PORTRAIT OF ACHIEVEMENT

The \$172M Swanston Square consists of a 34-storey residential tower and restoration of the heritage listed Maltstore to accommodate new retail and commercial spaces. The tower façade features the face of William Barak an indigenous elder of the Wurundjeri Tribe.

When you look at Swanston Square it can only be spoken of in superlatives: magnificent, extraordinary, visionary. A 34-storey residential tower comprising 536 apartments, 206 carparks over five levels and ground floor retail along with the extensive restoration of the heritage listed Maltstore accommodating new retail and commercial spaces. The building portrays the face of William Barak - an indigenous elder of the Wurundjeri Tribe - over 28 levels of its eastern and southern frontage.

The \$172 million project incorporated new techniques, Ben Williams, Project Manager describes the construction as a complex process with the façade and the restoration of the Maltstore as the most challenging parts of the program. "It was one thing to have the plans and vision of the architects - ARM in your mind's eye and to anticipate how the façade would turn out and another to see whether it was executable."

The façade was made up of 406 glass reinforced plastic (GRP) panels, "each one was a separate design, separate shape, separate weight with different spacing in between with different connections." Although the façade was made from plastics and polymers on a timber frame given its total mass, it was still a light weight construction material.

Probuild had to factor in wind loads and the engineers had to design details to connect the façade in such a way that would be workable without having to compromise any of the intricacies of the face. "The moment you have each apartment featuring a variable balcony detail it makes for a challenging installation." He gives full credit to the project managers and subcontractors for their integrated teamwork which made the challenging process highly successful and viable.

The Malstore building now respectfully shows a seemless historical sequence between old and modern lifestyles. A combination of ground floor retail and 3 stories of office space above.

Probuild started with a building that was inhabitable for nearly 15 to 20 years. Operating in

the past as an industrial building whose original purpose was for manufacturing and production, Probuild had to create a practicable and fully functionable modern building. "There were water leaks and gaps a metre wide in-between the silos; the remaining timber was rotting and the condition of the timber flooring supporting the floors meant we had to carefully consider what could be preserved and restored."

In order to make an office space feasible a lot of light had to get into the building. Having to work on conserving a heritage building meant demolition had to be well thought out. Three large openings were cut into the brick work of the west façade to render more light into the area with the aim of producing a cleaner, more liveable space over three separate levels. On level 31 there is a sky deck, with three BBQ areas, open plan kitchen, open plan living and dining areas, two fire places indoor and outdoor, two spas and a landscaped area.

Probuild is proud of the result and commends all the interdependent trades on another successful build. Having already produced a high standard of excellence on previous construction projects and as industry leaders on some of Australia's most innovative buildings, Swanston Square is yet another exceptional outcome.

Probuild has five projects nominated in the property council of Australia's innovation and exellence awards they are also currently working on:

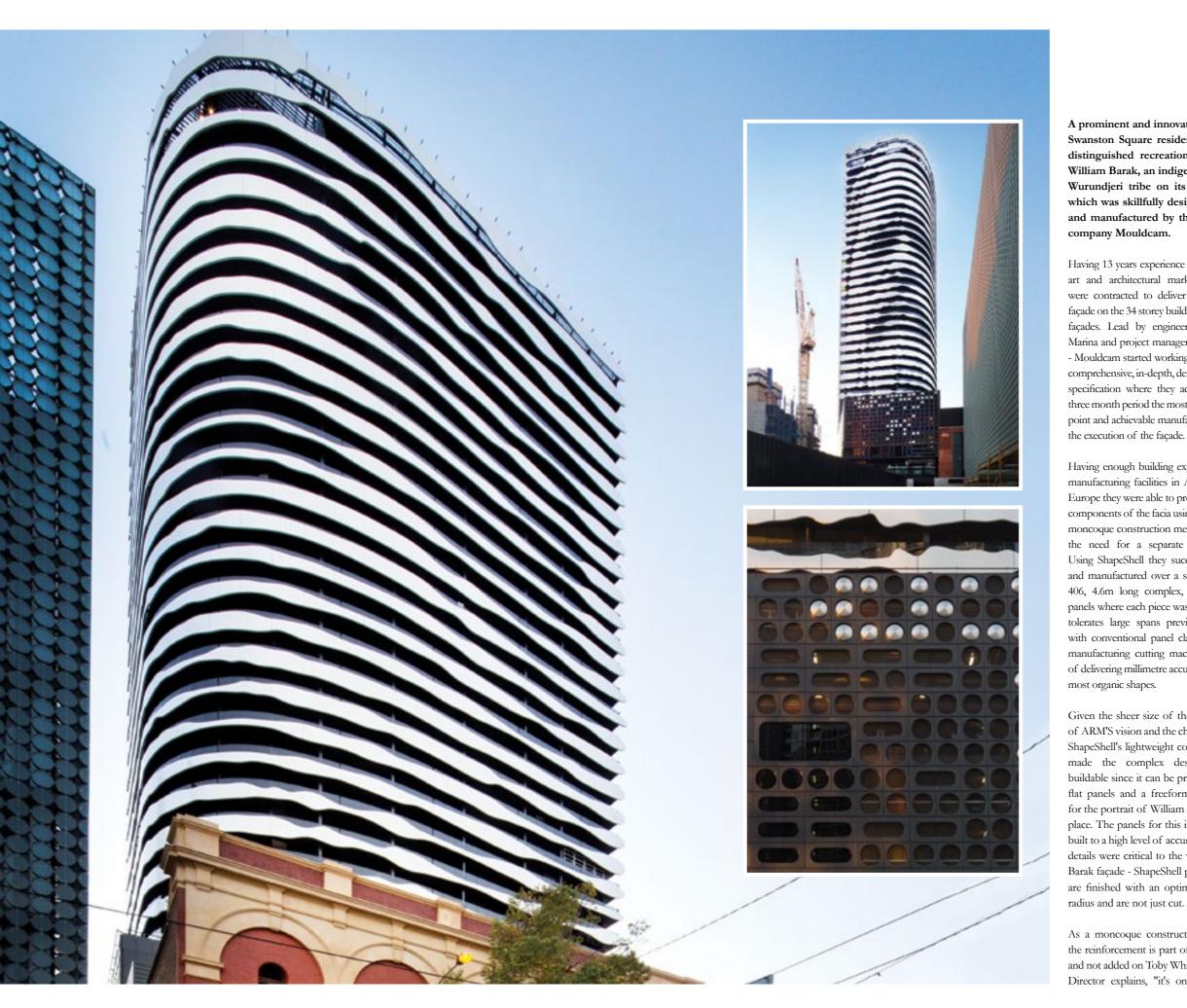
- Bouverie Street Apartments, next door to Swanston Central.
- Victoria One, corner of Elizabeth and Franklin Street.
- Melbourne Apartments, Elizabeth Street.
- Eporo Tower, La Trobe Street



For more information contact Probuild, Level 10, 580 St Kilda Road, Melbourne VIC 3004, phone 03 9693 8222, fax 03 9693 8233, email vic@probuild.com.au, website www.probuild.com.au



DEVELOPER : Grocon MAIN CONSTRUCTION COMPANY : Probuild ARCHITECT : ARM Architecture STRUCTURAL ENGINEER : Aurecon PROJECT VALUE : \$172 Million



A prominent and innovative feature of the Swanston Square residential tower is the distinguished recreation of the face of William Barak, an indigenous elder of the Wurundjeri tribe on its southern façade which was skillfully designed, engineered and manufactured by the award winning

Having 13 years experience in the construction, art and architectural marketplace Mouldcam were contracted to deliver the Barak portrait facade on the 34 storey building and the porthole façades. Lead by engineering director Jaime Marina and project manager Richard Halvorsen - Mouldcam started working with Probuild on a comprehensive, in-depth, design and engineering specification where they accomplished over a three month period the most efficient, best pricepoint and achievable manufacturing solution for

Having enough building experience and whole manufacturing facilities in Asia, USA, UK and Europe they were able to produce the individual components of the facia using ShapeShell - a 3D moncoque construction method that eliminates the need for a separate support structure. Using ShapeShell they successfully engineered and manufactured over a seven month period 406, 4.6m long complex, lightweight curved panels where each piece was unique. ShapeShell tolerates large spans previously not possible with conventional panel cladding. Their CNC manufacturing cutting machines were capable of delivering millimetre accuracy across even the

Given the sheer size of the façade, the scope of ARM'S vision and the challenging construct ShapeShell's lightweight construction material made the complex design feasible and buildable since it can be produced in standard flat panels and a freeform version, allowing for the portrait of William Barak's face to take place. The panels for this image needed to be built to a high level of accuracy where the edge details were critical to the visualisation of the Barak façade - ShapeShell provided edges that are finished with an optimal quality, detailed

As a moncoque construction method where the reinforcement is part of the base structure and not added on Toby Whitfield the Managing Director explains, "it's one solid lightweight engineered structural panel where it doesn't have multiple materials in it." Meaning its combination of lightweight structure and stiffness out-performs steel, aluminium, timber and cement when used in the same application.

A key point and one of the engineering requirements of the façade's construction was that it was also necessary for it to be able to absorb impact during extreme weather. One of ShapeShell's features is its ability to absorb shock and withstand the force of inclement weather with a capacity to return to it's original form without memory or fatigue: Dimensionally stable, non corrosive, chemically resistant, non conductive, simple to install and safe, ShapeShell provides ease of maintenance on commercial high rise structures with a simple and non-specialised repair system.

Mouldcam are a design bureau that work on design solutions and develop products - with Swanston Square the result of this project is ShapeShell. Toby adds, "Mouldcam is the bridge between creativity and buildability, from design to installation". Using 3D technologies they bring together the latest in materials and manufacturing processes that are price competitive.

Seeing themselves as collaborators they partner up with builders and architects to take a challenging concept and "interpret what the builders, architects and engineers need. We can negotiate a solution at a price and turnaround-time that is manageable." Mouldcam come with solid manufacturing experience where they choose the right manufacturer for the project at hand "being manufacturers ourselves we offer the right choice in the building and manufacturing arena."

Other projects Mouldcam are working on include VCCC - Victorian Comprehensive Cancer Centre Hospital VIC - Grocon PCL, Orbis VIC - LU Simons, Bangaroo NSW - Lend Lease, Curtin University WA - Georgiou, MPavillion VIC - Kane Constructions, Spanda Sculpture WA -MRA, St Collins Lane VIC - Built.

For more information contact Mouldcam Pty Ltd, Suite 107, 33 Longland Street, Newstead QLD 4006, phone 07 3666 0007, fax 07 3666 0035, email aust@mouldcam. com, website www.mouldcam.com or www.shapeshell.com.au

Swanston Square is an impressive mix of retail tenancies, commercial offices and residential apartments located in a sought after area of Melbourne. The unique façade will showcase the face of William Barak, an indigenous elder of the Wurundjeri Tribe.

Nu-Lite Balustrading were contracted to supply and install all of the external coloured sheet façade balustrades and the glass balustrade behind the Barak panel on the Swanston Square project.

It was an essential and complex task, ensuring that all coloured panels accurately followed the designated colour map to create the impressive façade design. Redesigning and engineering one of the proprietary systems to cantilever the panels down to cover the slab edge and comply with all relevant Australian Standards without putting too much bulk on the system also proved to be a challenging task.

A new balustrade system was designed to accept the coloured panels as a cassette. The main criteria that Nu-Lite Balustrading had to satisfy was ensuring that the balustrade could be safely installed from the balcony side and panels could be pre-ordered to plan sizes.

Special colours were formulated in conjunction with Intepon to match the exact architectural requirements on the project. The project has 12 custom made colours within the heat map façade.

Nu-Lite Balustrading has completed a large majority of Melbourne's high-rise and domestic balustrades during the past 15 years. The team has successfully achieved multiple major works for some of Melbourne's Tier 1 builders such as Probuild, Lend Lease, Mirvac and more. Nu-Lite Balustrading pride themselves on working well with other trades and completing projects on time and to budget. Their design and construct team have many years of experience in designing systems to suit the increasing demand for the unusual and uniquely complex.

Recent achievements include:

 South East Water – Probuild Construction – Commercial Building

- Array Appartmetns Mirvac Construction – 38 Storey Building
- Central South Yarra Hickory Developments – 30 Storey Building
 Yarra House – Icon Constructions – 25
- Yarra House Icon Constructions 2 Storey Building
- Bendigo Hospital Lend Lease
- 567 Collins Street Leighton Contractors – Commercial Building
- 664 Collins Street Mirvac Constructions
 Commercial Building

Nu-Lite Balustrading values the quality and professionalism of their employees. They boast a dedicated team of talented people who feature many years of experience in Glass, Aluminium, Stainless Steel and Engineering which allows them to provide cost effective solutions for all design and construct projects.

With over 18 years of experience in the glass and aluminium industry, Nu-Lite Balustrading is considered to be the market leader in the supply and install of glass balustrading products.

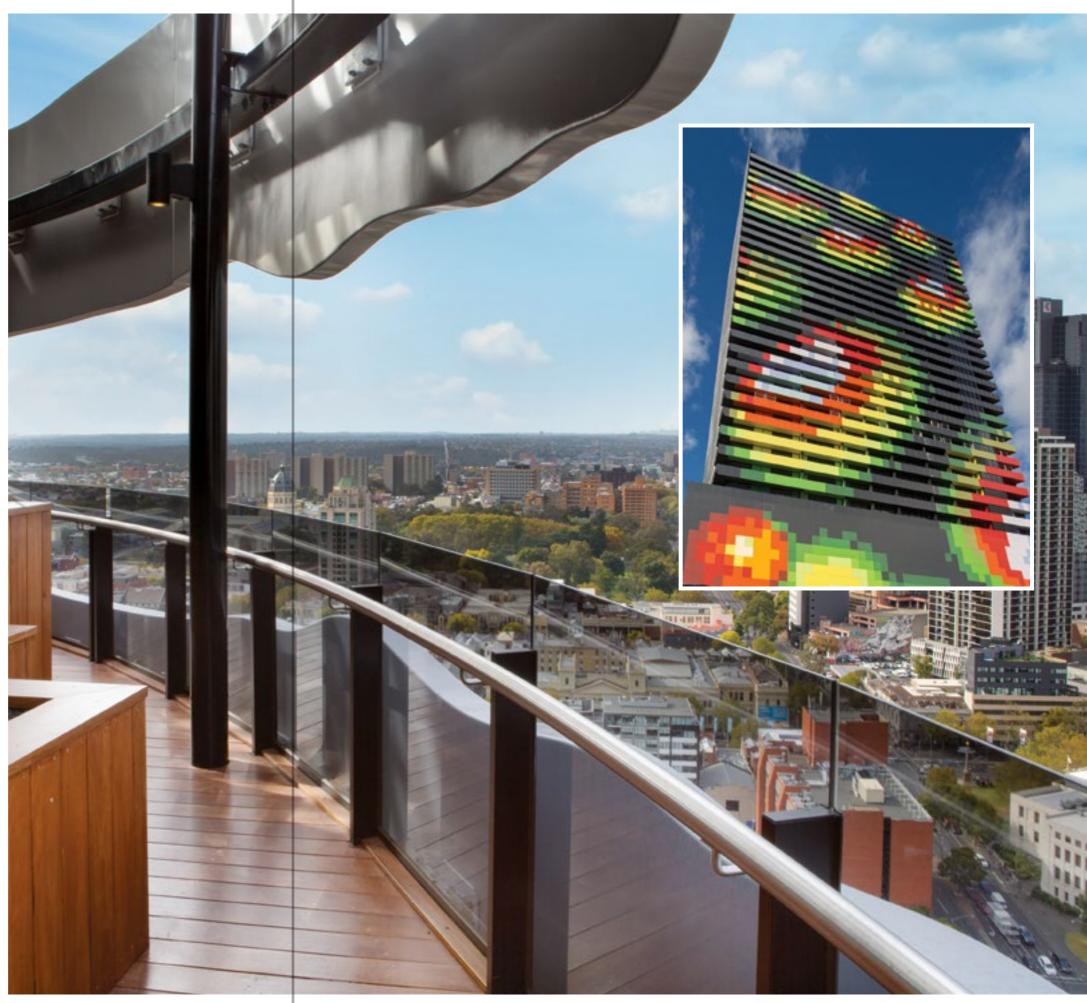
From its inception to present day, with an annual turnover exceeding \$10 million, Nu-Lite Balustrading has completed work with an estimated value exceeding \$100 million.

Nu-Lite Baulstrading service both the domestic and commercial sectors and utilise Mild steel, Stainless Steel and Aluminium in their glass products range.

With a commitment to research and innovation, Nu-Lite Balustrades has utilized their experience to develop new balustrade and privacy screen systems that exceed all relevant Australian Standards.



For more information contact Nu-Lite Balustrading Pty Ltd, 4 Nicholas Drive, Dandenong South 3175, phone 03 9706 6766, free call 1800 NULITE (1800 685 483), email sales@nu-lite.com.au, website www.nu-lite.com.au





Swanston Square is Melbourne's latest city precinct and boasts a vibrant array of retail options, commercial offices and residential apartments. Looking down towards the central spine of the city, Swanston Square will add a new dimension to Melbourne's urban landscape.

ESD requirements.

The concept resulted in a traditional steel frame to best reflect the materials used.

Probuild contracted Steelvision after learning of their innovative design skills with other steel window systems. The team at Steelvision met with the architects to better understand their wishes and then produced a concept and cost budget which became the framework for the end design.

Following a series of meetings over an 8 week period, and thorough design development between all parties, the final detailed design was agreed to from which the shop drawings were prepared, glass ordered and installation commenced following completion of the new concrete floor slabs. This was all completed within the original cost budget.

The extensive design development and exhaustive drafting allowed Steelvision to order the glass from the shop drawings as opposed to traditional methods, which require site measuring. This gave them the added advantage of having glass on site earlier than usual.

Starting with a unique design, which had not been done before, was in itself challenging. Having three different door systems work within the parameters was difficult

The architects for this project sought to refurbish the Maltstore with a window system reflecting the era, while recognizing the need for double-glazing to meet the particularly when creating a steel bifold door system that fitted with the total concept.

The extensive 3D modeling allowed Steelvision to convert the design into reality before fabrication and thus armed the project with the tools required to complete the contract successfully.

Steelvision was formed in 2011 by co-owners David Gooley and John Chaponnel, when they saw the lack of innovation in the steel door and window market. The company aims at recognizing clients requirements and focuses on meeting their needs with the highest quality given. Their ability to work outside the box has seen Steelvision win a lot of work that is "non-traditional", such as the Maltstore project.

Steelvision will continue to seek out such work where they demonstrate the client's needs in a practical manner while producing economic solutions, unique design, performance and appearance.

Steelvision is committed to offering service beyond expectation. Their innovative window solutions have seen them become a leader in their field and the team will continue to produce solutions that will lead the industry into the future.

The team at Steelvision offers a diverse range of capabilities including architectural metalwork and glazing, structural steel and a range of services suited to the correctional services industry.

For more information contact Steelvision Pty Ltd, U3/270 Lower Dandenong Road, Mordialloc VIC 3195, phone 03 9580 8700, David Gooley 0424 908 798, email david@ steelvision.com.au, John Chaponnel 0418 361 065, email john@steelvision.com.au, website www.steelvision.com.au

R&R Group (VIC) were contracted to supply and install composite cladding to the Swanston Square's architecturally designed façade. The scope of works included several floors from the lower ground to level 6 as well as the plant room cladding and louvres for 3 levels. The project saw a massive 8000 square metres supplied and installed throughout the development.

The car park frames, from mezzanine to level 6, were designed using a lightweight façade system, which allowed for off-site fabrication followed by installation from within the building. The light weight of R&R Groups engineered system meant that mechanical lifting wasn't needed. This resulted in lower labour costs for the project.

Using Vitrabond Composite Panels, a mix of 17 custom colours were used to illustrate a heat map. Exceptional project management skills from all team members was required to ensure the correct colours were cut, and subsequently installed, to the 641 individual frames that made up the car park façade system.

R&R Group has proven its innovative and creative approach by embracing new technology, using quality products including Holyoake Louvres, SBS Group clinch riveted frames and Vitrabond along with developing the most cost effective solution for every project.

The team of skilled tradesmen and support staff, led by Roger Clancy and Brad Macleod, has contributed to the company's notable reputation for reliable and quality service. This outstanding service was clearly evident on the Swanston Square Project with the team led by Jason Maurer.

In addition to Swanston Square, R&R Group's portfolio of recent projects includes City West Police Station, Upper West Side Stages 2 and 4, St John of God Geelong Hospital, Wyndham Vale Primary Care Centre, Mitcham, Tarneit and Wyndham Vale Train Stations. Through R&R Group's commitment to detailed and quality construction, the company has built a reputable name for working within demanding and complex environments. They focus on bringing their clients requirements and expectations to life through the highest quality building and construction materials while successfully merging technical details with aesthetic qualities.

The team specialise in engaging the use of innovative façade and cladding systems to achieve high quality finishes that are both durable and environmentally sustainable.

The foundation of R&R Group's construction is addressing human needs through the built environment. They achieve this by delivering unique design solutions that meet the social and cultural needs of the environment as well as carefully addressing its functional and physical requirements.

The diverse range of R&R Group's building and construction projects has allowed them to cross-pollinate their ideas with Architects, Designers and Builders. These relationships are positively reflected in their ability to effectively communicate with all industry personnel and are applied to each project.

Boasting a successful 30 year history in the construction industry, R&R Group have evolved into a renowned cladding contractor servicing both the commercial and architectural domestic sectors.



For more information contact R&R Group (VIC) Pty Ltd, 13-15 Industry Court, Lara VIC 3212, phone 03 5282 3660, Brad Macleod email brad@rrgroupvic.com.au, website www.rrgroupvic.com.au











Dunnair were the supplier of the water lobby of the Swanston Square project.

Most of the units were standard WPR series units. 27 had to be custom built reverse handling units. This meant Dunnair had to reverse the supply fan and evaporator coil to the opposite side of the unit so that the unit could fit in a different location.

The name Dunnair is synonymous with high quality products in the commercial air-conditioning industry. Beginning with Dunn Air Conditioning in 1961 and more recently, Dunnair Australia (2004) and Dunnair International (1994), the company continues to be leading importer and supplier of air-conditioning brands for the Australian market.

In their 54 year history, Dunnair produce one of the largest range of air conditioning systems in Australia.

Some systems they produce and supply include DX Air Cooled Packages and Splits, Water Cooled Heat Pumps, Total Fresh Air Units, Energy Recovery Ventilators, Chilled Water Air Handlers and Fan Coil Units.

In the early days, Dunnair manufactured the well-received Airtemp range of airconditioning products under the stewardship of founder and director, Rob Dunn.

More success followed when Dunnair's South Australian office, one of five interstate operations headquartered in Melbourne, began producing its own range, selling under the Chrysler name.

In 1983 the manufacturing arm of the company was sold to EmailAir allowing Dunnair to focus its efforts on sales and service.

Dunnair went on to secure several high profile maintenance contracts with multinational

WWW.ANCR.COM.AU

Below Dunnair supplied cooled ceiling package units on the Swanston Square project.

cooled ceiling package units for 536 apartments and 5 units for the ground floor

companies, notable among them the McDonald's chain of fast food restaurants.

The company was also selected as one of few contractors tasked to upkeep the Cosatron installations at Crown Casino.

The company is known as the first in Victoria to import Sanyo units, which explains its close industry association with Airtemp and Sanyo. In the early 1990's Dunnair began to badge Derby by Dunnair wall mounted split units and this continued well into the mid 90's.

Today, Dunnair's range of equipment comprises of 16 product lines on some 600 different models, not including made-toorder products.

The company distributes its products nationally from its local offices and agents in every state and territory around Australia.

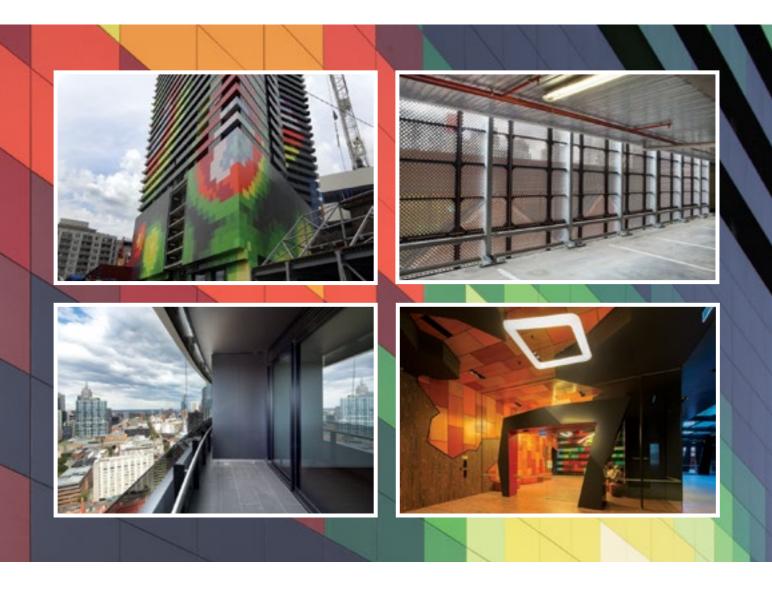
Other projects that Dunnair have recently worked on include The Marketplace at Auburn NSW, an office preceint at Caribbean Gardens Estate VIC and Hervey Bay and Bundaberg Oral Health and Cancer Care Centres in QLD.





For more information contact Dunnair Pty Ltd (VIC), 302-304 Boundary Road, Dingley VIC 3172, phone 03 9558 7001, fax 03 9551 1644, email salesvic@dunnair. com.au, website www.dunnair.com.au





SBS Group was chosen to provide their services on the innovative Swanston Square project in Victoria. The team provided the design and review of the carpark façades, feature entries (SBS Ultra FrameTM), privacy screens (SBS Smart Frame) and formwork framing (SBS Smart Hob[®]).

SBS Group utilised their extensive industry experience to provide custom built pre-fabricated framing, conforming to the builders' requirements.

SBS reviewed and designed smarter solutions which enabled the carpark screens to be quickly and accurately installed and seamlessly fitted without top hats. This allowed for cladding to be directly fixed off site and provided a significant time saving solution for the project.

SBS is renowned as the industry leader for the supply and manufacture of efficient, innovative, pre-fabricated designs and engineered framing for the construction industry.

Combining the latest technology with cold formed steel and
aluminium products, SBS offers lightweight, high strength, high
quality, cost effective and labour saving alternatives to traditional
framing methods.For more information SBS Group Vic, 3
Bayswater North VIC 3153, phone 1300 782 950, email
sales@sbsgroup.com.au

At SBS, they pre-fabricate and pre-finish products off site, which facilitates smooth and efficient installation onsite and therefore significantly reduces site costs and project timelines.

With aluminium becoming pivotal in a new era of construction, SBS has now successfully pioneered pre-finished engineered framing. Aluminium framing is designed and shop detailed to ultimately satisfy and exceed specific project requirements. The results see all respective parties achieve the most effective outcome for their project.

SBS provides a diverse range of capabilities and has worked in many industries including retail, education, commercial and multi-residential construction.



Having earned an indisputable reputation as experts throughout Australia in both commercial plumbing and drainage, CDC Plumbing took charge of all plumbing work on the landmark Swanston Square, VIC. A large scale project accommodating a 34-storey residential tower and the refurbishment of the heritage listed Maltstore.

Working with Probuild, CDC Plumbing had to co-ordinate, design, procure and deliver all the sanitary plumbing, bathrooms, main water supply, hot-water plant, hot and cold water reticulation, and storm water systems to the 536 apartments in the residential tower. While providing solutions and materials that saved time and money, they also supplied all plumbing into the Maltstore.

Employing 15 men, Tim the Project Manager, assigned the success of the build to the incredible organisation of all those involved and the collaboration of the inter-dependent trades.

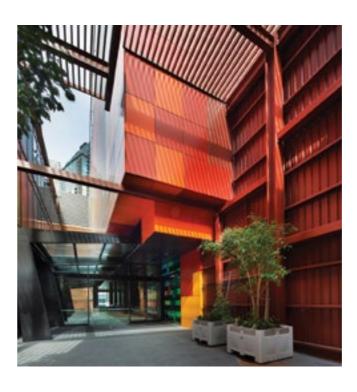
Part of CDC Plumbing's proven track record is their approach to safety, "We are a good company to work for and the structure in the office is an example of the core values of the company - we believe that the key to our success on projects is our focus

on safety and our Safety Management System. A big part of us winning jobs is our investment in OH&S. We've got two fulltime workers and I believe they are on the next level - better than anyone else," comments Tim.

Along with a safety culture at the backbone of the company, CDC Plumbing have extensive resources and materials that reflects the size and amount of plumbing work they carry out for each job. "We have a big team, we do a lot of jobs, we get jobs done because we have an excellent management structure."



For more information contact CDC Plumbing Pty Ltd, 13 Aerolink Drive, Tullamarine VIC 3043, phone 03 9272 9000, fax 03 9272 9099, email reception@cdcplumbing.com, website www.cdcplumbing.com



AUSTRALIAN NATIONAL CONSTRUCTION REVIEW

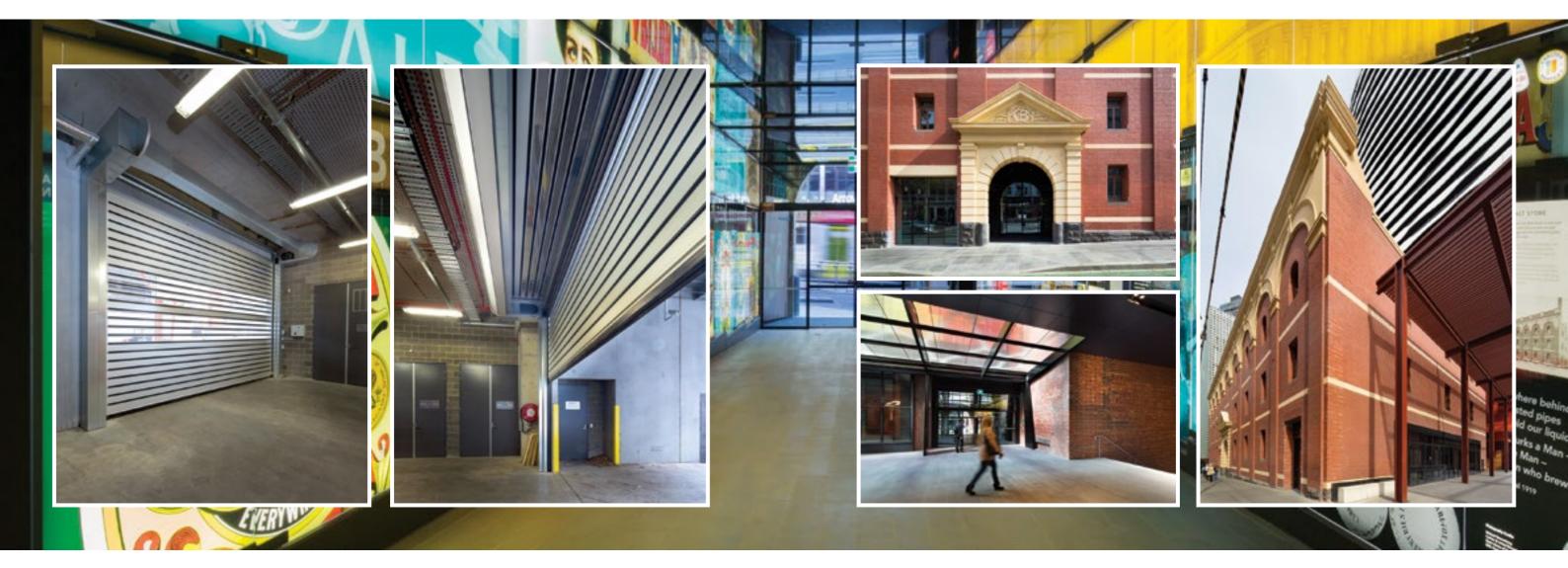
Offering a high standard of product and operational excellence, IJF Australia manufactured and supplied all interior joinery for Swanson Square comprising 536 Apartments including bathrooms, kitchens, laundries, wardrobes and public area wall and ceiling features. Over 9 months up to 20 men delivered high quality kitchen finishes in gloss and satin 2-pack polyurethane. Public areas included the foyer and lift lobbies with Albedor lift reveals, veneer wall paneling, black toughened glass and black 2-pack polyurethane. IJF met the rigorous, accelerated deadline and challenging technical difficulties with proficiency and skill.

With 51 years of manufacturing experience IJF has worked on some of Australia's most elite construction projects nationwide. As demonstrated market leaders it is a family owned and operated business with an excellent work place environment and loyal employees. IJF is currently working on the New Royal Adelaide Hospital SA– Hansen Yuncken-Leighton, Monash University Student Accommodation VIC– Brookfield Multiplex, 888 Collins Street Melbourne VIC – Lend Lease, and more.

For more information contact IJF Australia, 41-43 Cormack Road, Wingfield SA 5013, phone 08 8349 7400, website www.ijf.com.au

Below Premier Door Systems supplied and installed Secure High Speed Doors to the carpark of the Swanston Square building.





Premier Door Systems supplied and installed Secure High Speed Doors to the carpark of the Swanston Square building. The doors supplied are innovative and reliable, opening in mere seconds and closing immediately after the car has passed through the door. This actively prevents unauthorised access by pedestrians and vehicles into the building.

The Design Brief for this project called for High Speed Doors that were capable of providing security to a high traffic volume car park. In addition, the doors were required to provide a level of ventilation and direct integration into the buildings security management system. As a result, Premier Door Systems used the EFAFLEX Model SST High Speed Door from their product range. The EFA-SST[®] is designed for 200,000 work cycles a year and is prominent in the industry as a door which boasts durability, capacity and safety. The doors measured 6 metres wide, which is a larger than an average span and demonstrates the companies ability to go beyond the capability of others.

The installation area for Swanston Square had limited clearance space. Often High Speed Doors like this require large clearances above the door opening and with space at a premium in these types of designs it becomes vital that clearances and the room required for installation be kept to a minimum. In this instance Premier Door Systems was able to supply a High Speed Door, which utilises an Oval Spiral tracking system and in turn reduces the head clearances required for overhead doors. This patented spiral design, along with a similar Low-Lintel model tracking system, which is exclusive to Premier Door Systems and EFAFLEX, allows High Speed Doors to be installed in areas that would have been impossible in the past. EFA-SST[®] at a glance:

- Space-saving construction
- Opening up to 2.0 m/s and Closing up to 1.0 m/s
- High wind load capacity
- · Superior safety devices with low maintenance and running costs

After operating under the name Premier Plastics for over 25 years and specialising in PVC and Plastic Extrusion, along with Flexible Climate Control Shop Curtains, the business grew to also became an industry leader in the manufacture and installation of smart door solutions. In 2015, the company changed the business name to Premier Door Systems to highlight and define their core business which is now solely focused on the manufacture, installation and service of industrial doors.

For more information contact Premier Door Systems, 69 Killara Road, Campbellfield VIC 3061, phone 03 9357 8477, fax 03 9357 8938, email info@premierdoors.com.au, website www.premierdoors.com.au Brickon are specialists in brick work, speed panel and Hebel. Having worked in construction for 20 years their knowledge and hands-on attitude made them take charge of the brick work on the 34-storey 536 apartment tower, Swanston Square.

Working as a team their body of work involved laying majority of the basement block work, amenities on the five level carpark and the highly specialised refurbishment of the adjoining heritage-listed Maltstore.

The Maltstore which was part of the old Carlton and United Breweries (CUB) site involved the restoration of the whole façade. Steve Varthalis the director of Brickon tells us this involved considered planning and an extensive examination of the old building to bring it back to it's glory days. Brickon "had to carefully preserve all aspects of it's original condition and reconstruct it to suit a more modern lifestyle and purpose." The building was very old, dark and inhabitable. Conserving a building is a "detailed process we had to get it to a standard that the client, the Heritage Architectural consultant and Heritage Victoria were happy with."

For more information contact Brickon Pty Ltd, 123 Sycamore Street,Brickon had a 6 man crew working on the restoration and a further 6working on the basement block. Part of the refurbishment was having338 260, email brickon@brickon.com.au

to meticulously match the bricks from the old façade; Brickon sourced a lot of the necessary bricks from various salvage and demolition sites. It took 12 months from start to completion, "it was a fully intergrated big site and very well managed which made our engagement a lot easier as a result."

Swanston Square is another successful project for Brickon an example of their professionalism and high standard of workmanship. Steve adds, "we're a hassle free company we get the job done, on time, and on budget," working methodically and with a clear focus on producing the best possible result.

Brickon are now working on St Joseph's church in Hawthorn for Buxton Construction.