

FORTÉ APARTMENTS

Forté is the tallest timber apartment building in the world, it stretches up to 32.17 metres



Location - 807 Bourke Street, Victoria Harbour Melbourne, Victoria

Population - 23 apartments, over 10 storeys including:

- 7 x 1 bedroom (59m²)
- 14 x 2 bedroom, 2 bathroom (80m²)
- 2 x 2 bedroom penthouse (102m²)

Time Frame - Start on-site: February 2012

Begin Cross Laminated Timber (CLT) installation: May 2012

CLT structure complete: August 2012

Target construction completion: October 2012

Project cost (construction) Apartment tower: \$11 million

Design and Construction Lend Lease

Project Overview

Forté will be Australia's first timber high rise apartment building, and the tallest in the world.

A showpiece for natural and new, it is where modern architecture meets a natural building material, called Cross Laminated Timber (CLT), which will unlock a new era in the future of sustainable development and healthier living.

Aspiring to be the first 5 Star Green-Star As Built certified residential building in Australia, Forté will tower over 10 storeys offering 23 residential apartments with ground floor retail. Neighbouring the tower will be 4 luxury townhouses. The tower is designed and constructed by Lend Lease and will reflect the contemporary inner-city lifestyle of Victoria Harbour while combining environmental initiatives, such as LED lighting and smart metering

Lend Lease has a proud history of landmark innovations in sustainable construction and this project continues this innovation and commitment.

Key Features

- Forté will reflect the modern urban-city lifestyle of Victoria Harbour while delivering a healthier more natural living environment for occupants. Each apartment is dual aspect and has been designed to make the most of sunlight and natural ventilation.
- Designed to be thermally efficient it will require less energy to

heat and cool than a typical code-compliant apartment.

- All apartments will have smart meters which link to an in home display and show real time and historic data on energy consumption.
- Indoor environmental quality will be maximised through good levels of daylight, solar shading, natural ventilation and acoustic treatment.
- High fresh air quality due to reduced chemical emissions from paints, carpets, joinery and wood products.
- Forté is conveniently located near public transport, car share, bike share facilities and general amenity shops.
- Balcony vegetable gardens and close to Victoria Harbour community garden.
- Sustainable, affordable and environmentally sustainable.

Visit www.forteliving.com.au for further information

Cross Laminated Timber

Sustainability and a lowered environmental footprint have been the key drivers behind the wide use of engineered timber, referred to as Cross Laminated Timber (CLT), in Europe for more than a decade. A building material that has been around for centuries, timber, enables the permanent capture of carbon so buildings become essentially 'carbon sinks'.

Using innovative technology, timber panels undergo a process whereby they are stacked at right angles and bonded together over their entire surface and then hydraulically pressed. This process delivers a viable alternative to concrete and steel that can withstand the same pressure as prefabricated concrete. Being designed and produced in a factory environment means it is also faster to build, cost effective, cleaner and has a higher quality finish.

Forté will reduce CO2 equivalent emissions by more than 1,400 tonnes when compared to concrete and steel – the equivalent of removing 345 cars from our roads.

The shift to green technologies and materials, such as CLT, is paving the way for the future of sustainable development that will enable the concept of 'green' to go beyond buildings to how we create liveable, sustainable communities and cities.



Forté Apartments, VIC



ACOUSTIC + THERMAL COMFORT

Martini Industries is leading the Australian market in the development and manufacture of high performance acoustic and thermal insulation products. Founded in Sydney, in 1995, the company is rapidly expanding and gaining the attention and support of architects, engineers and building companies across Australia.

Martini Industries is responsible for many specialised product brands within the Australian construction market including: 'Polymax' acoustic insulation, 'deCO Series' decorative acoustic panels, 'Polymax' thermal insulation, and 'Polyair' thermal reflective insulation.

The company's cutting-edge product range and green approach is the perfect fit for the Lend Lease Forté Apartments development in Melbourne's Docklands. Martini Industries followed the developer's brief to produce, a sustainable, "breathable" thermal insulation composite - Polymax Absorb HD 50mm Breathable with a breathable reflective facing. The customised design prevents the build-up of moisture, allowing the timber to breathe and protect the structure's timber shell.

Martini Industries Technical Services Manager Malcolm McBlain said the company was able to adapt an existing product to satisfy the building's thermal and vapour performance requirements. Mr

McBlain said this 18 to 24 month assignment involved research into Melbourne's weather patterns and extensive consultation with the developer Lend Lease and KLH UK, the manufacturer of the distinctive cross laminated timber panels.

The company's scope of work also extended to internal acoustic insulation. Nicholas Tselios Architectural Acoustics Director at Renzo Tonin and Associates was assigned the task of ensuring the revolutionary timber apartment building's acoustic privacy, utilising Martini Industries' products.

With its head quarters in Sydney and manufacturing facilities in Sydney and Melbourne, Martini Industries provide environmentally sensitive, acoustic and thermal solutions nation-wide. From customised acoustic and thermal applications such as the Lend Lease Forté Apartments, to conventional commercial and residential applications, Martini Industries products and technical support services will deliver exceptional performance outcomes.

For more information contact Martini Industries Pty Ltd, 4 Macdonald Road Ingleburn NSW 2565, phone 02 9829 2299, email sales@martini.net.au, website www.martini.net.au, website www.polymaxinsulation.com.au, website www.reflectiveinsulation.com.au

THE SCIENCE OF FIRE

When Lend Lease set out to create Australia's first timber high-rise residential development; the tallest timber structure of its kind globally, fire safety was of paramount concern. Built from revolutionary Cross Laminated Timber (CLT) panels - a solid wood alternative to orthodox steel or concrete based structural products - the nine-storey building's unconventional structural composition presented numerous design safety challenges for the team at Scientific Fire Services.

What makes Forte Apartments, in Melbourne's Docklands such a unique development is the substantial use of the sustainable building product. From the first level up, the structure's load bearing walls, floor slabs, stairwells and elevator cores are composed entirely from wood. The result: Australia's first carbon-neutral apartment building.

In order to achieve compliance with the Building Code of Australia's performance requirements, Lend Lease sought the services of fire safety and risk engineering specialists Scientific Fire Services. Scientific Fire Services provided the innovative and intelligent fire safety engineering solutions the design team required to deliver the first building structure of its kind in Australia.

Scientific Fire Services facilitated the delivery of this pioneering project by applying fire safety engineering principles in line with the timber product's composition and fire related characteristics. The consultancy group's rigorous assessment processes involved detailed analysis to determine the performance of the CLT panels under fire conditions. "By understanding current CLT research and technology coupled with the application of fire safety engineering methodologies for the Forte building, our engineers successfully delivered this truly ground-breaking project," Scientific Fire Services Director and Principal Russell Kilmartin said.

Scientific Fire Services was established in Melbourne in 2003. Today, the company employs 10 fire safety and risk engineers and the services they offer include: fire safety and risk engineering consultation, education and training. Scientific Fire Services has offices in Sydney, Melbourne and Hong Kong and a significant presence in the South East Asian market through their agents in Malaysia and Singapore.

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GOING WITH THE FLOW

The revolutionary Lend Lease eco-development Forté has set a new benchmark in global building standards, and Abey Australia's tapware - the latest environmentally conscious product in line with the Federal Government's water efficiency scheme – is a complimentary feature.

Abey's exclusive range of bathroom and kitchen tapware is used throughout the luxurious build. The European styling befits the finely appointed suites and meets the project's energy rating excellence, as Abey Australia regional sales manager (Victoria, Tasmania and WA) Cameron Hill explains: "Everything we supplied was 5 Star WELS (Water Efficiency Labelling and Standards scheme) efficient, watermarked, low flow tapware, which ensures the longevity of Melbourne's precious water supply."

Creating a product that uses less water, yet still delivers a functional flow was no mean feat, especially considering the three-month lead-time. "We achieved this standard through a product altering process. Through various stages of design, trial and testing in conjunction with IAPMO R&T Oceana (a world-wide certification authority) we have developed a valve that regulates the water to produce a 5 Star WELS rated flow," Mr Hill said.

Innovation is synonymous with the brand. Founded in 1953, Abey has been a pioneering manufacturer of plumbing and building products

for the commercial sector since day one, bringing the latest designs and technologies to Australia and New Zealand for 56 years. Abey entered the high-end tapware market as the sole agent of world leader Gessi in the new millennium and became the go-to source for sophistication and luxury fit-outs. Today, the market leader has expanded its range of European sinkware, tapware and appliances for the kitchen and bathroom to include Barazza and Mastella Design. With a portfolio of products in excess of 1200, Abey also supplies skylights, ventilators, fasteners and gas accessories.

A third generation family-owned Australian manufacturer - still producing 55% of its Abey exclusive collection on Australian shores - Abey's reputation for excellence is endorsed by its connection with the distinguished Lend Lease brand. Renowned for high-end builds, in December 2012 Lend Lease was announced as the company behind Sydney's \$2.5billion Darling Harbour precinct revitalization, in conjunction with Destination Sydney consortium.

Abey's longevity and reputation is attributed to its commitment to best quality, best practice approach, exceeding Australian building codes across all builds, from cost sensitive projects to the highest entry-point commercial residential sector.

For more information contact Abey Australia, phone 03 9747 7777 website www.abey.com.au



DOMINATING THE SKYS

Clark Cranes' Raimondi MRT 84 tower crane dominated the Melbourne skyline for 14 weeks. Measuring almost 50m in height, the fully remote controlled lifting device was engaged to move all the pre-fabricated Cross Laminated Timber (CLT) panels of Australia's most anticipated high rise apartment.

Forté Apartments in Melbourne's Victoria Harbour, is a nine-storey, timber clad residential development by Lend Lease, constructed using innovative sustainable building product CLT.

Moving the interlocking timber sheets around the Docklands building site was a calculated process, as the Victorian tower crane hire and sales company's Managing Director Michael Clark explains. "Unlike a traditional concrete panel that you can put props on and drill into if necessary, the CLT's are facade panels, so the challenge for us was ensuring great care was taken to retain their finished condition."

The free standing hammer head crane was positioned aloft a concrete slab at 42m. Set at its maximum height from the beginning ensured no down time and improved efficiency. The crane's operation capacity and low noise output made evening and weekend work feasible, allowing the company to adhere to the ambitious 10 week build schedule.

The significant operation was completed by a crew of three trained personnel – one crane operator and two dogmen.

The Raimondi tower crane dealer for Victoria, Clark Cranes service metropolitan Melbourne and will have a presence in Queensland within 12 months. Specialising in the hire and sale of luffing and hammer head electric tower cranes, since its inception in 2008, the company's fleet has expanded to 14.

Complex briefs and tight spaces are the Hurstbridge-based contractor's specialty. Clark Cranes is currently engaged on a Team Building project on Little Collins Street, the narrow, one-way lane in Melbourne's CBD.

Clark Cranes employs eight full-time staff and is affiliated with mobile crane specialist Associated Mobile Cranes (AMC). Clark Cranes' clients benefit from the company's capacity to leverage the services and 30 years combined experience across both divisions.

For more information contact Clark Cranes, 831 Main Road Hurstbridge Victoria 3099, phone 03 9718 2100, fax 03 9718 1780, email michael@clarkcranes.com.au, website www.clarkcranes.com.au

A HARD ACT TO FOLLOW

Beenak Constructions Pty Ltd has the concrete solution for any project purpose. A leader in the concrete construction industry, Beenak was formed in April 2003 and specialises in large-scale commercial developments, production facilities for the food production sector and specialised residential builds. Managing Director John Salvitti has over 30 years experience in the construction industry and is supported by a team of 20 qualified personnel.

Offering a comprehensive package of concrete solutions, including formwork (general and suspended), reinforcement (supply and fix), staircases, installation of floor hardeners, installation of stainless steel slot and wide drains and refurbishment of factory floors to food industry standards, Beenak is a process facility design and construct project expert. The well resourced construction house is backed up by a civil division capable of bulk and detailed excavation.

Beenak's reputation for quality and expertise in its field has seen the brand linked to various prominent builds, including the Lend Lease Forté development. On site from April 2012, the complete concrete works contract involved construction of the base slab, columns, lift shaft and walls followed by the first floor slab and finally low shrink concrete screeds for sound proofing. Site Manager Stuart Revell oversaw the structural component and managed an accelerated works program, involving up to 20 concreters, form workers and steel fixers. In keeping with the development's minimalist environmental approach Beenak Constructions in conjunction with concrete suppliers developed unique Green Star –rated concrete mixes to meet the client's environmental brief. The Green Star concrete mixes were used for the complete structural package in addition to thin sound deadening screed consisting of low shrink, low water content concrete laid over 10mm sound deadening reconstituted cork. "This screed mix was the result of several development stages and rigorous testing," Mr Salvitti said.

Mr Salvitti credited his team's ability to coordinate a tight accelerated work schedule with other on-site contractors while meeting project milestones to the company's existing relationship with principal builder Lend Lease. Beenak has been associated with Lend Lease since 2003.

The Bayswater based concrete specialist is involved with multiple high profile builds and domestic projects throughout Victoria and the diverse nature of Beenak's project capacity and purpose is evident in the brands current jobs list: the GTV 9's Heritage Redevelopment at Bendigo Street Richmond and recently completed food manufacturing facilities for Fabbri's Smallgoods at Campbellfield and Cassalinga Smallgoods at Clayton South.

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