

A NEW ERA OF SMART DESIGN

DEVELOPER : Mirvac Group
MAIN CONSTRUCTION COMPANY : Mirvac Group
ARCHITECT : Grimshaw
STRUCTURAL ENGINEER : AECOM
SERVICES ENGINEER : ARUP
CONSTRUCTION VALUE : \$864 million

Olderfleet is a premium grade 58,000m² office tower which has set a new precedent for adaptive heritage and workplace integration. The project includes hybrid COVID-19 safe-working measures, smart technology, leading sustainability, premium amenities, an expansive lobby entrance, and a 25m high glass atrium with a unique art installation.

Mirvac Group (Mirvac) is a leading Australian property group with a vast investment portfolio of commercial, retail, residential, and industrial assets. With over 48 years of experience, Mirvac has an unmatched reputation for delivering quality products and services across all of the sectors in which it operates.

Co-owned by Suntec Real Estate Investment Trust (Suntec REIT) and Mirvac, Olderfleet is one of Melbourne's best-known heritage sites, comprising of three historic buildings – Olderfleet, Record Chambers, and New Zealand Chambers. An icon along Collins Street, the brick and stone Victorian buildings were a popular commercial site built to serve the burgeoning retail trade at the Docklands in the late 1800s. The original Olderfleet building was designed by William Pitt, the Record Chambers by J.A.B. Koch 1887, and New Zealand Chambers by Oaken Addison and Kemp 1888. All are fine examples of Victorian Architecture with Gothic and Romanesque influences, and are heritage listed.

The premium grade 58,000m² office tower, constructed behind the original Olderfleet heritage buildings, is a sophisticated example of contemporary building standards and services with the latest in technology, amenities, wellness, and sustainability.

The design for the Olderfleet tower evolved from a competition between four of Grimshaw's global studios, with the final design bringing the best ideas into a singular vision for the site. The resultant concept was the creation of a tenant-focused design that incorporates a vertical village concept. The tower is split into neighbourhoods to respond to the tenants' specific requirements and provide them with a unique identity within the overall building.

Three expansive client floors with recessed terraces are introduced between the

neighbourhoods to provide diversity of space and connection with the external environment. Setback columns provide flexible floorplates, and inter-floor connectivity has been achieved with fire-rated glass-fronted stairs. Premium amenities include high quality end-of-trip facilities, a series of terraces, an exclusive business lounge (managed by Work Club), diverse onsite food retailers, a boutique gym, and onsite childcare.

A new partnership between Mirvac and Work Club at Olderfleet sees co-working spaces, an underground Nordic bar, and café, alongside the business lounge. Work Club also provides a premium concierge service for the entire building, creating connections for tenants, hosting events from conferences to workshops, and educating and inspiring the workforce. The hotel-like end-of-trip facilities also offer 50 showers, 446 bike parking spaces, and 410 podium car parking spaces.

The Collins Street entrance to Olderfleet opens on to an enormous light-filled 7-storey atrium with soaring walls and columns. The 40-storey office tower has been seamlessly integrated into the original brick and timber structure, where old meets new with stone, steel, and glass.

The original façade and heritage buildings have been retained and an internal brick wall restored as a feature within the ground floor lobby.

The feature wall was restored using recycled 'vintage' bricks, sourced from a specialist supplier who salvaged them from a house demolition. The bricks used were made at the same factory as the original Olderfleet bricks, ensuring the wall retained an original and consistent colour.

Lovell Chen worked with Mirvac and Grimshaw to sensitively restore the buildings, creating boutique office and retail spaces

within. Carr collaborated with Grimshaw to create the award-winning interior design of the building.

Mirvac's sustainability strategy for Olderfleet includes data management and reporting to ensure optimal environmental performance for the building. There are LEDs throughout, rainwater harvesting with storage to a 216kL rainwater tank, and 176 rooftop solar panels use 'string communication' to respond to shade and mitigate energy loss. Car parking includes 22 EV charging stations with provision for 57 future spaces. Mirvac has established resource recovery targets for Olderfleet with an 80% diversion of waste from landfill by 2023 and zero waste to landfill by 2030.

Mirvac worked closely with tenants, including major tenant Deloitte, to identify technology requirements and offer a smart technology solution that can be tailored for bespoke tenant needs.

Olderfleet uses a Smart Building Technology Platform with an Integrated Control Network (ICN), enabling the building's systems to be interconnected with one point of control. This includes HVAC, lighting and utility metering, security systems, waste treatment, public Wi-Fi, and more, all displayed through mobile devices.

Olderfleet is the first building in Australia to achieve a Platinum Core and Shell WELL Pre-Certification. The WELL rating is a performance-based system for measuring, certifying, and monitoring features of the built environment that impact human health and wellbeing. Olderfleet is also on track to achieve a 6 Star Green Star rating, a 5 Star NABERS Energy rating, and 4 Star NABERS Water rating.

For more information contact Mirvac Group, phone 02 9080 8000, website www.mirvac.com





Below Custom Clad designed, manufactured and installed the aluminium cladding for the façade, ceilings and walls.

Established in 2012 Custom Clad is a leading façade cladding designer, manufacturer and installer, offering a comprehensive solution for façade cladding across a range of projects of any scale.

At the end of 2018, Custom Clad began the design work for Olderfleet. Prototypes were made for the architect's and engineer's approval with onsite work starting in early 2019.

“We installed multiple materials at Olderfleet including the façade cladding with Custom Clad’s own solid aluminium panels. In the lobby we installed GKD mesh ceilings. The design intent required hidden fixings on the GKD mesh ceilings so we engineered tie wire clips to leave a clear and clean ceiling,” said Design Manager, John Kinsella.

“We also installed Rimex black mirror ceilings and wall panels at high and low levels in the lobby. Rimex is made in the UK and we had a 12 week lead time,” John explained. “We made customised units for the ceilings and walls, with some pieces 4m long by 1,500 wide and we used it as trim around the elevators, door entrance and around the GKD ceilings.”

On the main atrium stairs, Custom Clad made aluminium framing for the MondoClad solid aluminium panels, which wrapped around the stair soffits and stringers.

With 12 installers on site at peak periods Custom Clad finished the job by the end of August 2020. “The challenge was coordinating with other trades. The lobby is 7-storeys high and we were all working together, one floor at a time, removing the scaffold as we worked downwards,” said John.

Custom Clad operates across Melbourne’s south-east with most of their work in low to mid rise apartment developments, commercial buildings and stadium. Custom Clad can draw on the experience of their inhouse design team, inhouse engineering and drafters as well as 45 fully qualified accredited installers including night works and elevated works teams.

At the 100m² factory and yard 20 people are employed manufacturing aluminium cladding panels, lightweight framing, sunshades and louvres, all with custom finishes. Options for composite cladding include stainless steel, glass and windows as well as timber look aluminium cladding. Digital 3D modelling, shop drawings and design reviews are also available.

Custom Clad’s self produced aluminium panels are strong, lightweight fire resistant panels that easily satisfy stringent fire standards. The powder coating is low maintenance, corrosion resistant with the ability to be folded into cassettes and recyclable.

Since the Lacrosse fire at the Melbourne Docklands in 2014, the suitability of façade cladding for multi-level structures has been in the spotlight and Custom Clad are currently working on a number of recladding projects to replaced old façade panels with their aluminium panels. In October 2019 they completed the recladding of the 19-level Aurora Apartments in Melbourne, addressing the safety of residents and reducing insurance premiums.

Previous successful projects for Custom Clad include Bolte Tower 11 at the Docklands with Mirvac, where Custom Clad designed, manufactured and installed its solid aluminium panels to the façade, walls, canopies and soffits.

In 2020, Custom Clad completed the especially detailed cladding of the curving façades of the Rod Laver Arena, creating a 3D model of the design, developing an efficient modular manufacturing plan to improve installation time. The individual modules, measuring 9m x 3m each, were assembled in the factory before transportation to the site and craned into place.

“In the future we hope to speed up production by making modules, already we designed and fabricated 500 aluminium and glass balconies delivered and installed to an apartment block,” said John.

For more information contact Custom Clad, 30-32 Apollo Drive, Hallam VIC 3803, phone 03 9791 2904, email info@customclad.com.au, webstie www.customclad.com.au

Below Fabmetal Specialists manufactured and installed a coloured stainless steel product TiVox, to the lobby, entrance area and podium.



Below Arup completed works to deliver Olderfleet for Mirvac including a comprehensive suite of NABERS, WELL and Green Star ratings.



Fabmetal Specialists established 1994, are the go-to experts for design, manufacture and installation of balustrades, handrails, architectural features and contemporary metal cladding of walls, ceilings and columns. Fabmetal were contracted to design and construct cladding to the ring beam and provide feature metal cladding to a 27m high H like column and transom. Both elements covered additional structural steel required to support the new works whilst maintaining the façade of the heritage listed Olderfleet building.

Initial specifications called for brass cladding with respect to the ring beam. Whilst Fabmetal has significant experience in brass they recommended using TiVox, with a PVD finish and AFP anti finger print coating – similar to that used on stainless steel fridges. TiVox accomplished the design intent to create a striking golden ring around the girth of the entrance and match the satin finish brass sample provided. TiVox, unique to Fabmetal, is a purpose made stainless steel.

TiVox in this case, avoided the aging patina of brass, will never tarnish whilst maintaining its luster and always look as fresh as the day it was installed. Fabmetal's signature product, TiVox is available in a range of finishes and colours especially suitable for large public spaces including beautiful mirror black columns which lend a grandeur to any space.

“In the lobby Fabmetal were contracted to clad a 27m high H like column. Fabmetal developed 172 modules up to 1,200 x 3,200 in Bx3 (bead blast black) finish totaling 650m² of cladding. Specialist equipment was designed in house to move the modules into position covering the monumental structural element whilst protecting the heritage listed gothic façade,” said Construction Manager, KW Soon.

Fabmetal Specialists can engineer, design and fabricate all types of architectural metalwork in any combination of materials including aluminum, stainless steel, glass, brass, copper, bronze, zinc, iron, graphite and related alloys for use in modern commercial design on façades, feature walls, columns, canopies, staircases, balustrading, decorative and stand-alone feature metal works.

“Currently we are developing a rigid backing panel for TiVox,” said Managing Director, Gordon Heald, with 40+ years’ experience. “We used Astromeg material that is light, strong and fire resistant. It’s properties virtually eliminate distortion and curving having a much better coefficient of thermal expansion than other materials like ply and MDF.”

For more information contact Fabmetal Specialists, phone 03 9720 2177, email enquiries@fabmetal.com.au, website www.fabmetal.com.au

Arup’s involvement with Olderfleet started at concept stage in 2013 and continues through to the performance tuning of the building. 200 Arup staff have worked on the project across the last eight years, designing and delivering a high performance and sustainable building for Mirvac and their tenants.

Olderfleet was the first building in Australia to achieve pre-certification for a WELL Platinum Core and Shell rating and is in the final process of achieving full certification following a range of operational performance verification checks including air, water, light, and acoustic quality.

The development’s broader sustainability credentials will be validated through the nationally recognised Green Star Design and As-built rating with a 6 Star certification targeted following independent verification by the Green Building Council of Australia. In operation, at least a 5 Star NABERS Energy Base Building rating and 4 Star NABERS Water Whole building rating has been targeted with Arup engaged to monitor and tune the building.

Arup’s guidance through the WELL process helped create a workplace that is sophisticated and future-proofed, designed for better health and wellness outcomes and leading to improvements in areas such as

employee productivity, engagement, and retention. “Sustainability is everything for our organisation and the Olderfleet building for Mirvac represents a significant step forward for high-rise commercial office buildings as we move towards our 2030 targets defined by the United Nations 17 Sustainable Development Goals,” said Richard Stokes, Arup’s Sustainable Buildings Leader VIC/SA.

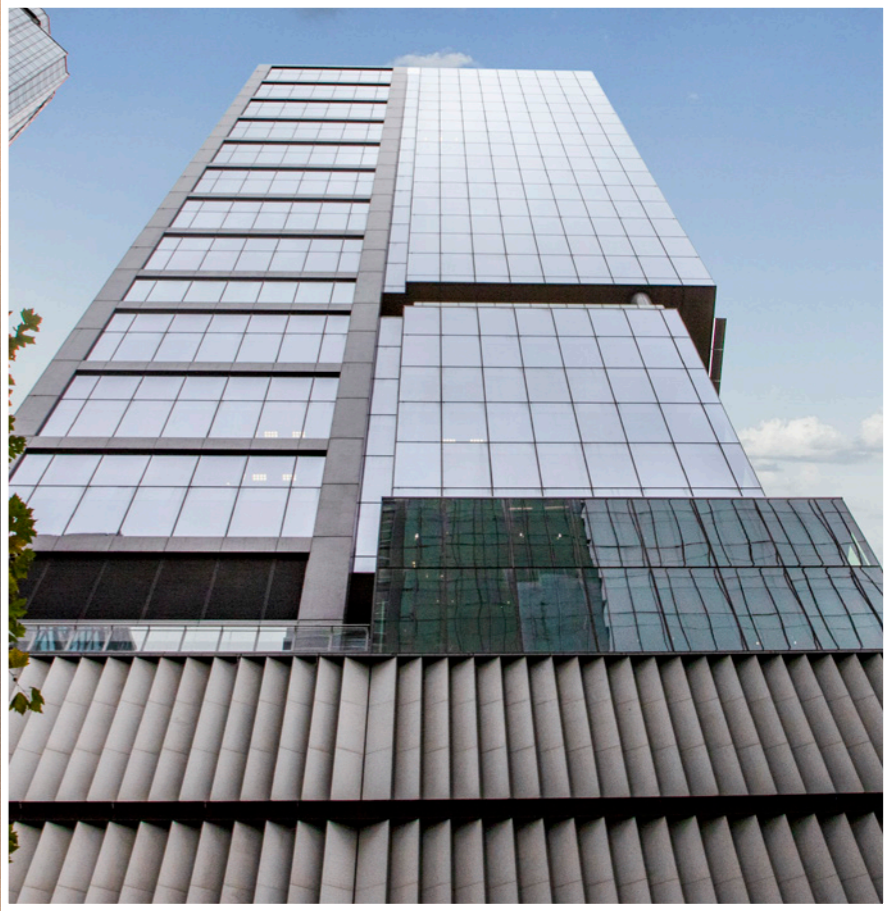
The photovoltaic (PV) panel array on the rooftop was maximised to take up all the available space and meet the back of house lighting energy demand on the occupied floors. It uses ‘DC optimisers’ to operate effectively even when partially shaded whilst the ‘SMART’ lighting incorporates daylight dimming and motion sensors throughout.

“The HVAC solution is a hybrid variable air volume and perimeter fan coil unit system that provides significant spatial savings, high energy efficiency and flexibility required for office use,” explained Arup’s Project Director, Dave Collins. “This system hadn’t been used in Melbourne on a commercial project before and we demonstrated its viability through our team’s sophisticated energy and 3D modelling.”

For more information contact Arup, phone 03 9668 5500, email melbourne@arup.com, website www.arup.com

Below Engineering Directions detailed, manufactured and installed structural and architectural steel for the 477 Collins Street Olderfleet project.

Below du Chateau Chun issued building and occupancy permits for the Olderfleet development.



Engineering Directions manufacture and install structural and architectural steel to top Tier 1 builders working across Melbourne. At Olderfleet, Engineering Directions were responsible for all steel across the site, including: retention and strengthening of the three heritage buildings; design development, manufacture and installation of the skylight system in the lobby; primary and secondary support steel for the East, West and South lobby walls; main lobby stairs and lift shafts; and the plant room structure on the roof.

“We had to retain the heritage structure during demolition of the existing building and strengthening of these buildings during construction,” explained Project Manager, Chris Axiak. “The challenge involved connecting the new build to the existing heritage structure. The only access into the heritage structure was through a scaffold and we couldn’t use equipment to get the steel in, it was moved by hand and with trolleys and winches.”

The workforce was reduced due to COVID-19 restriction and with 25 onsite during peak periods the job was finished by July 2020.

Engineering Directions is a skilled team with expertise in steel fabrication from concept through design, manufacturing and

installation. Their services include design development, site inspection and engineering services to facilitate design, fabrication and installation. They offer D&C or ECI contracts and structural steel packages. They supply a range of frames that includes custom steel and glass modular systems as well as pre-clad and pre-glazed steel frames.

“We have expanded our production capabilities by moving into a purposebuilt factory set on four acres with 6,000m² of factory floor. We have seven overhead cranes, with 30T capacity, a Daito CNC Coping Robot and an OMSG Shot Blasting Machine. Currently we are involved in structural steel projects for the Queen Victoria Market, the Shangri-La on Exhibition Street, 150 Lonsdale Street and Queens Place,” said Chris.

Previous work for Mirvac includes Eastbourne Apartments with Engineering Directions supplying and installing the structural and architectural steel to the 11-storey concrete building.

For more information contact Engineering Directions, 313A Dohertys Road, Truganina VIC 3029, phone 03 9369 9890, email sarah@engineeringdirections.com.au, website www.engineeringdirections.com.au

du Chateau Chun are experts in the implementation of building regulations, codes and standards. With over 30 years experience du Chateau Chun offer a range of consultancy services including structural, fire and accessibility compliance.

In July 2016, Director Greg du Chateau was appointed as the relevant building surveyor for the Olderfleet development. du Chateau Chun issued building and occupancy permits for the new commercial tower and the existing structure built in 1890.

“Upgrading existing buildings to satisfy today’s standards is especially challenging to architects, engineers and builders,” said Greg. “The Collins Street façade of the old brick and timber Olderfleet building was to be retained and integrated into the new construction which included the 7-storey atrium, a carpark and the 35-storey office tower to the back of the site.”

Addressing the compliance issues associated with incorporating new work into the existing heritage building was especially challenging, it involved aligning existing heritage architecture, structure, engineering services as well as managing to determine compliance with access and egress at the site.

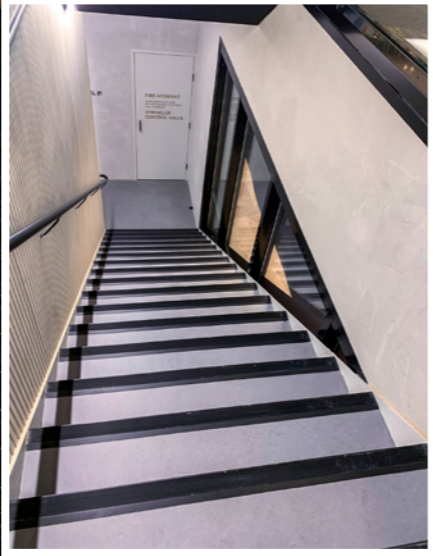
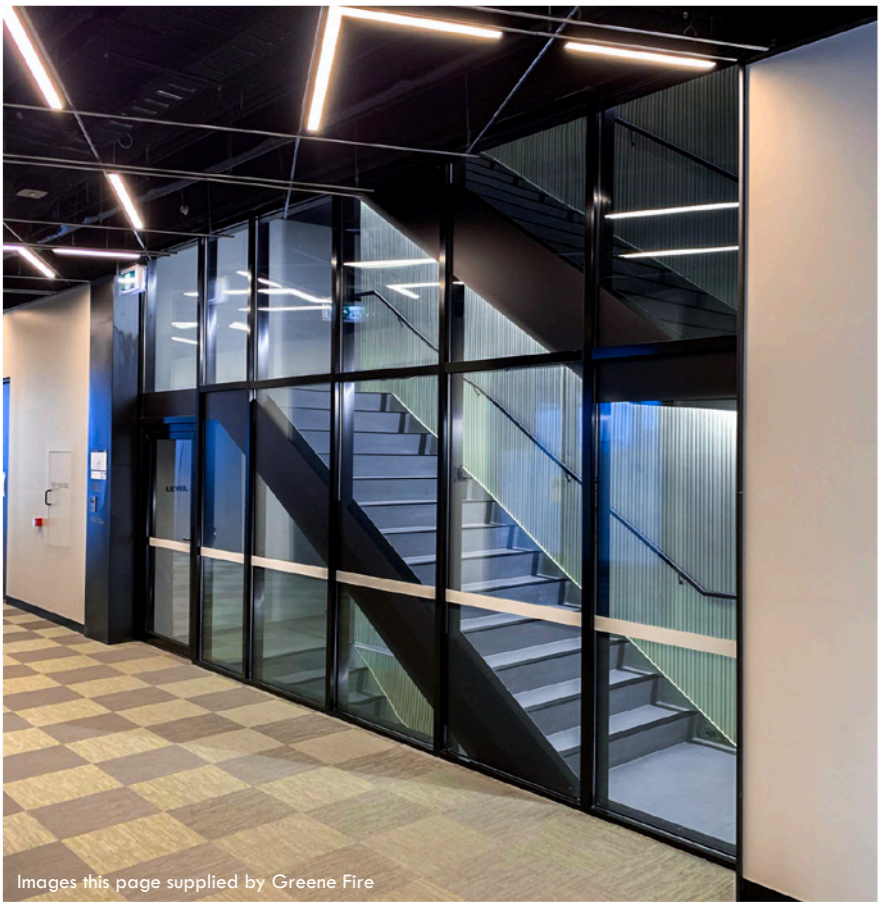
du Chateau Chun have offices in Melbourne, Sydney and Brisbane and service the eastern seaboard of Australia. As well as identifying and advising on fire and safety issues they are specialists in accessibility and DDA compliance and will work with clients at planning and DA stages as well as carrying out audits of new and existing structures. They also provide performance based design solutions, advice and reports to assess and improve regulatory compliance.

Currently du Chateau Chun are at work ensuring Mirvac receive building regulation compliance for their newest development, a commercial and residential development at Flinders West in the Melbourne CBD.

In 2018, du Chateau Chun completed work on Mirvac’s 664 Collins Street in the Docklands. The glass fronted, 9-level office building was constructed over an existing rail corridor forming part of Southern Cross Station, requiring coordination with local authorities and some detailed work to achieve compliance.

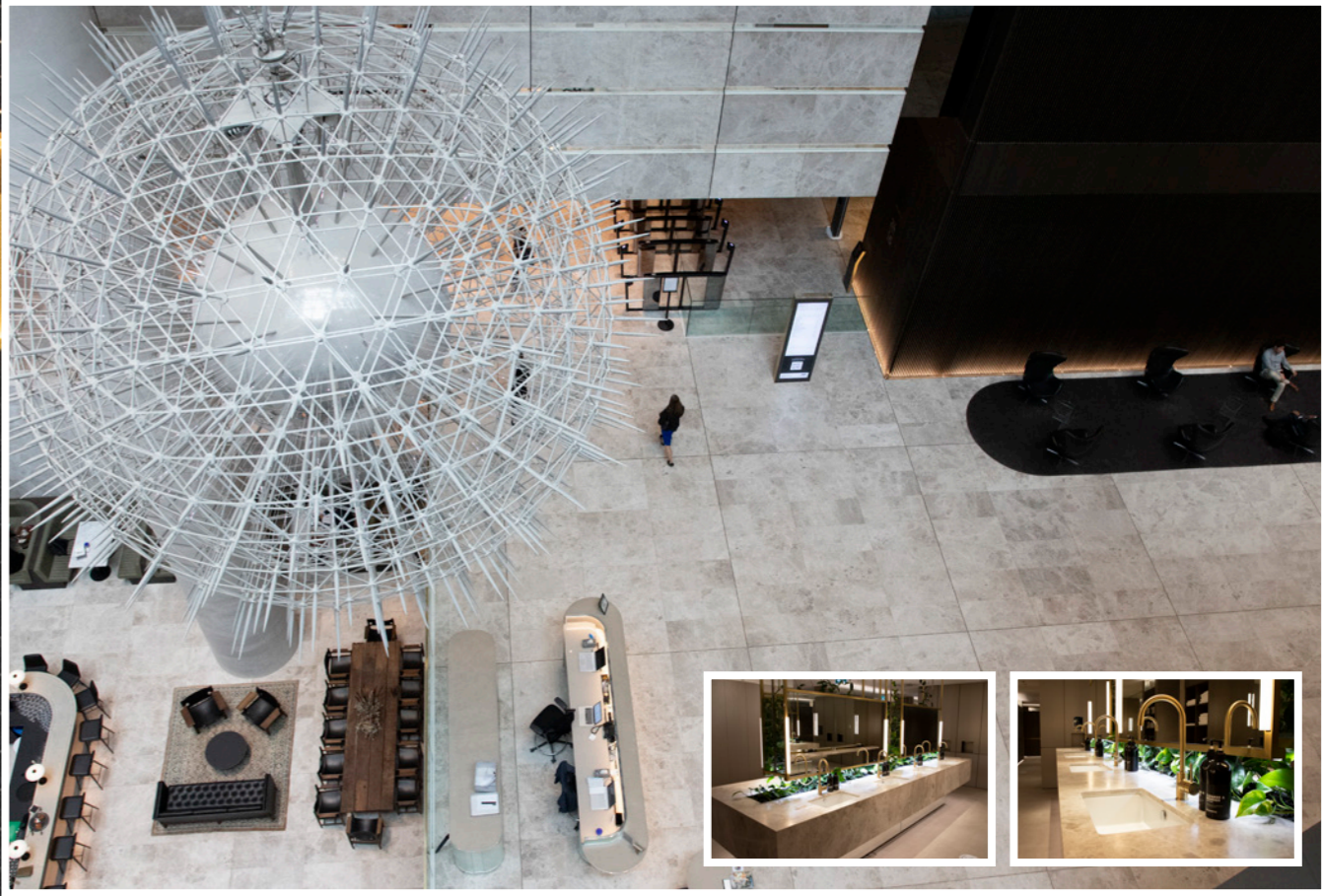
For more information contact du Chateau Chun, Suite 428, 838 Collins Street, Docklands VIC 3008, phone 03 9081 1688, email info@chateauchun.com, website www.duchateauchun.com

Below Greene Fire installed the largest fire rated glazing system in Victoria for the internal stairway from Levels 9-38.



Images this page supplied by Greene Fire

Below Link Stone Works created shop drawings, sourced, crafted and installed granite walls and floors to the lobby, and turco argento to benchtops and vanities.



Greene Fire specialises in the design and installation of fire curtains, fire rated glazing and specialist fire solutions. In March 2018, Greene Fire began design work for Olderfleet with Grimshaw Architects and the design team at Mirvac.

A clever building design feature was utilising only one central core stair for the entire building. Being both a fire stair and inter tenancy stair, it consisted single glazed fire doors and fire rating glazing with an FRL of -/120/120 from Levels 9-38.

“After months of careful planning we installed the largest fire rated glazing system in Victoria and one of the largest in Australia. We moved some enormous pieces of glass, panes that were 3m high and 64mm thick. The logistics of moving and installing that much glass was a challenge and had to be carefully organised in our local factory first, delivering each floor to site when required. It was a weighty load with each pane of glass weighing just under 400kg, needing specialist lifting machinery,” Darren Civil, State Manager for VIC, SA, WA and TAS explained.

“To cope with demand for our fire products, we have recently opened a new 1,650m² facility in Dandenong South where we will

be manufacturing aluminium framed fire rated glazing and heat attenuation screen.”

Greene Fire has offices and manufacturing facilities in Victoria and New South Wales for projects across Australia including commercial, residential, industrial, educational facilities and health care. Greene Fire design and installs niche fire solutions that give greater freedom to architects and building designers, enabling them to satisfy fire regulations in new ways. A popular product installed by Greene Fire is their FireMaster Concertina, a multi-sided self supporting fire curtain allowing for multiple interconnecting stairs and fire compartmentation which is completely invisible in non-fire mode.

Current projects include 405 Bourke Street where they are installing 12 large concertinas and fire rated glazing, circular concertinas curtains at Minter Ellison and Rosella complex which will be the new headquarters to Reece Group and the new beautifully designed Chancellery building at Monash University, Clayton where Australia’s longest fire curtain at 76 linear meter, is installed.

For more information contact Greene Fire, phone 03 8526 1990, email sales@greenefire.com.au, website www.greenefire.com.au

Link Stone Works is a professional team of designers, engineers, stonemasons and installers working throughout the Melbourne CBD and regional Victoria. Working to the architect’s specifications Link Stone Works created shop drawings, sourced, crafted and installed granite walls and floors to the spectacular 7-storey lobby at Olderfleet as well as to five other lift lobbies in the building.

“We also supplied and installed turco argento, a beige coloured and veined marble limestone, tops to the vanities in the end-of-trip facilities, as well as ceramic tiles to staff bathrooms,” explained by Project Manager, Steven Gomes.

“We source our material from many different places overseas including Turkey, India and China to find the right stone for the job. The long lead time meant we worked on the installation very quickly to meet the programme and with 40 installers at work we completed the job within six months. It was challenging moving the large pieces of stone up the scaffold, especially working around the other trades sharing the gantry.”

With 30 years combined experience the expert team at Link Stone Works provide custom designed stone work and is able to tackle the

largest of projects. Prior to installation they offer computer generated images of proposed work to ensure approval from designers and clients alike.

“Most of our work has been in the commercial sector,” said Steve. “We have recently started operation at our new 10,000m² facility where we can increase production of ceramic and porcelain tiles for the domestic market.”

Link Stone Works have completed many successful projects with Mirvac including the stylish stone cladding to the façade of the podium at Epworth Freemasons private hospital. In 2017, Link Stone Works completed the installation of travertine wall cladding with mechanical fixing to a suspended steel frame at Mirvac’s 664 Collins Street.

For more information contact Link Stone Works, 42-44 Jessica Way, Truganina VIC 3029, phone 1300 546 578, email sales@linkstone.com.au, website www.linkstone.com.au

