BEAUTY AMIDST THE BUSTLE

The $100 million Manhattan on the Park project constructed by Chase Building Group comprises 330 apartments in a mix of 1, 2 and 3-bedroom luxury apartments in a 16-level tower.

Main Construction Company : Chase
Project end Value : $100 Million
Completion : July 2013
Architects : May + Russell Architects
Structural Engineer : AWT Consulting Engineers

Canberra's heart has gained a stunning infusion of residential lifeblood with the $100M Manhattan on the Park project, constructed by Chase Building Group for Amalgamated Property Group. The project's combination of striking design, quality workmanship and excellent location overlooking Glebe Park struck a real chord with ACT residential buyers, with the project sold out months ahead of completion.

Manhattan comprises 330 apartments in a mix of 1, 2 and 3-bedroom luxury apartments in a 16-level tower located in Civic on the corner of Akuna and Bunda Streets. The curved centre of the tower form embraces a level three podium with a landscaped courtyard including a pool, spa and common barbecue area. Level three also features a residents-only gymnasium. The ground and mezzanine levels have been designed to include a number of two storey 1, 2 and 3 bedroom apartments with direct street frontage to Binara Street, and on the ground floor a spacious resident's entry lobby, driveway and retail tenancies.

The first stage of the project from May 2011 to September 2011 involved demolition of two pre-existing 10-storey office blocks. This required great care, to manage potential risks to the neighbouring office block which is just 100mm away from the works and public protection as the site is bounded by public streets on three sides.

Construction commenced in October 2011, and will reach final completion in July 2013. The project has involved an integrated fit-out with comprehensive inclusions such as appliances for kitchens and laundries, stone-floored laundries, fully-tiled bathrooms, broadband cabling and ducted air-conditioning. To increase energy-efficiency, LED lighting has been specified for all the downlights throughout the project.

The structure comprises bored pier basement retaining walls, and substantial insitu concrete construction, including concrete cores constructed using a jump form, post-tensioned slabs and concrete columns up to podium Level 3. Precast and AFS walls were used for the structure from level 3 to level 16, and the roof comprises structural steel. Speed panel was installed to all the non-structural fire-rated walls, both to speed up the program, and to deliver higher acoustic performance than dry-wall.

Manhattan has a fully glazed facade, giving every apartment floor-to-ceiling windows. This maximises the natural light and views, while also taking full advantage of the benefit of Canberra's clear winter days for passive heating. All the windows are double-glazed for thermal efficiency. The balconies which are a major feature of the façade feature frameless glass balustrades, and the facade also includes aluminium composite panel cladding.

"One of the challenges was site constraints, as the footprint of the building takes up the whole site. Another was that all the external facade elements were installed parallel to the construction of the structure off perimeter safety screens. This affected the programming of all the structure and façade works as both were dependent on the movement of perimeter safety screens" said Chase Building Group General Manager, Tom Simonds.

"Chase is accredited with the Federal Safety Commissioner and has a project management plan that is certified to AS4801, ISO9001 & ISO14001 implemented on the project. There has also been a focus on consultation with all employees since the start of the project relating to decisions made regarding safety.

"To date, this has been one of Chase's most successful projects, due to all the hard work of our Client, Consultants, Suppliers and Trade Contractors."

Chase had a team of up to 18 working on the project throughout; ensuring the complex construction management task effectively delivered a quality outcome. Manhattan is positioned as a prestige residential project, and therefore required enormous attention to detail and an extremely high standard of finishes. The Chase team take great pride in having achieved this, together with the trades and consultants. The peak workforce while structure, façade and fitout works were running parallel was between 200 and 250 persons per day.

Chase has won multiple ACT and National MBA awards in high density apartment, residential and OHSE categories in the past five years. The company is building on this success with ongoing work across ACT construction sectors with projects including a 26,000m² NLA office building in Greenway for the Department of Human Services.

Chase employs approximately 40 staff, including project engineers, site engineers, project managers, design managers, site supervisors, OHSE managers, construction workers and general administrative staff. By committing to the implementation of best practice principles, including embedding sustainability into design and construct and refurbishment projects, Chase is delivering built forms which enhance the urban fabric of the national capital.

For more information contact Chase Building Group, 5/2 Yallourn St (PO Box 464) Fyshwick ACT 2609, phone 02 6239 1288, Website: www.chasegroupact.com.au

A STRONG WILL TO SUCCEED

One key element that can put a project such as Manhattan Apartments on the Park on the fast-track to timely completion is having a skilled outfit like Belconnen Concrete on site. They have over 43 years experience in concrete construction, and provided all the pumping, placing and finishing of concrete for the project's structure.

In just under 12 months, and with their entire workforce contributing to the effort at various stages, Belconnen Concrete ensured the project's smooth progress from basement to top out, while delivering a high quality off-form finish for all the in-situ structural facade elements and columns.

Belconnen Concrete used two of their 39-metre separate placement booms, and the company's 61-metre pump, which is the largest mobile concrete pump in Australia.

Founded in 1970, Belconnen Concrete is a family-owned company which has worked with all of the ACT's leading builders on developments including Government projects, commercial offices, major residential projects, retail and Hospitality.

Belconnen Concrete owns and operates seven mobile concrete pumps and five high-rise tower pumps, enabling them to undertake concurrent major projects effectively.

The majority of the company's 30-plus workforce has been trained in-house, with skills including logistics, project management, and estimating complimenting the hands-on expertise of the concrete pump operators and concreters.

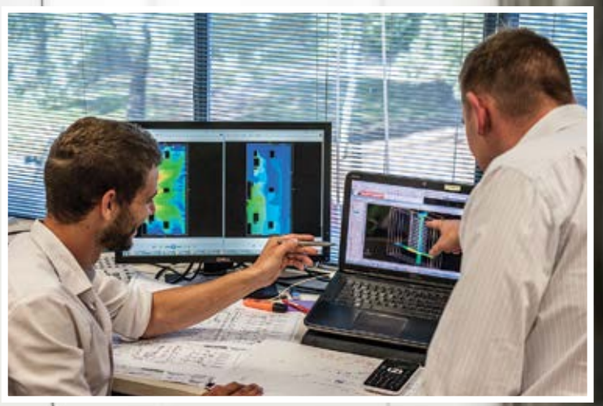
Some of Belconnen Concrete's staff have been with the company for 25 years or more, which speaks volumes about the level of teamwork and professional pride, and provides a steady core of highly experienced personnel who are adept at understanding the needs of major projects and resolving challenges.

Other major projects recently completed include Bridgepoint Apartments, Dockside Kingston and Canberra Avenue Offices.

As an integrated outfit with special expertise in multi-level developments, their skills are highly sought after, particularly for prestige developments where efficiency of placement and quality of finish is paramount.

For more information contact Belconnen Concrete, PO Box 1002 Fyshwick ACT 2609, phone 02 6280 2700, fax 02 6280 2799, email: reception@belconnenconcrete.com.au

TALENTED MINDS BEHIND EFFECTIVE DESIGNS



Some HVAC system designs focus mostly on the mechanics of moving air about and modifying its temperature. The designs created by Northrop Consulting Engineers for Manhattan Apartments go one step further, with extensive Computational Fluid Dynamic modelling (CFD) carried out to ensure a best practice design solution. Northrop's team designed the HVAC systems for the apartments, the car park ventilation systems and fire exit pressurisation systems. CFD modelling was undertaken to the rear of the building, where approximately 290 individual apartment condenser units are located.

"The CFD simulation and modelling was carried out to verify air movement and temperature conditions around the condenser units to ensure performance was not affected by the layout and no dissatisfactory conditions would affect trafficable areas," said Northrop Mechanical Services Engineer, Michael Smith. "Using CFD to simulate performance prior to installation means we can optimise the design, and make improvements to it by verifying conditions and, in many cases, minimising additional equipment or equipment size by taking the safety 'fat' out of the design. Often alternative solutions for BCA compliance can be achieved using CFD verification where a deemed-to-satisfy solution is costly, impractical or impossible. For example: While the new AS1668.2 2012 allows for the use of JetFans, this only allows for the distortion of the air path that would normally be achieved using ductwork. CFD is useful for larger car parks over 75m in length and odd shaped basements where the new code requires many JetFans compared to the alternative solution developed using CFD."

Northrop had a team of three working on the mechanical systems for the project from early project design stages through to commissioning and completion. Northrop is also undertaking the verification of commissioning and installation, and providing inhouse engineering certification of the HVAC systems.

Since 1976, Northrop has been providing a multidisciplinary engineering consultancy across structural, civil, environmental/ sustainability, master planning, hydraulic/fire services, mechanical, electrical building services and water services disciplines. A founding member of the Green Building Council of Australia, the company has been involved in many leading Green Star projects, including 55-57 Wentworth Avenue Kingston, ACT and Discovery House, the first Green Star Office As Built project in Canberra. The company has offices in Canberra, Sydney, Brisbane, Newcastle, Wollongong and the Central Coast.

Other current ACT projects include Engineering House Mechanical Upgrade, Parliament House BMS Upgrade, 18 Canberra Avenue for the Department of Human Services, and the adaptive re-use redevelopment of Juliana House in Phillip.

For more information contact Northrop Consulting Engineers Pty Ltd, 15 Altree Court Phillip ACT 2606, phone 02 6285 1822, fax 02 6285 1863, email: Canberra@northrop.com.au, website: www.northrop.com.au

DOTTING THE I'S FOR INSPIRED DESIGNS

Inspired design is wonderful, though making sure it translates into a building which is up to code is a multifaceted journey best guided by experts like Certis Group (ACT). Their role on the Manhattan Apartments project as Building Certifier involved them from the very earliest stages, working with the architect to ensure every detail would comply with the BCA.

"We do three or four reviews of the design before we issue the Building Permit," explained Certis ACT Team Leader and Principal Building Surveyor, Belinda Hyde.

"We staged the approvals into three Building Approvals – basement to ground, ground to roof structural works, and then a final Building Approval which covers all the works in the building.

"The design for this project is fantastic, it really utilises the space and makes the most of the view. It was also buildable. An energy consultant was brought in to assess the Section J elements, also the Acoustics requirements and Certis Access covered the DDA requirements. "The BCA can have many grey areas, especially with new designs, so we think outside the square. We add value by suggesting improvements to the design which increase functionality.

"The challenges included a product called Alucobond – there was a lot of debate as to whether it could be used and where. There were also challenges with the fire separation elements on the top floor. In this project there are also major roof support beams penetrating the fire-rated walls, and the travel distances for several floors which are covered under the Fire Engineering Report.

"Overall, this has been one of the most well-organised projects I've worked on. Chase is a very good company to deal with. They maintained a very clean and tidy site, and were very good at closing out issues on site."

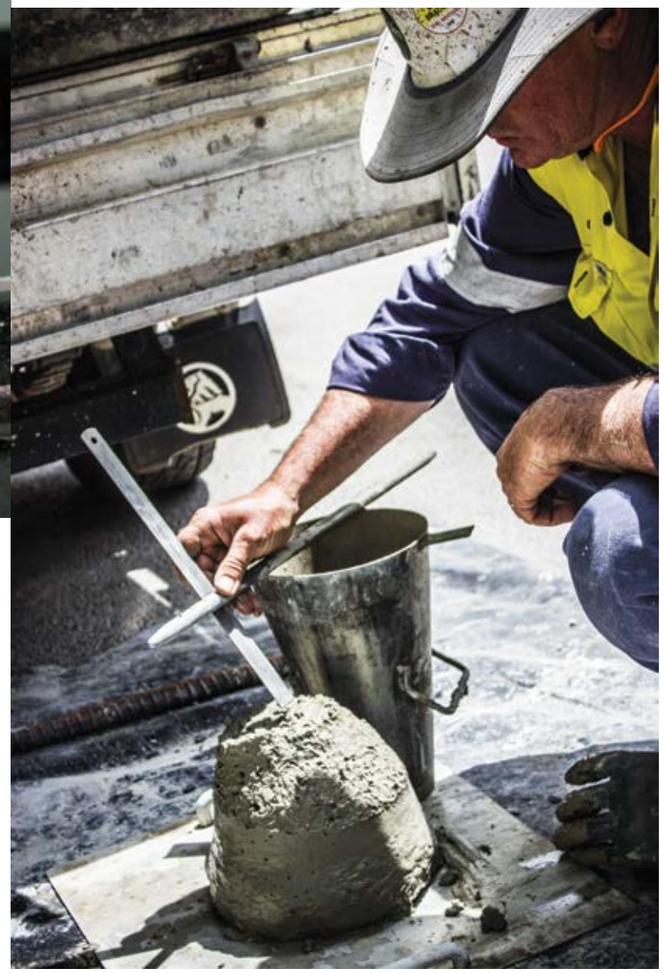
Belinda had fortnightly site meetings with Chase throughout the construction period, which facilitated rapid resolution of any issues. At the end of the build, Certis will also produce the close-out documents for the project; and they will also complete the Unit Titling process.

Certis Group has three divisions: Certis Building Certification, Certis Energy Assessment and Certis Access Consultancy, which advises projects on meeting the principles and requirements of the Disability Discrimination Act (DDA).

With offices in Canberra, Sydney, Brisbane, the Gold Coast and Melbourne, Certis have been in a position to lend their expertise and solution-focused thinking to projects around the nation, including Grocon's Oracle at Surfers Paradise, Kingscliff Beach Hotel on the New South Wales North Coast, NEXT Hotel in Brisbane, and the University of Queensland.

Other recent Certis ACT projects include Centrelink Greenaway (Chase); 2913 Franklin and Aurora with Project Coordination; Gungahlin Shopping Centre (Hansen Yuncken); and Canberra Hospital (Ikon).

For more information contact Certis Group - Canberra Office, PO box 1977 Canberra ACT 2601, phone 02 6232 3000, fax 02 6232 3099. ***Head Office - Brisbane,*** PO Box 1065, Milton BC QLD 4064, phone 07 3144 4600, fax 07 3144 4699, website: www.certis.com.au



STRONG PARTNERS FOR ANY PROJECT

For over 40 years Elvin Group has been helping Canberra develop, with high-quality, efficient and integrated concrete services for projects like Manhattan Apartments. Elvin Group supplied a variety of quality pre-mix concretes, including high strength concrete suitable for high-rise applications. In total, 15,000m^3 was supplied between early 2012 and early 2013. Elvin Group had a team onsite including quality control, operational staff and General Manager, Chris Rutledge. They were supported by the staff at the company's concrete batching plants and office-based project management.

"The real issue with this project was the inner-city location which made access to the site tight. Scheduling and managing the fleet to keep the supply rates up was the challenge," said Elvin Group Managing Director, Barry Innes. "We provided good support to the pump and placement subcontractor, and liaised closely with the builder, to help the project achieve its timeframes. As we are all Canberra-based companies, there is a certain pride in being locals working together to achieve a high quality result."

Elvin Group commenced operations in 1970, and is a family operated business. The company has five divisions: premixed concrete, concrete pumping, Fast Reo (reinforcing steel and mesh), quarries, and concretors warehouse equipment and accessories. The company's two premix plants can produce all grades and strengths of concrete, including a wide range of coloured concrete. Having an in-house NATA-registered testing facility ensures the quality of every batch and enables them to offer clients expert technical advice. Computer batching of Elvin Group products is linked to the computer data on customer works programs and allocations, ensuring timely production and delivery by Elvin Group's fleet of 28 concrete trucks.

The company also recently invested in a concrete colouring machine, which provides computer-controlled batching using liquid pigments capable of creating hundreds of recipe-controlled colours. This system delivers consistent results for precise load sizes, minimises waste, and eliminates the OH&S issues associated with bags of oxide powders. Elvin Group's Concrete Pumping division has both 28-metre and 46-metre boom pumps, operated by highly skilled and safety-conscious staff.

As part of the company's commitment to sustainable development, Elvin Group recently introduced a Zero Waste system. This two-stage system comprises a concrete reclaimer which captures the washout material from concrete making, and separates out the sand and aggregate for reuse. Then, the water containing cement and binder material is treated on-site, along with all run off from the truck and batch areas, resulting in clean reusable water and high quality cake suitable for use in bricks, pavers and road base.

The company has also installed a 55 kW solar power system on the warehouse next to the batching plant to provide a substantial share of the company's power requirements.

By caring for client needs and delivering the highest quality of products and services, Elvin Group has built a substantial reputation in the ACT Industry. Other recent major projects, including New Acton South, and the Linq project for Creative Building, showcase the advantage their comprehensive range of skills brings to any project across the residential, commercial, Government and general construction sectors.

For more information contact The Elvin Group, 7 Cheney Pl, Mitchell ACT 2911, phone 02 6241 6461, website: www.elvingroup.com.au

A SCIENTIFIC APPROACH TO FIRE SAFETY

When Brian Lucas from Fire Safety Science undertook the fire engineering analysis for the Manhattan on the Park Apartments project, there were numerous issues to consider, from structural and design issues, through to the behaviour of smoke and the occupants themselves.

"For a residential project like this one, there needed to be consideration of the fact that residents may be asleep at the time of a fire alarm, and that they may be reluctant to move from their apartments in the middle of a Canberra winter," he said.

Safety for occupants was addressed through the detailed egress analysis of the typical floors of the apartment levels, and the smoke modelling of the ground floor entrance lobby area. For the smoke modelling process, Brian engaged the services of his own systems engineer, who did the computational fluid dynamics modelling for smoke control.

Other issues Fire Safety Science analysed and assessed included the separation of openings in different fire compartments; the opening adjacent to the fire brigade booster assembly; basement travel distances; distances in the basement between alternative exits; exit distances for typical floors and or the pool area; basement fire hydrant and hose reel coverage; fire stair discharge into a covered area; the grade 1 water supply tank; and the car park exhaust design and open deck carpark ventilation.

One of the innovations Fire Safety Science introduced is the design for fresh air ventilation in the building. Ventilation of the car park on levels one and two is enhanced by fresh air naturally and continually blowing in. This is an energy-efficient and fail-safe means of reducing smoke hazards. The ground floor entrance lobby also has extensive natural ventilation, which showed positive effects in the smoke modelling for this common area.

Fire Safety Science also provided an independent audit of all service penetrations through fire barriers, to ensure compliance with the relevant codes and standards, including AS1668.1 Fire and Smoke Control in Multi-compartment buildings, AS1670 Fire Detection Systems, AS2118.1 Automatic Fire Sprinkler Systems.

Brian's involvement commenced during the design stage in early 2011, and continues throughout until completion in mid 2013.

"The project has been run extremely well in respect of cooperation from the design team and the construction team. The excellent cooperation from all parties, combined with a good client who appreciates the process, made this a project I never had major concerns about," he said.

Fire Safety Science provides expertise to projects across the private development spectrum, as well as the Government sector.

"My company's key strength is an ability to see the project from the builder's perspective. The building industry is a tough game, and we should all work together," he said.

For more information contact Fire Safety Science Pty Ltd, 32 Conyers St Hughes ACT 2605, phone 0412583017, fax 02 6162 0163, email: firessci@fss.com.au

Manhatten Apartments on the Park, NSW