

MELBOURNE CONVENTION CENTRE

PLENARY GROUP
SOUTH WHARF, MELBOURNE, VIC

CENTRE OF ENTERTAINMENT

To rise above the mundane and ordinary and to achieve something new and challenging takes courage and foresight. The creation of the Melbourne Convention Centre (MCC), on the banks of the Yarra River, has involved just such a move of consciousness. Where other convention centres appear more like glorified sports stadiums in design and style, the MCC has thrown off this dated façade and rises as a modern, environmentally conscious, and technically advanced development that will serve Melbourne, Victoria and Australia long into the future. In doing so, the project is certain to set new benchmarks and challenge conventions and standards along the way.

Brookfield Multiplex Constructions are one of the few companies within Australia with the experience, expertise and foresight to deliver on a large scale development such as the MCC. Quite understandably they were extremely keen to become involved on the ground breaking development. In 2006, the Plenary Group Consortium was awarded the contract to deliver the new centre – Brookfield Multiplex Constructions was entrusted with the task of building the MCC.

The new 66,000m² Melbourne Convention Centre is part of the \$1.4 billion South Wharf redevelopment and consists of a 19 storey, 396 room deluxe hotel and a pedestrian bridge across the Yarra River, which will connect the new precinct with the North Bank and Docklands.

The unique triangular design of the MCC has already ensured that it will become a significant landmark on the Victorian Capital's skyline. More importantly though, the 6 Star Green Star GBCA accreditation the centre has achieved has ensured its iconic status as the only 6 Star Green Star rated convention centre in the world. This aspect alone is set to reap great rewards as today's environmentally conscious companies and corporations seek to minimise their carbon footprint by choosing venues and facilities that provide a high level of sustainability.

Some of these initiatives include:

- a black-water recycling plant that will recycle waste water to supply toilets, cooling towers and irrigate landscapes;
- all hot water requirements for the centre are catered for by solar hot water systems;
- much of the construction materials used have been sourced from sustainable sources;
- daylight sensitive lighting that adjusts the amount of daylight versus artificial light required in a room; and
- the use of passive initiatives such as specialised glass coatings to reduce heat ingress, a design that utilises the maximum amount of daylight, chilled floor slabs, and displacement ventilation.

The brief to deliver a convention centre with a 5,500 seat plenary hall that could also be divisible proved quite a challenge for both the designers and Brookfield Multiplex, however, working closely with the architects and engineers a solution was discovered and the centre now boasts perhaps the only hall of this size that combines both these attributes. The plenary hall can now be divided into three separate halls, each one with its own stage. Gala seating in the plenary hall allows for flexible arrangements of the seating into a wide variety of configurations. The centre also boasts 32 meeting rooms and a ground level foyer behind an 18m high glass façade that can accommodate 8,400 guests.

Plenary Group has been able to deliver the centre to the people of Melbourne and Victoria through a public-private partnership model with the Victorian Government under the Partnerships Victoria Model. Brookfield Multiplex have driven the construction process but Brookfield Multiplex Services were also awarded the contract to maintain the facility for the next 25 years on behalf of the Plenary Group Consortium.

The project has been integrated with the existing exhibition centre to create the largest facility of its kind in the country. Ground breaking technology has ensured the centre delivers on sustainability and innovation

through design. Plenary Group and Brookfield Multiplex are proud to be associated with what is sure to become one of the state's greatest accomplishments for the people of Victoria.

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HUFCOR'S GREATEST HEIGHTS

Hufcor, the world's largest manufacturer of operable partitions, has been awarded the contract to design, manufacture and install Australia's tallest operable wall for the redevelopment of the Melbourne Convention Centre.

Commenced in May 2006 and due for completion in 2009, the new Melbourne Convention Centre is being built on behalf of the Victorian Government by Plenary Group consortium Multiplex Constructions and is set to become not only a focal point for major events but also a showcase of the ultimate in design, construction and high tech installations.

The Centre features a main Plenary Hall with a maximum capacity of 5,000 persons which can be sub divided into three smaller configurations for 2500, 1500 and 1000 persons by the extension of the dividing walls. Meeting spaces also include the foyer area for 8,400 guests cocktail style and 32 meeting rooms of varying sizes.

The division of the areas is made possible by the installation of the Hufcor operable wall series. The Hufcor operable wall is 16.5 metres in height for the Centre and will be the second tallest in the world. The largest in the world, standing at 17 metres, is in South Korea's Trade

Centre and was also designed and manufactured by Hufcor, as were the third and fourth tallest installations, both in Australia.

A Hufcor operable wall allows operators to maximise profit-making potential of a space by creating extra rooms. It divides the available space to create meeting rooms, extra offices, function areas and even outdoor dining areas.

The series is ideal for hotels and ballrooms, restaurants and cafes, offices, schools and universities and especially facilities with an emphasis on aesthetics.

Hufcor operable walls involve moving, interlocking panels which are suspended from an overhead track system. The panels are sound rated for effective sound control.

The walls are available in paired and individual (omni-directional) configurations and can include pass-through doors for easy entry and exit.

Operable walls are available in a wide range of colours and finishes including vinyl, fabric and veneer with chair rails and wood mouldings also available.

Most importantly, as a major feature of a space, Hufcor operable walls are designed to blend with the room's interior style and décor.

The Hufcor team design, manufacture and install to a client's specific requirements and with over 100 installations per month in Australia alone, their reputation for care and attention to detail and high quality installations is enviable.

Their engineering and design team hold more patents than the rest of the industry combined and are undisputed leaders in creative partition design and outstanding workmanship.

From the largest operable walls in the world to the simplest wall systems, Hufcor's consultants focus on the individual client's requirements and offer a wealth of creative ideas backed by high quality manufacture and precise installation techniques to provide the ideal solution.

The Melbourne Convention Centre adds to Hufcor's outstanding portfolio of high project Australian projects which also includes the Gold Coast Convention Centre where the company installed the, 'soon to be third' tallest operable wall in the country.

The Hufcor Group is based at a head office in Tullamarine, Victoria and operates branch offices in NSW, Queensland, Western Australia, South Australia and in Wellington New Zealand.

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CDC ON MCC

As the Hydraulics Design and Construct Subcontractor on the Melbourne Convention Centre Development project, CDC Plumbing & Drainage is playing an integral role in creating a number of significant landmarks in Australian construction history.

When completed and integrated with the existing Melbourne Exhibition Centre the combined facility will be the largest of its kind in Australia. Included in numerous design ‘firsts’, it will be possible to divide the 5,000 seat plenary hall into three self-contained halls while ensuring a clear view to the stage for the entire audience and in a construction first, the site is using the tallest free standing crane in Australia.

But most significant to CDC’s involvement was the announcement earlier this year that the project has been accredited with the first 6 Star Green Star environmental rating in the world for a convention centre.

CDC Plumbing and Drainage work on the project entailed the design and installation of the complete plumbing system including sewer drainage, sewer treatment plant, hot water system including solar panels, cold water system and stormwater drainage system.

In terms of the size of the project, it is not the largest ever completed by CDC, but is significant due to the work required to achieve the Green Star Rating.

This included the use of HDPE pipe work in lieu of PVC products, a Black Water Treatment Plant that treats sewerage on site and re-uses the water for toilet flushing, irrigation of the gardens and also for the cooling towers.

The hot water system has a solar panel system where a large portion of the water heating requirements are achieved through solar energy. All male public toilets are equipped with water-less urinals and some of

the stormwater outfall is harvested and sent through the Black Water Treatment Plant for re-use.

Other Green features of the project include natural light and energy-saving controls on installed lighting plus lighting fixtures that adjust dependent on the amount of daylight detected in the room.

The Melbourne Convention Centre project is landmark development and yet another impressive credit for CDC’s list of significant projects.

CDC Plumbing and Drainage is a leading provider of commercial, industrial and multi-storey hydraulics to the building industry.

Based in Victoria with operations in other states and part of the global Hastie Group of companies, CDC has over 36 years experience servicing projects of high demand across a range of industries.

With a global connection and local strength, the company has extensive resources including OH&S management and implementation plus a highly experienced team of experts who can handle projects from small retail installations to large government buildings and projects such as the Melbourne Convention Centre.

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LANDMARK FOR FORM 700

The Melbourne Convention Centre is an iconic structure for Victoria and a landmark project for concrete structure subcontractor Form 700, and is one of the Company's largest projects ever undertaken.

The Multiplex Plenary Consortium was awarded the contract to deliver the 66,000 sqm project with Brookfield Multiplex delivering a total of \$480 million in building works.

Form 700 was contracted direct to Brookfield Multiplex to provide concrete structure services for the project which is Australia's largest and most comprehensive convention centre and exhibition precinct.

The scope of the Form 700 works involved building the concrete structure which included formwork erect and strip, reinforcement supply and fix, post tensioning supply and installation, concrete supply, pump, place and finish.

Form 700 utilised a combination of purpose built formwork systems, normal tableforms, structural metal decking, an aluminium formwork

pan system as well as numerous types of high reach equipment such as boom lifts and scissor lifts to access the high areas of the project.

The unique design features of the structure such as its 25m height, distinctive triangular roof area of 20,000m² and 18m high glass wall façade differentiate the structure from any other of its type and creates a dominant landmark for the precinct.

One of the unique design elements, the 70m long and 22m high 'Proscenium Wall' posed a number of challenges for the Form 700 team.

The wall was required to be formed freestanding and isolated from the rest of the project. To enable the wall to be built without the use of any scaffold, Form 700 utilised the innovative technique of creating a special formwork system which was crane handled in sections with a special cantilevered bracket system used as access and formwork support.

The 22m high, 2000 x 600 Plenary columns also had to be poured 'full height freestanding' so a frame, complete with formwork guide rails was

purpose-made to eliminate the need for scaffold and to allow a column to be poured every 3 days.

This large and complex project posed a number of other challenges including overcoming the issue that the slabs over the large batters around the perimeter couldn't be formed therefore large steel beams were used to span across the batters with holes left in the concrete slab to aid the stripping of the beams by lowering them to the ground.

The MCC project adds to Form 700's track record for using innovative construction methods and work practices to complete structures faster, safer and more cost effectively than other businesses in their field.

Subcontracting direct to the principle builder, Form 700 provides a range of services including formwork erect and strip, reinforcement supply and fix, post tensioning supply and install, concrete supply, pump, place and finish, jumpform design, fabricate, erect, operate and dismantle, perimeter self climbing safety screen systems, tower crane operation and precast erection.

Form 700 builds structures in the commercial, industrial and high rise residential marketplace for both private and public enterprises and has supplied services to a number of landmark buildings including the Royal Women's Hospital, CBW, South Wharf Development, Lucient Apartments, Conservatory on Hindmarsh and Chadstone Car Park Extension.

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STONEVUE CREATES CONCRETE CANVAS

The Melbourne Convention Centre is included in the growing number of projects in which Stonevue pavers have been specified and their popularity is testament to their practical advantages and cost effectiveness.

As described by Stuart Pope, Landscape Architect with ASPECT Studios, the designs for the MCC external paving were based on the alluvial flows of the Yarra River and these designs were integrated with the internal paving of the building.

A cost-effective alternative to natural stone, Stonevue pavers were selected by ASPECT Studios for their textural qualities, high quality finish and structural integrity. The project required a denser product that provided greater wear resistance and also had increased dimensional stability for use in Emergency vehicle access paths and areas where high bearing loads will be regularly applied.

Stonevue pavers are manufactured with a hydraulic wet press - a century old process pioneered in Europe that presses the pavers at 600 tonnes. This results in significant benefits for commercial applications including stronger abrasion resistance, increased density and lower absorption rates, high breaking loads, consistent colour and density throughout, allows tougher cleaning without damaging the surface, retains colour for the life of the paver and is suitable for use in a wide range of climates.

Stonevue supplied 13,000m² of pavers to the MCC project and worked closely with contractors 2Construct to ensure deadlines were met.

Designed specifically for commercial and civic applications Stonevue offers an extensive range of pavers, stairs & kerb units with unrivalled strength, style & durability.

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ACHIEVING 6 STARS

As specialists in large-scale plastering projects, the massive Melbourne Convention Centre project was well within the capabilities of specialist plastering contractor, Expoconti.

Expoconti was contracted to complete the plastering of the internal ceilings and walls of this icon structure, which involved over 100,000 square metres and 199 employees over an 8 month construction period.

CSR plasterboard was used on the walls and a specialised perforated plasterboard sourced to meet the acoustic requirements of the ceiling areas. The Melbourne Convention Centre is aiming at achieving a 6-star building rating and this required Expoconti to use as much recycled material as possible. This was achieved with the use of Powerscape recycled plasterboard throughout much of the project.

The high ceilings and large wall areas posed access issues which were solved with the use of specialised scaffolding.

Established in Melbourne over 17 years ago, Expoconti specialises in large-scale plastering and external facades.



From their head office in Dandenong, Victoria, the company has experienced steady growth, expanding from its Victorian base to complete projects in South Australia, Brisbane and Airlie Beach.

Their portfolio includes many impressive projects including Telstra Dome, ANZ Stadium, Waterfront City and they are currently working on the new hotel at Crown Casino in Melbourne.

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MARKFORCE FITOUT MCEC

With an impressive portfolio which now includes the Melbourne Convention and Exhibition Centre, Markforce International has an enviable reputation as THE company to complete large multi-million dollar commercial kitchen installations.

Markforce are stainless steel fabricators specialising in the commercial kitchen sector and providing developers with a complete turn key operation. Markforce ensure all fitouts are of exceptional quality by keeping everything in house. With the use of state of the art 3D Inventor & AutoCAD technology, Markforce complete all service and shop drawings manufacture all equipment at their own manufacturing plant in Bayswater Victoria, deliver all the equipment with their own fleet and their highly experienced technicians fully install the fitout to operational levels. Finally, qualified project managers ensure that all projects are closely managed with the builder/client to ensure deadlines are met.

The company is one of the few in Australia which has the infrastructure and experience to successfully handle the project management and logistical issues associated with a project as large and complex as the MCEC.

This \$5 million plus fitout involved the installation of cafeterias, kiosks, and serveries, dishwash areas incorporating large conveyor dishwashers with soft water systems, cool rooms, remote refrigeration and refrigerated cabinets. All equipment designed to achieve the buildings 6 star green rating.

Following the company's success on the MCEC project, Markforce was also contracted to fitout the Hilton Hotel on the same site at Southbank in Melbourne, bringing the total project size to around \$7 million and making it one of the largest commercial kitchen installation projects in Australia. The Hilton Hotel project was particularly significant as it features a 'show' kitchen and bar which will be on display to the public.

As one of the leading commercial kitchen companies, Markforce has been involved in many large and significant projects including the MCG redevelopment, which at the time was the largest commercial kitchen fitout ever undertaken in the Southern Hemisphere; Crown Casino , Crowne Plaza Hotel & Resorts, RAAF Base - Sale, RACV Melb/Healesville, all company owned IKEA stores and many Coles/ Safeway fitouts.

Markforce has completed projects, both large and small, throughout Australia and the Pacific with recent small but significant projects including Jamie Oliver's '15' Restaurant in Melbourne, The Melbourne Theatre Company and the Victoria University Footscray campus fitout.

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UNIQUE SEATING

Metaltec Precision Engineering installed its unique reconfigurable seating system in the new Melbourne Convention Centre, making the venue a truly multi-purpose space.

This unique system is built around a series of individual lifting mechanisms that are coordinated via PLC and transform a space from performing arts theatre to basketball court to boxing ring to just about any entertainment or meeting purpose, quickly, conveniently and safely.

The heart of the system is the Spiralift®, a patented mechanical actuating unit that has been used extensively in theatres and showrooms in Las Vegas and has also been adapted for industrial applications such as automotive manufacturing.

Metaltec is a fully accredited Spiralift® integrator and provides design, installation, service, training, prototype development and testing, performance demonstration and repair for the system in Australia.

The reconfigurable seating in the MCC consists of 42 independent seating rows which can be raised, lowered and set to a fixed elevation, thus allowing the floor to be tiered, flat or many combinations in-between. Each seating row houses self-contained banks of seating that may be stowed under the row via a rotation mechanism. The system automatically stows the seats directly under the floor, thus eliminating the need for both labour and storage rooms.

Metaltec has the capability to design the system for new developments or retro-fit existing venues, incorporating special applications such as heavy vehicle access, under-floor ventilation and services and orchestra and stage risers. The system can be adapted to any sized venue in single or multiple smaller sections.

The benefits of the system to operators are immense and highlight Metaltec Precision Engineering's reputation as an internationally competitive provider of innovative engineered solutions.

Based in Melbourne, Metaltec provides a turnkey project management service for large engineering work packages in the aerospace, defence, automotive, mining and infrastructure sectors with capabilities in design and development, welding and fabrication, precision CNC machining, tooling assembly and testing and inspection and metrology.

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The luminous footbridge to the Melbourne Convention Centre



SUCCESS FOR PATCHMAN

Patchman, (CXM Building Constructions Pty Ltd), are specialists in the repair and completion work of architectural precast panels and their work on the Melbourne Convention Centre further enhances their impressive reputation for high quality workmanship.

Rectification work involved repositioning of stitch plates and included grouting, patching, caulking and cleaning of white precast panels. Patchman successfully achieved a consistent look throughout the project by utilising their unique cement-wash system to colour match discoloured precast panels - a method also used previously and successfully on the Royal Women’s Hospital development.

Patchman are the leading specialists in achieving the highest quality architectural finishes of precast panels following installation. They offer a range of services including the repair and protection of polished precast, acid etched, exposed aggregate, colour-matched concrete, remedial systems and facade restoration.



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The outdoor area of the Melbourne Convention Centre

