

The \$65M Brickworks Marketplace combines the ideal retail experience while incorporating Torrensville's historic kiln and landmark chimney. Some new stores include Woolworths, Big W and Dan Murphys.

Completed in June 2015, the \$65 million Brickworks Marketplace in the Adelaide suburb of Torrensville, offers a new and vibrant retail choice for the community while paying tribute to the history of the site. Located just five kilometres from the Adelaide CBD, the 17,000m² shopping centre includes a Woolworths supermarket, Big W and Dan Murphy's. The development also incorporates 41 specialty shops, offering shoppers a diverse choice of retail outlets in addition to everyday shopping needs.

Construction company BADGE was contracted to design and construct the suburban shopping centre. The project was hard money tender with a project completion date of August 21, 2015.

Central to the Brickworks Marketplace are its historic features – the centre has been built around the old brickworks kiln and landmark chimney, and over the pug holes of the original brickworks, where clay was removed.

According to BADGE's Mark Wyatt, in addition to its retail offerings, one of the standout features of the Brickworks Marketplace is the shopping centre's sympathy to its heritage site. "This includes the graphics depicting the heritage of the site as a clay brick pug hole and the re-use of bricks within the development, recovered from the demolition of two cottages within the restaurant precinct. The use of brick facings also tie the building to the adjacent kiln," says Mark.

Given the history of the site being used as a brickworks, there were a few issues that had to be considered and overcome during the retail centre's construction. "The site was an old rubbish dump that had been decommissioned since 1974," explains Mark. "Therefore the early works on site included compacting and filing the dump with up to 7 metres of fill. We imported 302,700 tonnes of material to fill the hole."

With such a large amount of material needed to fill the hole, unsurprisingly, the site saw an increase in traffic, with trucks arriving at the site every three minutes, six days a week. This in turn caused traffic congestion on Adelaide's main north south corridor. "Significant planning went into mapping routes and minimising impact on traffic routes and businesses, such as splitting truck routes, slowing traffic and so on," adds Mark.

"There was also the issue of the management of site contaminants that existed as a result of the previous usage as a rubbish dump. Environmental engineers were fully engaged and conducted monitoring throughout the site and plant used on site." The use of the deep impact compaction technique with a heritage kiln within 10 metres of the boundary of the site also needed to be considered.

"We achieved deep impact compaction whilst maintaining full vibration monitoring to the heritage kiln in accordance with DIN 4150 part 3 [short-term vibration on structures] and results less than 3.0mm per second," says Mark.

"The deep impact technology enabled existing materials to be managed on site with limited remediation. All site was cut to a level to suit in-ground services so that during install there was no risk of contamination to workers."

Excluding the design team, the Brickworks Marketplace development saw around 1420 workers on site at its peak. BADGE worked with a number of stakeholders during the shopping centre's construction, including the developers Fabcot Pty Ltd (later Charter Hall). "The City of West Torrens were also very supportive. We also worked with the Development Assessment Commission and the South Australian Heritage Council," says Mark.

Adding to the success of the shopping centre construction for BADGE is the development's completion ahead of the August 21 deadline. "The project has been completed 66 days early due to the gains achieved during earthworks and remediation."

For more information contact BADGE, 9 Anzac Highway, Keswick SA 5035, phone 08 8293 5099, fax 08 8293 5799, email adelaide@badge.net.au, website www.badge.net.au

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**Below** Brown Falconer provided Architecture and Design services to the Brickworks Marketolace.



Recently having celebrated their 70th birthday, Brown Falconer is a practice that is dedicated to creating better architecture for their clients and the community. The company works with clients from multiple sectors of the construction industry, including retail, commercial, multi residential, education, health, aged care and local government.

With a design team of 30, Brown Falconer focus on celebrating the importance of place and location. This is evident through their work on the Brickworks Marketplace. Brown Falconer provided master planning, architectural and interior design services for the 25,000m² retail development and with a team of six people, worked over a five year period to develop a plan which creates an activated retail street connected to the broader community.

The plan incorporates pedestrian linkages and culminates at a restaurant and hospitality precinct, focused around the heritage kiln and outdoor plaza.

"The project represented a major urban regeneration opportunity to redevelop a former industrial site which had been used as markets and which had been the subject of numerous unfulfilled proposals, into a major retail centre," Brown Falconer's Mario Dreosti says.

"Material cues and interpretive art work reference the history of the site as a brick works through to the retail centre and provide an evocative design connection which offers a strong sense of place and identity to the development."

"The site presented unique challenges with a significant depression from years of excavation, adjacency to the heritage listed kiln and chimney and environmental impacts from years of industrial use," he adds.

"A unique compaction solution was devised to fill the site and allow construction of the centre and car parking, because soil quality was so poor that a basement construction was unfeasible."

Brown Falconer are also working on retail town centre developments in Western Australia and a major mixed use redevelopment of the former Balfours site in the CBD of Adelaide where the same techniques of reference and historic connection are being explored.

For more information contact Brown Falconer, 28 Chesser Street, Adelaide SA 5000, phone 08 8203 5800, fax 08 8223 2440, email bfg. admin@brownfalconer.com.au, website www.brownfalconer.com.au

Douglas Partners provided supervision and testing of the ground improvement and over 500,000m<sup>3</sup> of bulk earthworks for the Brickworks Marketplace project.

The project presented special challenges for the consultancy services firm, with existing variable fill and a large quantity of imported fill, as well as tight settlement and compaction requirements. Douglas Partners worked closely with builders BADGE Constructions and specialist contractor Landpac Technologies to develop a practical and cost effective approach to these challenges.

"The method of High Energy Impact Compaction was adopted to compact the existing subgrade, thus avoided rehandling of existing fill," Douglas Partners Andrew Middleton explains. "It was also beneficial in the reuse of existing brick and other materials that are often sent to landfill and backfilling the pit with a by product of quarry crushing operations using deep lifts.

"This was all beneficial for the community and the environment as it resulted in fewer trucks on Adelaide streets, less greenhouse emissions, didn't fill up landfills and didn't use non-renewable resources unnecessarily, with less time and cost."

With more than 50 years experience and the completion of over 80,000 projects, Douglas Partners specialises in the fields of geotechnics, environment, groundwater and laboratory testing.

The Australian firm is wholly owned by its employees and its experienced staff includes Geotechnical, Environmental and Groundwater engineers plus scientists and Earthworks Testing Technicians throughout the country. With a strong appreciation of the practical considerations and requirements on clients' projects, the firm continues to sustain strong and productive working relationships with its clients, while setting high standards in the delivery of its services.

Douglas Partners has regional offices in Sydney, Brisbane, Canberra, Newcastle, Melbourne, Darwin and Perth and branch offices in Geelong, Cairns, Macarthur, Gold Coast, Sunshine Coast, Townsville, Wollongong and Central Coast.

For more information contact Douglas Partners Pty Ltd, 439 Montague Road, West End QLD 4101, phone 07 3237 8900, fax 07 3237 8999 email brisbane@douglaspartners.com.au, website www.douglaspartners.com.au

Below Boral Asphalt supplied
asphalt and prime for the Brickworks
Marketplace car park.



With an experienced team capable of delivering quality outcomes on tricky projects, Boral Asphalt continues to demonstrate their expertise when it comes to delivering asphalt works on significant projects – including the Brickworks Marketplace. Boral Asphalt's Contracting Operations Manager David Boots says the company supplied and laid asphalt and prime to the Brickworks' car park areas.

"The job incorporated the production and laying of red-coloured asphalt at the entranceway to the car park to match the iconic red brick stack at the old brickworks site," David explains. "The red-coloured asphalt is a special process requiring considerable preparation prior and during the works to prevent contamination of the colouring.

"We needed to ensure all equipment was clean prior to the works to prevent discolouration. We also needed to liaise with our client – BADGE and other contractors on site to ensure the process went smoothly," he adds.

Daniele Galeano managed the project for Boral, and around 25 people were involved in the job from laying crews to production personnel, to laboratory and technical staff.

As one of the leaders in asphalt paving, pavement construction and maintenance, Boral Asphalt supplies its asphalt products and materials for the surfacing and maintenance of road networks across Australia. This is combined with a high standard of engineering expertise, road technology, product durability, quality and a technical service.

Boral Asphalt also provides construction industry advice regarding materials selection, including asphalt and paving materials, performance, compliance and durability.

Its skilled and experienced team delivers asphalt road maintenance services to councils, contractors, asset owners and managers. Additionally, it supplies a number of asphalt paving products and various surface treatments and spray seals.

Boral Asphalt is working on a series of road reconstruction projects, which have been commissioned by the state government as well as airside pavement works at the Adelaide Airport.

For more information contact Boral Asphalt, 69 Mooringe Avenue, Plympton SA 5038, phone 08 8351 1832, fax 08 8351 1834, email david.boots@boral.com.au, website www.boral.com.au

Established in 1995 in Australia, Landpac Technologies Pty Ltd specialises in providing and implementing ground improvement solutions on compressible unstable sub-grades and deep lift compaction with the use of impact compaction.

Landpac was engaged as a specialist ground improvement sub-contractor by BADGE Construction (SA) Pty Ltd on the Woolworths Brickworks Marketplace development in Adelaide that consists of Big W and Woolworths Supermarkets and other retail outlet on a 4.7 ha site.

The site was formerly used as a brick manufacturing plant and quarry. The production of bricks ceased in 1979 and the site was filled with a variety of materials including demolition, industrial and quarry wastes ranging in depths up to 11.5m.

It was economically prohibitive to remove and replace the un-controlled fill materials on site and a ground improvement solution was formulated using deep impact compaction for the in-situ compaction of the existing fills.

The site was partially excavated to 2.3m below finished floor level and the residual in-situ fills compacted using Landpac's 175kJ (Kinetic

Energy) Impact Compactor with a 15t Impact Drum Module, which is the largest impact compactor available in Australia. This was required to achieve the necessary deep compaction and the specified differential settlements of less than 15mm.

Approximately 100,000m<sup>3</sup> of fill was imported to achieve the design levels. As a more cost effective and quicker alternative, the fill was placed in approximately 1m thick layers and compacted with impact compaction. A bearing capacity of 250kPa for the foundations was achieved.

Geotechnical testing and verification of the sub-grade design parameters were provided by Douglas Partners Pty Ltd.

Landpac (Australia) provides impact compaction services throughout Australia and to the Asia Pacific region.

For more information contact Landpac, PO Box 132, Seven Hills NSW 1730, phone 1300 237 045, email info@landpac.com.au, website www.landpac.com.au

Below Diverse Fire provided and Below Ace Panel Systems provided extensive insulated products for the installed fire protection systems on the Brickworks Marketplace.



Providing excellence in the field of fire protection, Diverse Fire takes pride in continually maintaining harmonious relationships when working on significant developments such as the Brickworks Marketplace.

Specialising in the installation of fire protection systems, Diverse Fire designs, manufactures and installs fire pipe and sprinkler systems including hydrants, hose reels, pumps, tanks and underground plumbing. The company also provides labour hire and fabrication services to other fire industry organisations.

Working on the Brickworks Marketplace, Diverse Fire provided the installation of fire protection systems to the development. This included the fabrication and installation of fire pipework and sprinklers to Woolworths, Big W, Dan Murphy's and the tenancies within the complex. Diverse Fire also installed extinguishers, hose reels, hydrants, pumps and tanks on the project.

Ensuring the project deadline was adhered to, Diverse Fire had a team of eight on site with additional staff working behind the scenes. As the project was built on three consecutive fronts, Woolworths, Big W and the malls and tenancies were all constructed at the same time to

meet the project deadline. As with every project, challenges can often arise and the Brickworks Market was no different. Not only was the base building required to be finished on time, the tenancies fit out works (which were works outside the project program) also had to be delivered on time to meet hand over requirements.

A family-owned and operated business now entering its third generation in fire protection, Diverse Fire's Director Angelo D'Alfonso has over 35 years of experience in the fire industry. The business employs more than 15 staff who collectively have over 50 years of knowledge and expertise in the industry.

Other projects that Diverse Fire have worked on include the extension of the Gilles Plains Shopping Centre (including the new Aldi and Woolworths Store), Ozone Cinemas in Glenelg, Wallaroo Town Centre, Origin Energy Glenside Hospital retro fit as well as labour hire and fabrication works.

For more information contact Diverse Fire Group Pty Ltd, 1 Starr Avenue, North Plympton SA 5037, phone 08 8376 8506, email admin@diversefire.com.au

With a staff that has collectively more than 100 years of experience in the insulated panel industries, Ace Panel Systems always ensures it provides a quality product and service - all at competitive prices and to client satisfaction.

A local Adelaide company, Ace Panel Systems employs around 30 staff members. They mainly supply and install sandwich panel structures from EPS, Xflam and PIR core panels to BCA Groups 1 and 2, and FM Global Class 1. The company is also a recommended member of the Insulated Panel Council of Australasia Ltd (IPCA).

Given the company's experience and expertise, they were a sensible choice to work on the Woolworths store at the Brickworks Marketplace.

"Ace Panel Systems supplied and installed to the Woolworths store insulated sandwich panel doors, walls and ceilings to coolrooms, freezers, bulkheads and internal builders walling for the refrigeration company and builder," joint Directors Dean Franke and Joel Eley explain.

"Two crews of two men worked on the project. The only challenge we experienced was the unusually large panel bulkhead up to the roof of the building, as the roof was also insulated."

With their extensive knowledge of the panel industry, combined with an ability to design and construct any structure and associated building works from sandwich panel, Ace Panel Systems' services continue to be in demand across Adelaide. The company also offers its clients a no-obligation measure and quote service as well as CAD drafting and a maintenance and service department.

Woolworths store at the centre

Currently, Ace Panel Systems are completing a number of other insulated panel projects for Woolworths around Adelaide as well as On the Run convenience stores, other independent supermarkets and fuel stores for refrigeration companies.

Ace Panel Systems is also carrying out insulated panel works for various take away businesses, Lion Nathan, food storage and production areas for Adelaide's Mercorella Group, winery stores, clean rooms, liquor stores and more - mostly for builders and the refrigeration trade.

For more information contact Ace Panel Systems Pty Ltd, 5 High Street, Dry Creek SA 5094, phone 08 8359 4317, fax 08 8359 4318, email email@aps-pl.com.au, website www.aps-pl.com.au



Below Boral Masonry supplied and
built the retaining wall system for

Brickworks Marketplace.

Brickworks Marketplace.









As a recognised leader in paving and retaining walls, Boral Roofing & Masonry were the obvious choice when it came to constructing the retaining wall at the Brickworks Marketplace.

Boral supplied and built the retaining wall system using Pyrmont® blocks. Featuring a straight edge, Pyrmont® can be used to build walls up to 12m high – when designed by a suitably qualified engineer and combined with soil reinforcement.

"The wall built at Brickworks Marketplace is currently 43.8m² with an average height of 900mm. A total of 482 blocks were used and it took approximately four days to complete," Boral Roofing & Masonry's Charlie Condo says.

"The advantage of this block retaining wall is that no concrete footing was required, it can be extended quite easily and it is also unattractive to graffiti vandalism due to its split face texture."

"The wall was constructed early in the project and had to be durable enough to handle construction plant, materials laydown and general construction activities whilst maintaining the aesthetic appeal of the block and integrity of the wall."

As well as Pyrmont<sup>®</sup>, Boral supplies and constructs other types of retaining walls, including Keystone<sup>®</sup>, an angled block profile which can also be built up to 12m.

For smaller heights and a different look, Boral offers other walling solutions including Gardenwall®, Heathstone® Grande, Heathstone® Regal and Litewall®. It also has a collection of commercial segmental paving systems engineered for high volume traffic and heavy loading. Manufacturing and supplying building materials in South Australia, Victoria, New South Wales and Queensland, Boral's range includes concrete and terracotta roof tiles, bricks, blocks, retaining walls and pavers. In South Australia, Boral offers installation services as well.

The Brickworks Marketplace is one of a number of projects Boral has undertaken for BADGE, with both companies enjoying a strong business relationship that works well at all levels of their site and management teams. Boral is also working on several local government/public space paving projects.

For more information contact Boral Roofing & Masonry, 1161 Main North Road, Pooraka SA 5095, phone 1300 360 255, website www.boral.com.au As Australia's leading developer and manufacturer of modular steel handrails, guardrails, balustrades and barrier solutions, Moddex Group's innovative systems have been successfully installed across a range of sectors, including construction, mining and civil applications. Sold throughout Australia and New Zealand, Moddex provides flexible and cost-effective systems that make the installation of handrails and balustrades simple.

BADGE Constructions selected Moddex Tuffstop Trolley Bays as part of the redevelopment of Brickworks Marketplace. Located in Adelaide and developed by Woolworths Limited, new trolley bays were required to meet the shopping centre's high traffic demands.

"Moddex manufactured trolley bays to meet Woolworths' standard criteria. Following manufacturing of the bays, a small crew then installed the bays on site while fitting in with the builder's schedule," said Area Sales Manager at Moddex Reuben Jensen.

Manufactured from hot-dip galvanised steel for enhanced corrosion protection, Moddex Tuffstop Trolley Bays and Safety Bollards are independently load tested to Australian Standard AS 1170.

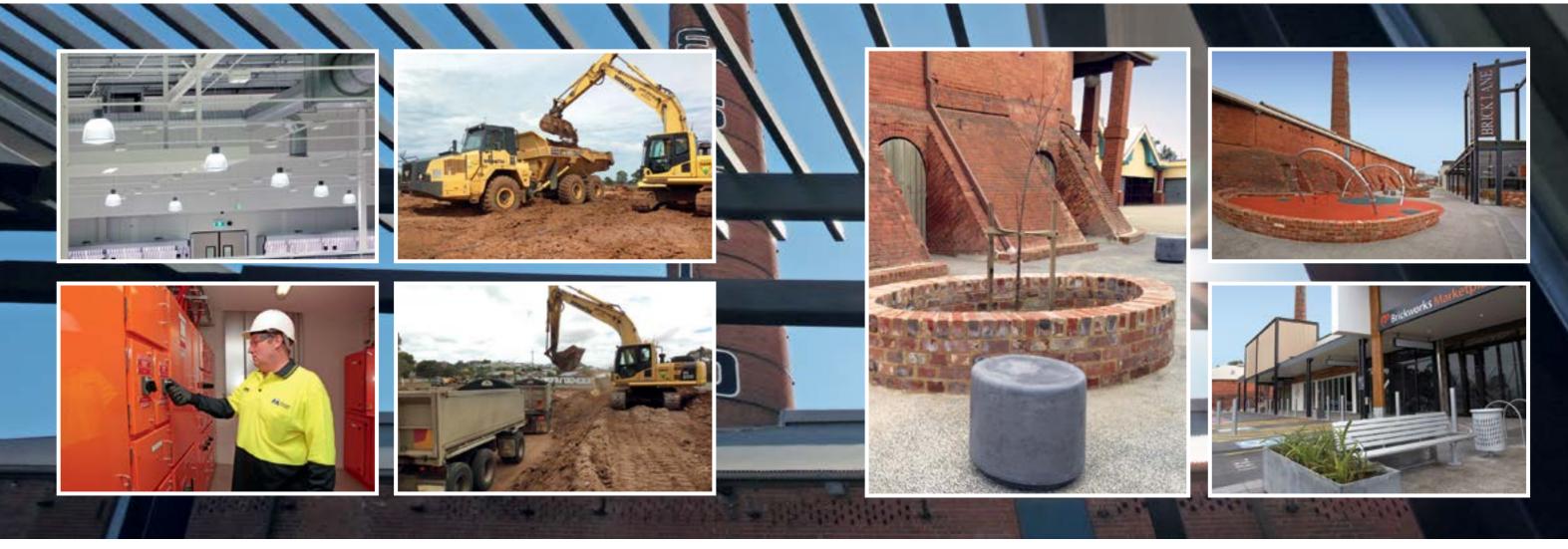
With a range of proprietary designs available off-the-shelf for immediate installation, Moddex Tuffstop Trolley Bays provide significant benefits over the traditionally-welded alternatives usually seen at shopping centres,

"Because no welding is required, the systems can be assembled quickly and simply, eliminating fabrication costs, hot works permits and site shut-downs. There is also a reduced safety risk for both the installer and to the public as the bays can be easily removed, repaired, modified or extended," Reuben added.

Moddex is working on a variety of projects in the retail sector, including works for Masters, Woolworths, Bunnings, Coles and other shopping centres – including Mt Gravatt Plaza and Pacific Fair. The projects are located across Queensland, New South Wales, Victoria, South Australia and the Northern Territory.

For more information contact Moddex Group, 44 Kalman Drive, Boronia VIC 3155, phone 1800 663 339, fax 03 8202 5109, email info@moddex.com.au, website www.moddex.com.au





Known for their depth of knowledge, resources and quality workmanship, Tad-Mar Electrical was awarded Woolworths Supermarket's electrical package for the Brickworks Marketplace. Works consisted of the supply and installation of switchboards, lighting and power, standby power generation, exit and emergency lighting, Siemon Certified cabling system and essential life services. Energy efficient LED lighting was installed throughout the majority of

lighting, Siemon Certified cabling system and essential life services. Energy efficient LED lighting was installed throughout the majority of the store's produce areas, providing a cost-effective lighting solution. Tad-Mar is proud to be associated with this project having produced high-quality work with a full time site supervisor, monitoring six A Class electricians and two communication technicians.

Tad-Mar Electrical, which was established in 1975, specialises in electrical services, structured cabling systems and maintenance. It has a dedicated workforce of 65 people, focusing on medium to large commercial projects. Its current projects include three major Adelaide shopping centres, two 100-bed residential care facilities and ongoing maintenance with several major retailers throughout South Australia.

For more information contact Tad-Mar Electrical, 2-6 Dundee Avenue, Holden Hill SA 5088, phone 08 8261 4144, email admin@tadmar.com.au, website www.tadmar.com.au

It was laser-guided machine control that ensured Gambier Earth Movers (GEM) provided pinpoint levelling when preparing the Brickworks Marketplace's base for the building's slabs, car parks and roads. Using a New Holland tractor grader with the laser-guided controller, the operator simply steered the machine, lifting and turning the cutting blade as required. "Not only does this ensure the correct levels are achieved, but it also minimises excess material being used, therefore keeping the job to budget and saving time," says GEM's Project Engineer Connor Dunne.

GEM's also working with BADGE at Mount Gambier's UniSA, completing earthworks, building pad construction, stormwater, road construction and paving. They also operate the only hotmix asphalt plant in the South East and has a sealing operation, both of which have ongoing contracts with local councils. GEM also has quarries in South Australia and Western Victoria, and a significant fleet of earthmoving plant, trucks and support machinery.

For more information contact Gambier Earth Movers Pty Ltd, 29 Avey Road, Mount Gambier SA 5290, phone 08 8725 4093, fax 08 8723 0049, email admin@gem-group.com.au, website www.gem-group.com.au.

Creating visually-inspiring spaces that encourage people to embrace the beauty of the outdoors, Dig-It Landscapes has transformed multi-million dollar streetscape and local infrastructure projects, schools, parklands and prestige commercial and multi-residential properties. Having been around for more than 25 years, Dig-It has grown from a two-man team to become one of Australia's largest landscape construction companies, with offices in QLD, SA and the ACT.

Works completed at the Brickworks Marketplace has reinforced Dig-It's reputation for excellence – completing landscaping to the car park and building surrounds, pavements, furniture and landscaping around the heritage kiln.

Construction centred on the kiln interface area and included around 550m² of exposed aggregate concrete, four low-seating walls, a large piece of play equipment with 72m² of rubber softfall and Water Sensitive Urban Design rain gardens and irrigated softscapes.

"The kiln is well-loved by locals and has long been a place to spend weekends at the markets, eateries and bars, socialising with family and friends," Dig-It Landscapes Project Manager Anthony Noble says.

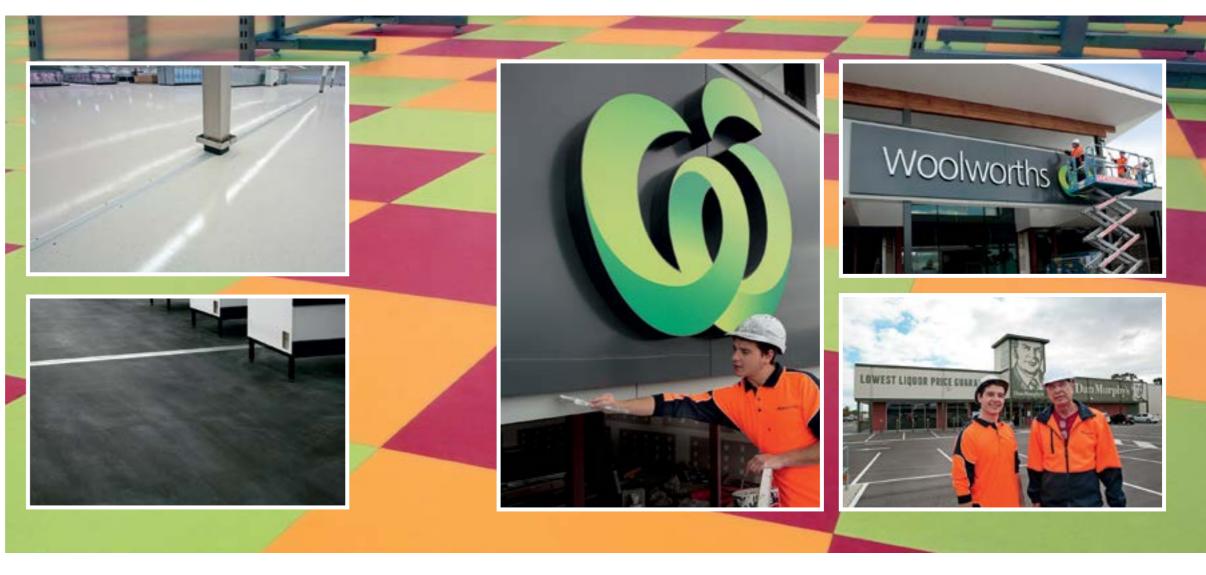
"Dig-It has transformed what was recently just a pathway into a functional and vibrant space again, enhancing the central hub and appearing as a natural extension of the new shopping centre."

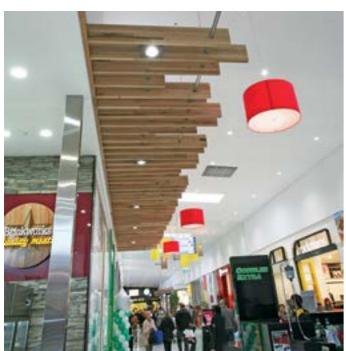
"In keeping with the history of the building and the overall feel of the heritage-listed kiln, the brick seating wall was constructed with similar-looking recycled brick, and the use of exposed aggregate concrete pavements allowed for water-themed features with two different mixes of concrete to further complement the aesthetics. The new play equipment provides a family amenity and allows parents to dine in comfortable proximity to the children's entertainment," Anthony adds.

"The project was not without its logistical challenges, however our team responded quickly and maintained open communication with other trades on site to deal with and overcome all of the challenges we experienced efficiently," Anthony says.

For more information contact Dig-It Landscapes Pty Ltd, Unit 2/52 Maria Street, Thebarton SA 5031, phone 08 8352 6589, fax 08 8354 4260, email adelaide@digit.com.au, website www.digit.com.au







Since 1978, Fab Floors Pty Ltd remains highly dedicated to providing its clients with outstanding work while exceeding expectations. Its reputation for care into the preparation of flooring (resulting in a great look and a longer-lasting floor), saw the company chosen to complete vinyl floors for Big W and Woolworths for the Brickworks Marketplace.

Fab Floors recognised that the floors would see a high amount of foot traffic and it was important they were strong and able to withstand a high-level of usage. This consideration to detail demonstrates Fab Floors' efforts to please builders' clients with its quality installations, resulting in less problems for the builder.

The company's hard-working staff are specialists in what they do. In addition to innovating ways to make a project better, the company has spent time training its staff and expense in acquiring the latest equipment. It has branches in Sydney and Arundel in QLD, and travels to remote supermarkets and retail stores. The company just finished flooring for Woolworths Broken Hill and Big W Townsville.

For more information contact Fab Floors Pty Ltd, 177 Bonds Road (corner Jindalee Place), Riverwood NSW 2210, phone 1800 FAB FLOORS, email info@fabfloors.com.au, website www.fabfloors.com.au

Having been in the painting business for around 20 years, P&L Giamarelos Pty Ltd has gained a solid reputation within the building industry. As a result, the company continues to provide their painting services on major projects across Adelaide, including the recent Brickworks Marketplace development.

Founded by Peter Giamarelos in 1995 (who originally worked as a painter for a business), P&L Giamarelos has expanded from a small company that employed two to three workers to employing a staff of ten.

Five of the company's staff worked on the Brickworks Marketplace, which involved painting the entire building, inside and out. While the job itself did require the painting of many precast walls (including one that required many colours), the works carried out by P&L were mostly straight forward and the job went smoothly.

The company is proud to be associated with BADGE, especially on the prestigious Brickworks Marketplace project. Working in the commercial, industrial and residential industries, as well as the Brickworks Marketplace, P&L has completed internal and external painting on a number of large developments.

These projects include internal and external painting for the Whyalla Hospital, which P&L recently completed (and a larger project in comparison to the Brickworks Marketplace), Stage 1 of the Sturt Living facility in Adelaide and Big W Cumberland Park.

In terms of working within the residential industry, in addition to providing painting services for residential developments, P&L Giamarelos completes ongoing interior and exterior painting on large and extensive homes, including high-end two-storey villas.

The P&L Giamarelos team is currently being kept busy working on projects across a range of industries. This includes the St Clair Apartments project in Adelaide, the Royal Flying Doctor Service base at Adelaide Airport and the new Woolworths supermarket at Playford (part of the Playford Alive shopping centre development).

For more information contact P&L Giamarelos Pty Ltd, 26 Lysle Street, Brooklyn Park SA 5032, phone 08 8352 8180, fax 08 8351 9502, email plg\_@netspace.net.au, website www.fabfloors.com.au