GWH for over 10 years" said HR Manager, Janene Liddell. "We manufactured and installed cabinetry, joinery and stone benchtops for their eight-storey luxury residential development Milhorn Apartments in 2018. Recently we completed the cabinetry at their 6,000m² commercial development Macquarie Tower in Charlestown and we are currently working with them to fitout 'One' – a twin tower highrise residential development in Newcastle West. We are looking forward to continuing our business relationship with GWH and are excited to see what new projects they have in the pipeline."

As a GWH preferred contractor Euroform are featured in their display unit at Sky Residences showcasing future projects and capabilities. Operating for over 19 years with 140 employees, the business has the capacity to manufacture and install one off designs through to multi-level apartments. With the three divisions of the business – Cabinetry, Painted Doors/Panels and Stone Benchtops, Euroform are able to offer builders a one-stop-shop for creating kitchens, bathrooms and laundries that will become the hero of any home.

For more information contact Euroform, 20 Kennington Drive Tomago NSW 2322, phone 02 4964 8333, email reception@euroform.com.au, website www.euroform.com.au

3D Splash is Newcastle's leading pool designer with a team specialising in the design and construction of swimming pools of the highest quality and with the lowest maintenance in mind.

In April 2020, 3D Splash started onsite to construct the beautiful sparkling blue swimming pool for Sky Residences.

"As soon as GWH got to Level 5 we were able to start," explained Owner, George Rejtano. "We spent five weeks concreting followed by two weeks installing the plumbing. We then left the job for seven months and returned to spend 10 weeks tiling and finishing off with completion by Christmas 2021. A feature of this pool is a 40mm thick glass wall, at the end of the pool, that fits into the exterior wall of the building. At 1.4m high by 4.2m wide, the wall gives an underwater view."

3D Splash also installed cleaning equipment and heating controls to keep the water at a constant temperature of 27°C.

"Working to install a pool at Level 5 meant that the biggest challenge was access, GWH craned all the materials and equipment including our tools. GWH are a great company, they really are good people to

work with. The weather didn't help either, we had some high winds and it rained on the day planned for concreting," said George.

3D Splash have over 30 years experience in the design and construction of swimming pools for the domestic and commercial sectors across Newcastle, Port Stephens and the Hunter Valley.

"Prior to Sky Residences we were with GWH at their retirement village development at Soldiers Point. We travel around New South Wales installing commercial pools however we prefer to focus on the construction of quality rather than quantity," said George.

"Just before Christmas 2020 we finished a contract for the Australian Government at HMAS Albatross, refurbishing a very old pool, as well as the hydraulics and installing a new sanitation system.

For more information contact 3D Splash, phone 02 4006 5998, email admin@3dsplash.com.au, website www.3dsplash.com.au