

Tower of

Grocon's sizeable
Eureka Tower Project

Strength



Eureka Tower

Cost: \$500 Million

Height: 300 Metres, 92 stories

Architect: Fender Katsalidis

Engineers: Connell Wagner

Construction: Grocon Pty Ltd

Developer: Grocon Pty Ltd

Apartments: 570

Location: Southbank Precinct, Melbourne

Perhaps one of the most amazing things about Eureka Tower, aside from its impressive height, is the simplicity of its appearance. At first glance, this simplicity, and the elegance of its design, belie the true nature of what is undoubtedly one of the world's true landmark structures. For in truth, to create Eureka Tower, some of the most complex and advanced technologies have been employed in the construction processes - and these technologies are in fact responsible for the very existence of something that a very short time ago would have been deemed impossible.

The vision of architects Fender Katsalidis and the determination and experience of Grocon, who were involved as constructor and developer, are significant factors in the eventual result, which now rises elegantly 300 metres above the Yarra River in Melbourne's Southbank Precinct.

Engineered by Connell Wagner, the tower comprises a central diamond footprint, which forms the building's core, and is continued to the top. On each side of the diamond, there are rise offset rectangular outriggers ascending the tower and finishing at varying elevations. These outrigger sheer walls create an important part of the tower's strength. They were deemed the most effective way of increasing tower height, without compromising the apartment views, or its slender profile. Other significant features of the

tower's strength are harder to see; advanced 100MPa high-strength concrete was manufactured and used for the base, blade walls, and vertical columns around the central core. Each batch of this high-strength concrete was tested on site and poured within half an hour of manufacture to ensure an accurate and predictable set. As the height of the tower increased, the MPa of the concrete was reduced to take into account the lower structural requirements, and the top floors are constructed with 40 MPa concrete. Coupled lift cores are also incorporated into the design to improve the building's structural integrity.

To accommodate the complex and unusual geology of the site, and to provide a stable foundation for the 200,000 tonne building, 40-metre deep rock socketed piles are bored into the siltstone bedrock to form the foundations, along with 30-metre deep continuous flight auger (CFA) piles set on basalt. These comprise one part of the design that accommodates the flexibility of the tower and takes into account the forces that come into play on a super-high-rise of this nature.

Without significant seismic factors, the main environmental influence on the tower is the wind. Extensive analysis and testing, by MEL Consultants in Melbourne, and the University of Ontario in Canada, prior to and during construction, including the use of a 1/400 aerolastic scale model in a wind

tunnel, and extensive computational fluid dynamic modelling, established the parameters of the design. They were also instrumental in the creation of tuned liquid based damper tanks in the upper levels that form an inertial counter balance to the tower's lateral acceleration or movement. The liquid damper also doubles as the emergency water reserve for the building's fire systems. This liquid damper design is the first of its kind in Australia.

Being the tallest residential building in the world, when measured from ground height to roof, and excluding architectural roof features such as aeriels and spires, Eureka Tower has generated significant kudos and interest from all over the globe. All the apartments are designed with the most luxurious of fittings, and all have magnificent panoramic views from their floor to ceiling double glazed windows. Twelve high-speed elevators, some of which almost travel fast enough to be booked in a school zone, ensure a smooth and swift journey up and down the tower. There is a cinema, and a gymnasium, an infinity pool, and a spa and sauna for the residents, not to mention numerous shops, cafes, and restaurants within easy reach.

Grocon is the largest privately owned development and construction company in Australia, and its involvement and dedication to the landmark project is a clear indication of its expertise, professionalism, and passion. The creation of a building such as this is more than just a construction project

- it is a landmark in Australian construction history, and the creation of a vision. The harnessing of technology and innovation to bring that vision into reality is the real achievement of Eureka Tower, and the benefits of the advances in construction methods, and technologies realised on this project will be far reaching in their effects both in Australia and overseas. Fittingly, the top seven levels of the tower are coated in gold, and perhaps this hints at a link between Eureka Tower and the ancient Pyramids of Egypt, which were also tipped in gold when first created - both were also structures well ahead of their time, and both are now significant landmarks. It also symbolises a link between the Tower and the Ballarat goldfields of Victoria in the 1850s, where the legend of the Eureka Rebellion was born.

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Keeping their boundaries

Reeds Consulting have two core goals, firstly to 'achieve customer satisfaction through the quality of their service', and secondly to 'maximise efficiency in providing these services'. On a project such as the Eureka Tower, both these paradigms of their business were an integral aspect of their involvement.

The company incorporates a highly experienced land surveying service, and civil engineering department, and their extensive knowledge and experience of the broader property development field enables them to provide development consultancy services as well.

On the Eureka Tower project, Reeds provided the initial site survey and follow up surveys, identifying title boundaries, location of features on and adjacent to the site, the location of services, and the measurement of site levels. The site plans were prepared using the latest data collection technology and then digitised, to enable consultants, architects, planners, and engineers easy access and speed of transfer. They also assisted in the creation of three 'super-lots', through a series of subdivisions and the creation of complex easements, for the three areas of the development, being the Eureka Tower and retail areas, the Travelodge Hotel, and the car park which all shared access points and structure. This was done as a solution to the original requirement of stand-alone title that was envisaged for each section of the development.

As architectural plans were made available, Reeds undertook the tower subdivision, working in stages so that the lower levels could be occupied as the upper levels were being completed. With as many apartments as one might find in a small suburb, this was a challenge that Reeds were well equipped for, and although the size was significant it is this sort of work that Reeds specialise in. The subdivision process also involved the creation of a number of 'bodies corporate' to accommodate the varying use areas, from retail, to residential, and car park, ensuring they could operate effectively and without hindrance to each other.

The prestigious high rise, Eureka Tower provided an ideal opportunity for Reeds Consulting to demonstrate what they do best. That is land surveying, and specialised high-rise subdivision. They are a quality-accredited company with full quality endorsements and their ability to undertake complex and challenging projects has been well proven with their successful expedition of the works on this landmark development.



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VIC Special Feature - Eureka Tower

Designing a world-class landmark

Many of the great cities around the world have become identifiable by their architecture, and more often than not by a single skyscraper or tower. With the construction of Eureka Tower, Fender Katsalidis the project architects, along with the developers Grocon, Tab Fried and Nonda Katsalidis, have created just such an iconic landmark for the city of Melbourne. The architecturally sculptured tower rises from the city as an identifiable figure of progress.

Originally envisaged by previous landowners as two separate towers, both the developer and the architects soon came to realise that there was a need for something quite exceptional on the chosen site in Melbourne's Southbank precinct. The desire to create a landmark building, and community in the inner city area was commercially astute and in reality very practical. The point of difference provided by the Eureka Tower ensured that occupancy rates were high from the outset and the provision of a wide variety of apartment types and cost entry levels guaranteed this.

Fender Katsalidis, were keen to make a statement that would invigorate the Southbank area, and generate iconic status and prestige for their client group. This, they were clearly able to achieve with the \$300 million, 92 storey tower (technically the world's tallest residential tower). Rising majestically from the surrounding buildings, the sculptured lines of the tower provide

a powerful aesthetic presence, although the structures inherent strength is well disguised behind the grace and lightness of its form and vented façade. Technically advanced in every respect from the footings to the roof top liquid sway balance, the building houses a raft of innovative energy saving initiatives and wholly embraces the concept of inner city life, technology, and environmental responsibility.

Eureka Tower is sure to become Melbourne's signature skyline development, with access for the public to panoramic views of the city, and a significant presence visible right around Melbourne. The Eureka Tower signals the emergence of a cultural and creative inner-city lifestyle, which is being embraced by the 'smart' residents of Melbourne. Fender Katsalidis are proud to have been involved in this prestigious landmark project.

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Essential property services



Eureka Tower is without doubt one of the most prestigious developments undertaken in the southern hemisphere. The quality of the project and the years of extensive planning and design involved from the ground up are all aspects of the project that deserve attention. However, if the quality and reputation of Eureka are to last well into the future, which of course is commercially essential, then it must be ensured that the building remains functional, well maintained, and attractive for current and future prospective owners and tenants. The developer, Eureka Tower Pty Ltd, planned well in advance to ensure this was the case and consulted with professionals in the industry, Property Essentials, to design a plan for the operation, facilities management, community association management, upkeep and well-being of the tower and those who call it home.

Property Essentials are in effect the custodians of the building. Their wide-ranging experience in the design, implementation, and maintenance of community association strategies and programmes has led to their position as one of the leading property management companies in Victoria. As such, they were a natural choice to be involved in such a prestigious development.

Property Essentials have been established for 16 years and they have developed a powerful reputation for providing innovative solutions and formats for the management and maintenance of community association structures and processes. Focusing specifically on the development, enhancement, and consultation for community association formation and constitution within new developments has ensured that their expertise is valued throughout the industry.

They have been responsible for a number of key projects including; the Docklands precinct - Yarras Edge', 'New Quay', Victoria Harbour, Victoria Point, Village Docklands and Watergate. Property Essentials were also involved in the set up and management of intergrated residential golf course resorts such as 'Moonah Links' and Settlers Run and many other prestigious new developments in and around Melbourne such as Yve, HM@S Beach Apartments and Herald Living.

The chairman of the company, Mr Adrian Quinn, was closely involved in

the project from the outset and he and other members of Property Essentials worked collaboratively with the developers and other stakeholders to determine the most effective and appropriate community association structure. Property Essentials like to operate with a hands-on approach, which enables them to understand in detail, the requirements, and aspirations of their clients.

On the Eureka Project, Property Essentials worked collaboratively to develop and implement an effective plan for the sub-division of the complex 600-apartment development; they also assisted in the creation of the community association budget and costing, and prepared specifications for the facilities management. A challenging aspect of the development was the staged occupation of the lower levels whilst work was still underway on the upper levels, this required extensive management and monitoring by Property Essentials to ensure that all parties were catered for. A unique fire and emergency evacuation programme was required given the extreme height of the Tower. The services of Property Essentials were sought to assist in the development and implementation of this programme.

The company prides itself on its ability to create and manage complex large-scale community association structures, with multiple cost centres i.e. separate cost centres for residential, retail, and commercial tenants occupying one building. The challenge of this often complicated work is what Property Essentials thrives on and they have developed a number of systems and standards through the course of their business that have received high recognition.

Property Essentials uses a facilities management programme designed to expedite the management of facilities, building maintenance, plant equipment, and community association assets. Being a fully interactive system it enables the transfer of information regarding all works, maintenance and repairs, machinery, plant and assets to Property Essentials, who are then able to coordinate the appropriate services and schedule regular or extraordinary works to budget and programme. Another significant advantage of the programme is the availability of an accurate history of works undertaken and the smooth flow of information, without distortion, between the building owners, Property Essentials and the onsite management team.

The improved efficiencies due to the system generate significant cost and time savings for all parties. The Eureka Tower is a landmark building in every sense of the word. The technology and engineering expertise involved in its design and development are without doubt the best in the world. It is only fitting then, that the continued operations of the completed tower should be in keeping with these high standards. Property Essentials are very proud to have been given the opportunity to demonstrate their considerable expertise in designing and planning of a suitable community association structure and operational systems that will ensure Eureka maintains its place as the pre-eminent residential address in Australia.

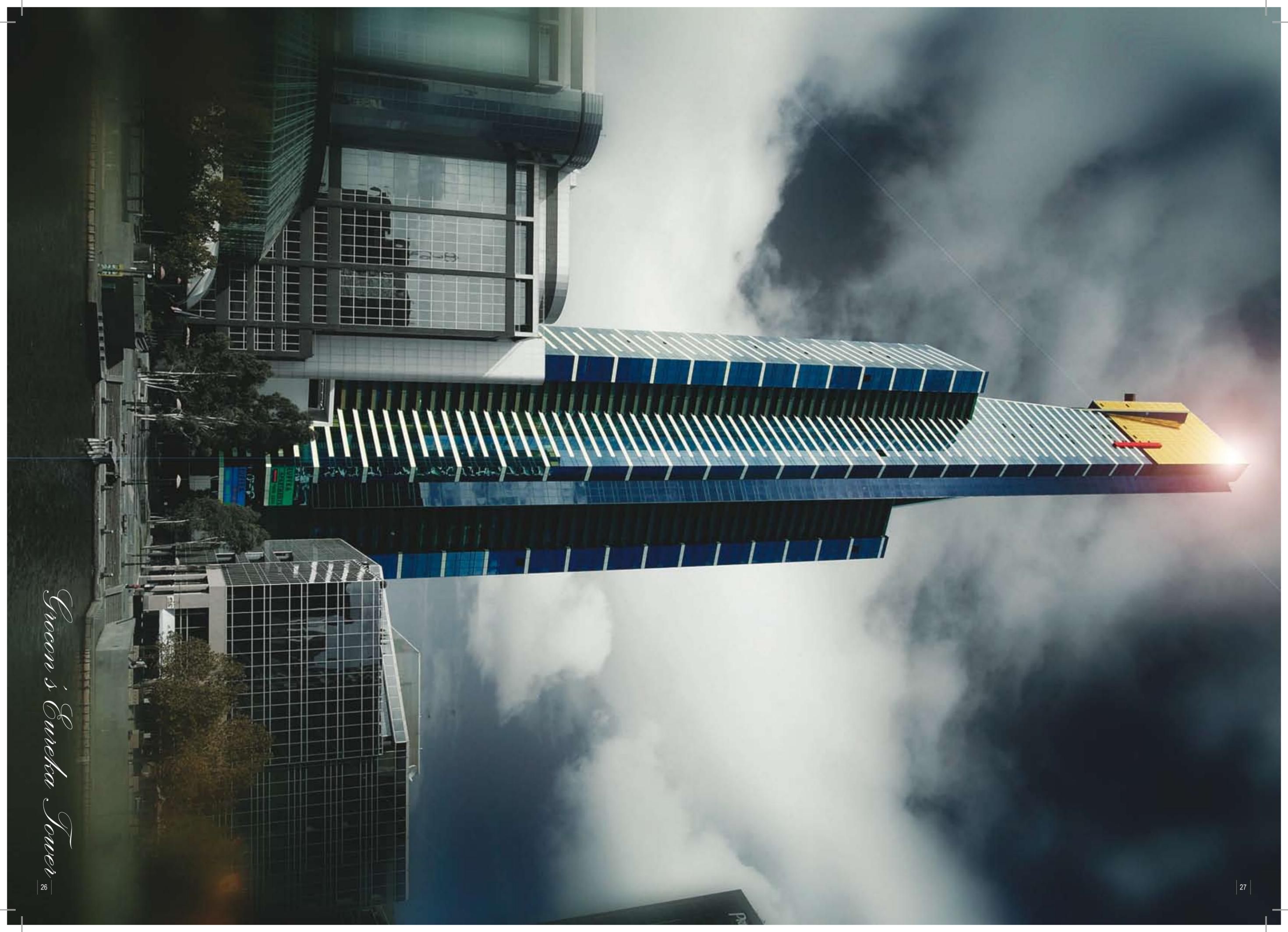
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VIC Special Feature - Eureka Tower





Solid as a rock

The site on which the 297 metre, Eureka Tower Residential Development sits is one that has a very complex geological nature. A number of geotechnical studies undertaken during the past decade, as proposed developments were assessed and then later abandoned, indicated that a thorough in depth geotechnical assessment was required once the Eureka Tower Project was confirmed. The job of assessing the geological nature of the site and, in relation to this, the design and type of footing required, was undertaken by Golder Associates who, having been involved with the site on and off for the past 14 years, were in a good position to understand what was needed.

Golder Associates is an international company that has had offices in Australia since 1972. Specialists in ground engineering and environmental services, they have built a strong reputation for their thorough and accurate application of practical solutions to complex problems and this has earned them a number of significant awards. The Eureka Tower Development is a good example of the type of challenging projects they enjoy undertaking.

The issue that the Eureka Tower Project presented was the interruption to what could be described as 'standard Melbourne geology' beneath the proposed site for the development. Normal geology for the area consists of sedimentary layers of soft and stiff clays, and then dense sand and gravel overlaying siltstone and sandstone bedrock. However, in this particular area, it was discovered that a relatively shallow layer of basalt interrupted this lay-

ering, with an older deeper layer of basalt beneath. Neither of these layers was consistent over the whole site.

Preliminary surveys in 1990, and 1991, helped Golder to understand better what would be required in the tender process for the bored piles, and to hopefully eliminate variances and difficulties that might arise from 'as yet' unknown determinants. A large number of test bores were sunk on up to 50% of the actual footing positions. The information gained through laboratory testing and pressuremeter testing of the siltstone layer, and laboratory testing of basalt core samples, from the 25 test bores proved invaluable for the subsequent planning of the deep footing solution developed by Golder Associates. Rock socketed bored piles were deemed an appropriate footing solution and a socket design was generated for each pile. The tender process for the piling contractors was then re-initiated with clear goals and with considerable cost savings for the project. The actual saving was four times the investigation and design cost.

The results of the testing indicated that the lower siltstone and basalt layers were of high, to very high intact rock strength ranging from 80MPa to 250MPa for the lower basalt, and 15MPa to 70MPa for the siltstone. The difficulty was that towards the south-eastern end of the development, the lower basalt flow thinned and there was concern as to the structural or inherent strength in this thinning area. It was also considered possible that in this section vertical cooling joints may have occurred within the basalt. If the piles

were placed on what turned out to be unstable footings, then the resultant settlement would prove unacceptable. Golder undertook further testing to ensure that the socketed piles would be adequately secured.

Boreholes were sunk at each of the piles in the southeast section, above the suspect basalt flow. Drilled through the upper basalt layer, (as the eventual footings would also be) the test bores would enable Golder to decide whether the footings needed to be set on the basalt layer, or drilled deeper and set on the siltstone below. In all, nine additional bores were drilled.

Once data had been collected and the location of proposed footings decided, Golder used a theoretically based design method developed at Monash University called ROCKET. ROCKET enabled them to determine the final configuration of the rock socket footings, taking into account variables such as intact rock strength, rock mass, residual friction angle of the rock, pile diameter and socket roughness. The model proved invaluable.

In all, 64 piles were proposed for drilling and founding in basalt, and a further 22 socketed into the siltstone layer. As a cost initiative, after receiving feedback from tenderers, it was decided to use Continuous Flight Auger Piles (CFA) founding directly on the basalt rather than bored piles socketed into the basalt. Two test piles were installed and tested semi-statically (the Statnamic testing method) to establish the feasibility of this process. The results of this testing confirmed the suitability of the Contractor's alternative.

Dynamic load tests were also conducted on the test piles, and subsequently on a number of production piles to ensure the footings were capable of supporting the design loads.

The innovative solutions that Golder Associates was able to deliver to the project were the result of collaboration between the piling contractor, Golder Associates, and the developer. The combination of a collaborative approach and extensive, thorough testing and geotechnical exploration of the site enabled Golder Associates to generate a piled footing solution of considerably higher capacity than would otherwise have been considered, not to mention significant cost savings along the way. This clearly demonstrates the Company's value in the development of what is, technically, if the height is measured from the actual roof, the world's tallest residential tower.

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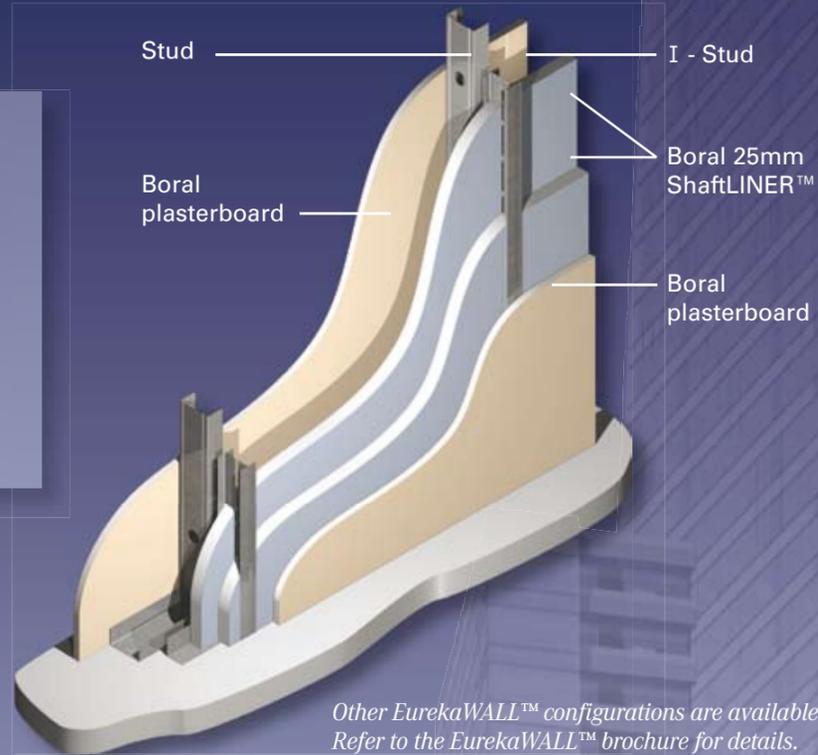


EurekaWALL™

Separating Wall System for Apartment Buildings

EurekaWALL™ is the preferred inter-tenancy wall system for the Eureka Tower.

- Cost Effective
- Lightweight
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Wall of fame

Boral Plasterboard provide a broad range of products to meet the specialised needs of their customers, including building code approved residential and non residential wall and ceiling systems, that can provide a viable alternative to traditional construction methods and generate significant value adding for the client.

Eureka Tower required a separating wall system that achieved the required acoustic rating, but also had a reduced footprint to other comparable wall systems. For the project, Boral created EurekaWALL™, a new walling system that utilises a panelised Shaftliner membrane that speeds up construction and enables the separating wall to meet the developer's requirements.

EurekaWALL™ is suitable for party walls and service shafts in medium and high-rise apartments. At the heart of the new system is a membrane, which is constructed of two layers of 25mm plasterboard Shaftliner, between 51mm deep, light gauge steel 'T' studs. These 'T' studs were specifically developed for the EurekaWALL™ plasterboard system. The EurekaWALL™ has been fire tested to achieve a fire resistance of -/120/90, and has an acoustic rating of up to $R_w + C_{tr} = 50\text{dB}$, which meets the provisions of the Building Code of Australia for sound isolation.

The design of EurekaWALL™ is such that the developers chose it as the preferred inter-tenancy wall for the entire project. Being lightweight and simple to install it was found to be a faster and more labour friendly system than other panelised separating wall systems. There was no heavy lifting involved in its installation as can be the case with other panel based solutions, and the membrane configuration had a flow on effect to other areas of the project such as the inspection for acoustic and fire sealing, which in turn generated time and cost savings. The entire EurekaWALL™ system can be installed by the plastering contractor, and services run through the cavity. If required, in higher-pressure areas the stud centres can be reduced to accommodate above normal loads.

Eureka Tower and EurekaWALL™ have once again demonstrated Boral Plasterboards comprehensive understanding of the industry and their dedication to client requirements. Quite naturally, they are very proud to have been involved on such a landmark development.

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For more information on EurekaWALL™

- Fill in this coupon and fax it to: (03) 9645 1707
- or mail to: eBusiness Centre, Boral Plasterboard, Locked Bag 3, Port Melbourne, Vic 3207 Australia
- or call TecASSIST on 1800 811222
- or visit our website: www.boral.com.au/eurekawall

Please send information on: EurekaWALL™ FireCLAD® PartiWALL® OutRWALL®

Name Email Telephone
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Enquirer: Developer Builder Contractor Building Surveyor Draftsperson Architect Student

Project

Value

Urgent Enquiry

Insuring all's well

Independence is a valuable commodity; it provides a company with the opportunity to seek what is in the best interests of their clients, without the sometimes-conflicting opinions of shareholders or other stakeholders. Miller and Associates are an independent company and at the core of their business is the desire to provide diligent and exceptional service to the ever-complicated business of insurance.

Founded in 2000, Miller and Associates Insurance Broking have been built around a core of local professionals with extensive experience in the industry. Incorporating a joint venture structure with Miller Insurance Services, the largest independently owned broker in the United Kingdom, Miller and Associates are an Australian company with access to the resources and global leverage of one of the worlds leading insurance brokers.

Being a niche market insurance broker, Miller and Associates have the ability to provide exceptional quality of service and dedicated staff to meet their client's specific needs. With a core industry experience based extensively in construction insurance, Miller are able to offer insurance solutions for their clients that anticipate, meet and often exceed their expectations.

The company operates in a range of specialist areas, primarily property and construction liability insurance, but they also supply consultation and services in commercial contingency, energy, fund management, marine, fleet, personal accident, political risk, professional and executive liabilities, science and technology. Miller work with some of Australia's leading constructors including Bilfinger Berger Australia, Abigroup, Baulderstone Hornibrook and Bilfinger Berger Services Australasia. Currently they are providing their services on projects such as the Western Orbital in Sydney, and Grocon's AXA Tower in Melbourne along with the Tullamarine Calder Interchange and the Albury Bypass.

Miller personnel have enjoyed a long association with Grocon Constructors and were appointed to place the insurance programme for the construction risks associated with the Eureka Tower project, embracing damage to works and legal liabilities.

Miller and Associates excel at this type of work and their involvement with the landmark project was a challenge they eagerly accepted. The results, as Ian Duthie, the Director of Miller and Associates in Melbourne explained, were a good outcome for all parties involved. "The project operations ran perfectly and no claims were made during the development, which is a terrific testament to Grocon's practices and their thorough approach to their work" he said. The successful expedition of the project is also a good indication of Miller & Associates approach to their work and their ability to provide high quality services on a large scale and complex project.

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Aconex Managing Directors Rob Phillpot (left) and Leigh Jasper

Managing the information flow

Constructing Eureka Tower involved project teams from over 100 organisations and, from design through to completion, these teams exchanged more than 70,000 documents and 60,000 pieces of correspondence.

Builder Grocon and architect Fender Katsalidis recognised early on that managing this vast flow of information would be vital in order to complete the project on time and on budget. Their solution was to use Aconex, a web-based collaboration system, to streamline communication between project teams and securely manage documentation.

Aconex stored all Eureka Tower project information – including documents, workflows and correspondence – online in a secure central site. This allowed project members to instantly view, track and share their information at any time, and from any location.

Michael Fazzino, Director of Technology at Fender Katsalidis, experienced real value in using the web-based collaboration solution. Fazzino said: "Using Aconex on the Eureka Tower project enabled us to quickly, efficiently and accurately issue, track and retrieve data which, on a project of this size, is crucial.

"Over the course of the project, we saved time through having fast and easy information access; reduced costs such as couriers, printing and administrative staff; and reduced risks such as information loss and disputes," he says.

Michael Waters, Grocon Contract Administrator, believes that using a web-based collaboration system instead of traditional processes for managing information, saved time and increased productivity.

"I couldn't imagine running this job without Aconex," says Waters. "For a project of this scale, with people constantly changing, we needed a centralised system that provided continuity of information. Instead of having to go to the file room and search through hundreds of files to find the hard

copy of documents, people could find them instantly on Aconex. This easily saved an hour or two a day.

"On the Eureka Tower project, transparency and traceability were particularly important. With email, there isn't the open access to information, and that slows things down. When using fax, there is a record saying that something has been sent, but not what it is. But with Aconex, we knew exactly what was sent, where, and when," he said.

Every document and correspondence loaded onto Aconex is archived and its status is tracked. This audit trail improves accountability by detailing 'who did what and when' and also ensures that everyone is working from the most up-to-date version of each file. Waters found that this helped reduce disputes and delays, and flagged any potential issues before they could impact budget or schedule.

"Aconex helped to give meetings clarity and focus. Five minutes before going to a meeting, our team could produce a report of outstanding items. This meant we could immediately say to the architect or the client, 'This is all the correspondence we've had in the past fortnight since the last meeting, and these are the items that are outstanding' and get straight down to business. The accountability makes people do their job." He added, "Also, because everything is so clearly documented, we needed fewer meetings."

Aconex currently works with more than 25,000 companies on a wide range of construction and engineering projects. To request a free demo go to www.aconex.com.



Fantastic finishes



A significant challenge in any major construction project that requires timber veneer is the maintenance of the consistency of the veneered joinery throughout the project. This is especially true of large-scale development, which may involve months or even years between the first floors being fitted-out and the last. Often the best quality veneer is used in the early stages, or lower levels of a project, with the final stages and the penthouses missing the best quality materials. Consistency of colour, quality, and grain is also an important consideration between apartments on the same level.

Elton Group has been in operation since 1938, and during this time, has developed a very clear understanding of the requirements of their clients. Seeking always to provide the best solution to any challenge, they tendered for the Eureka Tower project with the sure knowledge that the products they were able to supply were the best available for the job.

Elton Group was able to provide a solution to the issues involved with maintaining the consistency of timber veneer during the construction of Eureka Tower. The impressive development required, quite naturally, only the very best in quality and 'E veneer'; a reconstructed timber veneer supplied by Elton Group was deemed ideal for the job. Elton Group specialises in the supply of architectural products to the industry and E veneer is one of their leading lines. They also manufacture veneer edging and specialist plywood products including bending ply. Recently the Elton Group has added Lumisty, to their range of products, a specialist window film that allows directionally controlled viewing, it is expected to be a very strong performer in the market.

E veneer is made from selected rotary peeled wood veneers that are colour enhanced and reformed into solid square blocks, or logs. These are then re-sliced to create a unique range of real wood veneers with remarkable consistency of grain and colour and standard sheet sizes that are easy to use. This patented process ensures the wood is produced in an environmentally responsible way that does not impact on the natural rainforest regions of the country. E veneer is suitable for all sized projects and without knots, splits, or discolouration a high quality finish is guaranteed every time.

Elton Group is glad to have had the opportunity to demonstrate their E veneer timber veneer on such a large-scale development and it is a clear indication of the product's quality that it was chosen for such a prestigious development.

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Strength through flexibility



Modern construction involves complex analysis of many variable factors that might affect the design and integrity of the completed development. With high-rise developments such as Melbourne's Eureka Tower, one of the major influencing factors that can affect the building after development is the wind and the pressure it exerts onto the building. To ensure that Eureka Tower was constructed within guidelines for strength and flexibility, the developers sought the assistance of MEL Consultants (MEL).

One of the most highly respected consultancies worldwide; MEL has been deeply involved in the business of wind dynamics for 25 years. The founder of the company, Bill Melbourne, has over 35 years experience as a researcher and engineering consultant, and he was Professor of Fluid Mechanics at Monash University until his retirement in 1999. He is also chairperson of the committee involved in the development of the ISO Wind Engineering code. Bill heads a team of highly qualified and skilled engineers who are able to provide consultancy on almost every aspect of wind dynamics and engineering. During the time they have been in operation as a consultancy, MEL has assisted in their role as wind engineering consultants in hundreds of buildings throughout Australia, New Zealand, Asia, and the Middle East. They have also conducted studies into the wind dynamics of 12 stadiums, seven bridges, two offshore platforms and 6 super-high-rise towers, included recent towers in Dubai, Bahrain, Abu Dhabi and London.

Much of the information MEL provides to developers, architects, and engineers is related to environmental wind conditions, and the effects of these winds on the structure of the development through pressure. Estimates of wind loading on cladding, facades, and structure and the predicted response

of the building to these factors forms the basis of their reporting and assessment, and in many cases significant issues can be resolved in the design phases of a project.

MEL's involvement on the Eureka Tower project involved the provision of aeroelastic and façade pressure testing. The aeroelastic test results were combined with the predicted building mode shapes to estimate the dynamic base moment, and shear force distribution. Then, these components were combined with directional wind speed data to provide a full probabilistic estimation of acceleration response for occupancy comfort considerations (or put simply, how much the building moves in a strong wind). MEL also conducted specific tests to determine the effects of external pressures on internal components. The tests were conducted using the 256 channel advanced high-speed electronic pressure scanning system.

MEL Consultants' involvement in the project is a testament to their name within the industry and they are delighted to have been involved in such a prestigious development and to have been provided with the opportunity to refine their abilities and skills further on such a unique tower.

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Switched on

The development, design, and manufacture of custom switchboard solutions for a major project such as the Eureka Tower are integral to the overall operational success of the project. Specialists in this field, Kaytee Switchboard Manufacturers, were able to provide the developers with a solution that encompassed the technical and operational specifications of a project of this scale.

Having been in operation since 1984 the company has a wealth of experience in supplying switchboard solutions to a wide variety of projects; the custom engineered design of their switchboards provides them with a degree of flexibility, and innovation establishing Kaytee as a manufacturing leader within the industry.

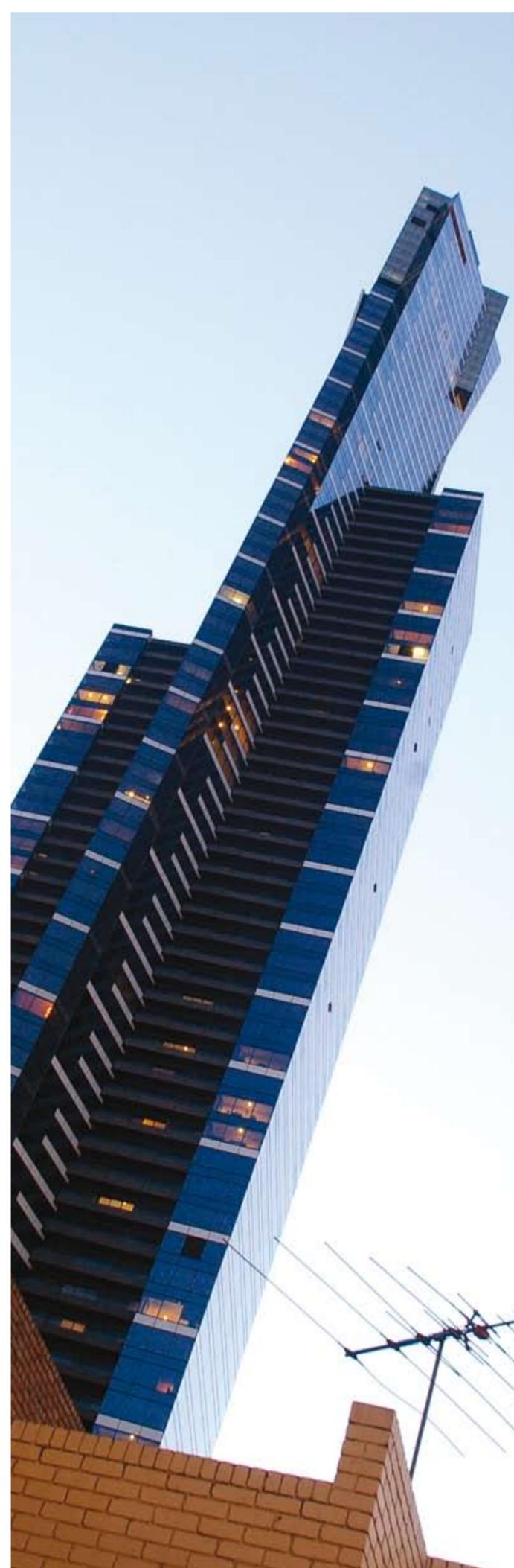
The switchboards supplied for the project conformed to: Form 3b to AS/NZS 3439.1:2002, 50KA for 1.0 sec Fault Level, 1P54 to AS/NZS 1939.

All manufacture and installation work was carried out in compliance with Kaytee's high standards of work and OH&S practices, in addition to the work being completed on time and within budget. For further information on the extensive services that Kaytee can provide, please follow contact details.

Kaytee Pty Ltd
Switchboard Manufacturers and Sheet Metal Fabricators
Member of the NESMA

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Solid under foot

Sure Level is a specialist company with a well-earned reputation for creating high quality and effective cement based chemical solutions for the construction industry. The company is dedicated to best practice production and work methods, which in turn is a guarantee of consistent high quality product to the market. Operating primarily as a manufacturer for the wholesale and direct trade market, Sure Level's range of products used in the domestic, industrial, and construction industries are now distributed widely throughout Australia and New Zealand.

A quality accredited company conforming to AS/NZS ISO 9001:2000 certifications, Sure Level was engaged by the developers of the Eureka Tower to provide floor levelling and smoothing compounds, as well as liquid priming compounds. As would be expected with such a large-scale development, the amounts of product required were exceptionally high, but Sure Level's manufacturing and distribution systems were well able to meet the challenge and with close collaboration with the developer, architect, and the installation contractor, supply and cost targets were achieved.



For the Eureka Tower project, Sure Level supplied Sure Finish levelling compounds, which have been designed with the aim of creating smooth flat surfaces on concrete. They are easy to apply with maximum flow and without shrinkage or cracking. They can be used to provide a suitable underlay for floor coverings and they are also suitable for underfloor heating element embedding. Specific formulations to meet the requirements of individual projects can also be manufactured at the company's Victorian plant in Thomastown.

Sure Level's dedication to the high quality production of clever and effective cement based solutions for the industry is clearly, what led to their involvement in the Eureka Tower project. The success of the project and Sure Level's products is a credit to the company and their approach to their business. Understandably, they are very happy to have been given the opportunity to contribute to such a landmark project.

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VIC Special Feature - Eureka Tower



Corporate coffee

Finest Italian Espresso, made from beans roasted in Naples on the 57th floor of Australia's tallest residential tower, not a problem! Map Coffee was there for a number of stage openings during the construction of the Eureka Tower project. In attendance with Map Coffee carts and coffee services, they were able to provide the gathered guests with premium Italian coffee, hot chocolate, and a range of teas and herbal teas to suit everyone's taste.

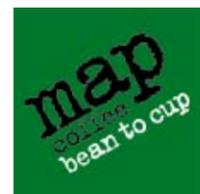
Map Coffee Bean to Cup is the corporate arm of Map Coffee, a company that has been servicing the restaurants and cafés of Melbourne successfully for many years. Through the course of their business, Map Coffee became aware of a need for premium coffee and the associated services in the corporate sector. In response to this under-serviced area of the market, they formed Map Coffee Bean to Cup. Extensive research was undertaken and a considerable amount of time was spent, over a cup of coffee, talking to their European counterparts in the corporate services sector.

Finally, Map Coffee Bean to Cup was born, with some adjustments being made for the sophisticated Australian coffee market. Being an Australian owned company also provided them with the degree of flexibility and the chance to offer a wide range of premium blends. They now service a broad range of client's from the Government Departments of Infrastructure, Primary Industries, Treasury and Finance to private sector clients such as, ANZ, nab, Hassell Architects, Lend Lease, KPMG, Minter Ellison and JB Were.

The company's focus is on the provision of the best quality premium coffee

and their services utilise a number of different machines dependant on client's requirements, ranging from super-automatic machines with fresh milk to specialised Bean to Cup machines, which are serviced daily.

The advantages of Map Coffee Bean to Cup services are significant if only measured in the reduced time-out of staff 'heading down' to grab a coffee. However, the real benefit is in the creation of an environment within the office that is productive, relaxed, staff focused and efficient and nothing does this quite as well as a cup of good Map coffee.



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mailsafes compact mailboxes



Special delivery

Mailsafe Mailboxes is a division of Help Enterprises, which is a community based non-profit organisation that has been in operation since 1968. Help Enterprises is a registered charity, established with the intention of creating real work opportunities for people with disabilities. Help Enterprises employs 200 people with nearly 50% of the workforce being disabled. For the Eureka Tower development, Project Mail Systems, the Victorian agent for Mailsafe was engaged to provide a solution for the tower mailroom. Barry Groves, Director of Project Mail Systems, liaised very closely with the architect, site foreman, and developer on the project to ensure the smooth expedition of the mailbox design, delivery, and installation.

Mailsafe have been creating mailboxes for nearly 30 years. They are a quality assured ISO9001:2000 international standard company with a sincere dedication to excellence in the services they provide. Specialising in large scale 'banks' of mailboxes for apartment complexes, townhouse developments, office buildings, shopping centres and retirement villages, Mailsafe were ideally suited to handling the challenge provided by Eureka Tower. Their high quality aluminium extruded boxes are tailor made to specific project requirements and the free consultancy service ensures that the solution chosen is the most appropriate.

The developers engaged the services of Mailsafe and Project Mail Systems to provide 567 mailboxes for the project's internal mailroom. A collaborative approach was required between the architect, the joiner, and Project Mail Systems to ensure the appropriate solution was identified. Project Mail

Systems provided a number of options and plans from which the final design was chosen. Then a special mailbox was designed by Mailsafe to suit this project's needs. Project Mail Systems worked closely with the installer to ensure delivery was within the required schedule and provided detail drawings and documentation.

Due to the restricted size of the mailroom, the boxes were designed to accommodate the length of an A4 envelope, but with half the width of a standard mailbox, although retaining standard height and depth. As the concierge was required to sort the mail, rear access to each box was required from a secure area, whilst the tenant's access was from the front with a secure lock and key. All boxes were designed with the contemporary features and styling necessitated by the architectural vision.

The completed works for the mailroom is a good example of the ability of Mailsafe and Project Mail Systems to deliver innovative and appropriate solutions for large-scale projects. Mailsafe and Project Mail Systems are very proud to have been associated with such a prestigious development.

Mailsafe Mailboxes - a division of Help Enterprises
www.mailsafe.com.au



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