



ATTUNED TO SOPHISTICATION

DEVELOPER : Longriver Investments
MAIN CONSTRUCTION COMPANY : Hickory Group Pty Ltd
ARCHITECT : Rothelowman Architects
STRUCTURAL ENGINEER : Hickory Building Systems & Rincovitch Consultants Pty Ltd
PROJECT MANAGER : Sinclair Brook
PROJECT VALUE : \$90 million

The \$90M La Trobe Tower is a 43-level residential tower comprised of floor-to-ceiling windows which allow light and city views to permeate through all 206 luxury apartments. Fitted with warm timber finishes, clean modern joinery and a piano key inspired glass façade, these innovative features reflect the precinct's strong musical heritage.

This year marks Hickory's quarter century in business. Since 1991 when fourth generation builders, Michael and George Argyrou founded Hickory Group, the company has steadily evolved from a small family building business to one of Australia's largest apartment construction groups.

Hickory has forged a reputation as an innovative and dynamic company that has grown into a nationwide group of construction, structures, façades, manufacturing, fitout and crane logistics specialists.

"We have also made significant advances in developing prefabricated construction technology over the last eight years and are now recognised as leaders in this space, particularly in the area of volumetric, prefabricated construction for high-rise projects," informed Hickory's Alistair Taylor.

The latest project setting new records for tall building construction using the innovative Hickory delivery model is La Trobe Tower. A 43-level residential tower at 323 La Trobe Street in central Melbourne by developers Longriver Group and designed by Rothelowman Architects.

"On La Trobe Tower, Hickory is the principal contractor for the prefabricated structure including manufacture, installation façade procurement and installation, plus the manufacture of fully fitted modular bathrooms," said Alistair.

Of Hickory's 600 employees, approximately 22 worked in the factory manufacturing the panels and bathrooms for the project, while another 120 were involved on site and in the project management team.

"This is the first project that Hickory Building Systems (HBS) Integrated Structural

System has been used," added Alistair. "Due to the size of the prefabricated structural units this required oversized deliveries to take place in the evening when trams ceased operation on La Trobe Street. It also required an Extended Hours Construction Traffic Management Plan that we negotiated with the Melbourne City Council and stakeholders in the immediate vicinity. It's now one of the first city projects to successfully implement extensive after hours works."

La Trobe Tower is the world's tallest project to date to use prefabricated structural construction and Hickory's patented structural building system and Sync Bathroom Pods.

The building's aesthetics pay homage to the precinct's musical heritage, with the glass façade punctuated by fin details inspired by a tuning fork and piano keys.

A common area on Level 15 provides spaces for resident interaction and features a lounge, outdoor terrace, kitchenette and gymnasium. Floor-to-ceiling windows allow light and city views to permeate the 206 luxury, one and two bedroom apartments, which are fitted with warm timber finishes and clean, modern joinery.

"We used shotcrete for the vertical concrete elements, in conjunction with precast elements. All 206 apartment bathrooms are fitted with Hickory's Sync prefabricated bathroom pods. This assisted to minimise the number of workers on site, reduce the number of crane lifts and to expedite the apartment fitout process."

Hickory's construction and delivery methodology model means projects can be delivered 30% – 60% faster. Their integrated structural prefabrication, proprietary façade

system and bathroom pods compress construction time and Hickory's patented interlocking façade system is engineered to enable fitting of the curtain wall façade to the structure off site. This ensures greater site safety and results in a quality end product that is delivered on time.

In recent years Hickory has been recognised by both the construction and manufacturing industry. They have twice been named 'Australia's Most Innovative Construction Company' by BRW, and were also awarded the Victorian Government's Manufacturing Hall of Fame 'Large Manufacturer of the Year Award' in 2015.

Other current Hickory projects using the same building methodology as La Trobe Tower now include Collins House, Melbourne (60-levels, 271 apartments); Peppers Kings Square, Perth Western Australia (17-levels, 120 room hotel).

Other projects bearing the quality Hickory workmanship name include Parque Apartments, St Kilda Road (332 apartments over two glass towers); Opera Melbourne, St Kilda Road (19-levels, 228 apartments); Claremont Manor, South Yarra (19-levels, 318 apartments); New Quay Promenade, Docklands (437 apartments over two towers); The Fifth Apartments, Lonsdale Street Melbourne (51-levels, 402 apartments); Lakeside Apartments, Albert Park (12-levels, 159 apartments); and Banksia Apartments, Docklands (18-levels, 108 apartments).

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ENGINEERING NEW HEIGHTS

Rincovitch Consultants Pty Ltd was founded in 1986 by Angelo Rincovitch and has established a reputation for excellence in high rise structural engineering. With a passion for efficiency and constructability, Angelo was a key figure in the renaissance of load bearing precast building construction and post-tensioned floor slabs in Melbourne in the 90s, which was a major influence in the design and construction of multi-storey apartment buildings.

Over the years Rincovitch Consultants has developed a reputation for its unique, pragmatic and constructability minded approach, which has won them many industry awards as well as the successful structural design and construction of over 80 buildings between 15 and 70-storeys. Having established good working relationships with many major developers and builders, Rincovitch's main ethos is 'treat the client's money as if it is our own', in their drive for innovation and creativity to deliver cost effective building design.

This continuing dedicated, passionate approach to structural engineering is now led by the Managing Director, Rocco Carinci, and Directors, Harry Lambis and Charbel Nasr. Highly experienced, skilled and hands-on, they

ensure that every project achieves the high benchmark expected on Rincovitch projects. They pride themselves on their friendly, personalised service, meeting deadlines, prompt response times and most importantly, delivering high quality documentation, which is continually honed and improved by practical experience and feedback.

With the Head Office in Melbourne and now a similar sized office in Sydney, the management team are ably supported by a talented team of structural engineers and design draftspersons, committed to satisfying client needs, proud of the high quality documentation they create and the professional service they provide.

For the La Trobe Tower project, Rincovitch Consultants were responsible for the design of conventional structure up to Level 2, as well as the complete and critical review of the structural adequacy of the Hickory Building Module System. "The key structural component of the system involved the module steel posts and load transmission to high strength shotcrete wall elements," said Charbel. Another innovative feature was a ground floor slab, ring beam, which then allowed excavation, foundation and basement works without the need for ground anchors to soldier piles.

The project is a magnificent 43-storey residential development offering an inner city lifestyle complete with innovative, state-of-the-art living spaces and world class architecture influenced by Melbourne's jazz precinct.

The majority of Rincovitch's clients are builders and developers and their project list is extensive and varied. "Our clients value our special capability to see beyond the pure structural engineering problem and utilise our experience and lateral thinking to devise creative and cost effective design solutions for them," said Charbel. "Our construction knowledge ensures that our designs are practical, buildable and economical."

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MITCHCON TAKING SHOTCRETE TO NEW HEIGHTS

Mitchcon was approached by Hickory in early 2014 to discuss the possibilities of using shotcrete as an alternative to insitu concrete in the core and shear walls of their 43-level La Trobe Tower project.

Hickory not only required structural shotcrete sprayed up to 43-levels, but they required up to 70m³ per day (which is the volume in one level), of 50, 65 and 80mpa shotcrete (for overhead spraying), and the shotcrete needed to reach a high early strength of 40mpa at day three.

Hickory Director, George Argyrou and Shan Kumar (Principal Engineer) knew this was a challenging request, as this had not been done anywhere in the world.

Managing Director of the family business, Mitchcon Pty Ltd, Andrew Mitchell, Manager of Operations Jake Mitchell, and Project Manager Lewis Mitchell saw this as an opportunity to use the experience gained over almost 30 years of concrete pumping and spraying, and began workshopping with Hickory over the next 18 months to satisfy the project brief.

Mitchcon needed to be creative in meeting the challenge of the volumes of shotcrete required per floor per day to keep up to the demanding project timelines. Another challenge was to ensure that the concrete pump had the capacity to spray the shotcrete up to 43-levels, and still achieve the penetration required to ensure the walls were structurally sound. After seeking much advice from manufacturers all over the

world, Mitchcon decided to purchase a high pressure Putzmeister concrete pump through David Bond from CPE Machinery.

Mitchcon and Hickory then looked to the shotcrete mix itself, and with a long relationship with Holcim, began to work with them to design and test the shotcrete so that it could firstly meet the high levels that Hickory demanded, but also withstand the pressure that would be applied to the mix when being sprayed up to Level 43 of the tower.

Timely deliveries to site, correct slumping of the mix, a careful eye on the pressures on the pump, certified and experienced nozzle men, cutters and finishers were all required to maintain the quality of the end product of the structural walls.

Mitchcon would like to congratulate Hickory on the innovative project design, and can see this method of construction becoming a familiar seen not only over Melbourne, but many city skylines throughout the world.

It has been a pleasure to be involved in such a challenging project, and Mitchcon thanks Hickory for the opportunity to be part it.

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