The WORKS

Summer Edition 2021 - 2022

McMAHON SERVICES

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Director's MESSAGE

Above: Managing Director, David McMahon and Director, Andrew McMahon

McMahon Services are proud to present our summer edition of *The Works* magazine.

After the unpredictable year the world endured last year with the pandemic, we are glad to say that for us, 2021 saw unprecedented growth. We completed over 3500 projects this year, which were successfully delivered across the country.

Armed with our positive and all-embracing work culture, we have added an additional 200 employees to our McMahon Services family over 2021, with a total now of more than 900 people across the business. Our people are central to what we do, and we pride ourselves on high staff retention and have our people to thank for our success. McMahon Services would not be where it is today if it wasn't for the hard work and dedication of our national team.

Our values stem from our beginnings as a small family business and have remained the same over the years, irrespective of our growth. We respect where we have come from and we respect all of the people who have been involved in our ongoing journey, from clients to partners, sub-contractors, suppliers and our staff.

Introduction of our MAC Leaning Academy

McMahon Services' vision is to be the most successful and respected construction services company in Australia and New Zealand.

We know that the foundation required for the realisation of this vision, is having the best people and to invest in them, and commit to their ongoing professional development.

We have developed an in-house learning academy, which will formally launch in March 2022, providing all employees access to structured training and career progression opportunities, creating a highly trained, skilled and committed workforce.

Project Success

We are currently delivering one of our largest sub-alliance contracts to date - the Port Wakefield Duplication Project Northern Works under the PW2PA Alliance. We were engaged to deliver the northern half of the project, which involved the construction of the new Copper Coast/ Augusta Highway overpass including on and off ramps, merge and acceleration lanes, a new overpass bridge structure, and construction of two new Wakefield River bridges.

We delivered the works for the Australian Bragg Centre where we developed an odour containment tent and extraction system with our consultant Robert Bird Group, to extract odorous chemicals from the site. This was the first time that both the tent and extraction system had been used on a project in South Australia, and the first time that such a highly contaminated site had been successfully completed in such a sensitive and busy CBD location.

We have also continued to strengthen our relationship with the Department for Infrastructure and Transport (DIT) in South Australia this year, delivering a number of successful projects such as the Barrier Highway Upgrade, Grand Junction Road, Hampstead Road and Briens Road Intersection Upgrade, Browns Well Highway, and the Old Murray Bridge Pier Bearing Packer Replacement.

In the last year, we have delivered $100 million dollars of Transport infrastructure works for Government, public and private clients across South Australia, New South Wales and the Northern Territory.

Safety Certainty 2.0

With safety at the forefront of what we do, and being committed to achieving a safe working environment for all our employees, where our people can grow and succeed, last year we introduced the next phase of our health and safety platform, proudly named "Safety Certainty 2.0".

Safety Certainty 2.0 is a new way of thinking about safety management. The initiative focuses on building an environment that enables positive communication and empowers critical thinking through harnessing and investing in the skills and knowledge of our people.

Developed to empower our people and the way in which they work, it provides an environment of engaged leadership in which everyone is considered equal and shares the same responsibility for ensuring safety in the workplace.

We thank our employees for their commitment to embracing the Safety Certainty 2.0 program and we look forward to the opportunity to demonstrate first-hand the improved project outcomes offered by this approach.

IT Systems

The McMahon Services operating companies has embarked on a a new course, with a mission to change the way we work, to create environments that connect our resources and to enable information collaboration across our projects and companies in a secure way.

We are on a continued journey to becoming digital leaders of our industry, and the pace of change is accelerating as we invest more in our people and technologies. We're becoming a more information orientated organisation,

focused on ensuring our people have the digital tools, skills, information and processes to succeed now and well into the future.

We want to ensure our solutions continue to offer our employees, subcontractors and clients whilst streamlining company processes, creating frictionless and enjoyable user experiences.

Intract Australia

Intract has celebrated many successes this year, including celebrating an impressive 10 years in business. After 10 years of hard work, they remain just as focused as they were a decade ago, and ready to take on new challenges as they evolve.

Their involvement on the PW2PA project where in collaboration with the PW2PA Alliance and TAFE SA developed a 14-week program open to 16 long-term unemployed Indigenous participants, at the PW2PA site, with a focus on the participants gaining skills on a live construction site and earning tickets, was a huge success.

They have also diversified their service offering, which now includes precast solutions. This new venture began with the supply of precast concrete barriers for the PW2PA project, when an opportunity in the market was identified due to a lack of local supply. They are now working with Ballestrin to deliver precast solutions to projects across South Australia.

Ballestrin

Ballestrin has continued it's strong growth this year, with a team of over 100 employees, and with a $30 million revenue for FY 20/21. Building on last year's successful growth across the nation, they have recently streamlined their three service lines – and have established and developed a professional team heading them up.

The highlight of complex concrete construction in 2021 was the extensive form, reinforcement and pour works undertaken for Osborne Naval Shipbuilding Precinct's Future Submarine Program, specifically on the Combat System Physical Integration Facility and Platform Land Based Test Facility Form.

These facilities were designed to support the diesel-powered Submarine Program and required 12,000m^3 of concrete and 1,600t of reinforcement to complete.

We are looking forward to another successful year to come, where we will continue to challenge what we can achieve, striving for continual improvement and client satisfaction.

This year would not have been possible without our tireless staff, who we thank for their dedication and hard work.

We also thank our clients for their support and trust to deliver their projects. Next year promises to bring new challenges and opportunities for our team, which we will embrace with open arms.

R.I.S.E.

THE McMAHON SERVICES WAY

We are proud of what we have achieved throughout our journey - and can proudly say we are the largest South Australian owned business in the construction and infrastructure space.

From 1990 we have grown from humble beginnings into a national business, with over 900 employees across Australia and New Zealand.

The McMahon Services business has its origins dating back to 1970 where David and Andrew's father, Glen McMahon, commenced our waste disposal, demolition and earthmoving company.

We are proud of our family heritage and still today, 51 years on, we continue to challenge ourselves to innovate and provide better solutions for our clients.

Our Mission; Lead change in construction services to deliver the best client experience, with the best people.

Our Vision; Be the most successful and respected construction services company in Australia and New Zealand.

At McMahon Services, we live our core values. There are 4 pillars to these values.

- **Reputation**
- **Integrity**
- **Safety**
- **Excellence**

Our culture is core to who we are.

Internally, we celebrate what we call the McMahon Services culture. Five key themes, the combination of which summarise who we are, what we stand for and how we act.

We understand our People are central To what we do

Our greatest asset is our people. It is through the hard work of our teams across the business that McMahon Services has continued to grow and extend the boundaries of performance. Our business is rich in tradition, with a number of second generation employees.

We are Safety focused

Our business is underpinned by a strong safety culture. Safety is intuitive in our people, we promote and empower critical thinking. Our objective is to continually improve our safety performance to ensure a zero harm environment for our works, stakeholders and the wider community.

We strive for Innovation

Innovation and surpassing industry standards is what we strive for. We approach each project with safe, cost effective and value adding solutions. McMahon Services are recognised by the industry and our peers for innovation and best practice, and we will continue to challenge everything we do.

We have an unbeatable Can-do attitude

We are determined to exceed client expectation with every project we undertake, no matter the size. We go the distance and to where our clients need us to be. We have built our business on the successful delivery of high risk, complex projects.

We respect our Family business heritage

Our family values are at the core of who we are. We respect where we have come from and all those who have shaped who we are today; from clients to partners, subcontractors, suppliers and staff.

PACKING A PUNCH FOR OLD MURRAY BRIDGE
PIER BEARING PACKER REPLACEMENT

Old Murray Bridge first opened in 1879 and is now a State Heritage structure. Due to its age, the bridge requires a high level of ongoing maintenance to ensure its serviceability for current traffic requirements.

In order to extend and maintain the longevity of the 140-year-old bridge for another 30 years, we were engaged to jack and relevel the bridge, install new grout beds, and undertake maintenance to the bridge bearings.

Eight piers (two columns, per pier) required their bearing packers to be replaced, due to pier settlement and deterioration of old timber packers. This corrected the level of the bridge deck overhead, reducing loads on the bridge structure and improved safety, longevity and user-experience of the bridge overall.

Access to the bridge deck was pivotal to the approach, and was achieved by erecting a scaffold tower at each of the eight piers for the entirety of the project duration, allowing safe access to the underside of the bridge. The towers comprised of two levels; one level to install the jacking brackets, and one above to access the bearing packers.

Constructing the eight scaffold towers, enabled multiple crews to complete preparation works ahead of each lift, minimising bridge closure time and disruptions to traffic.

Each jack lifted the overlying bridge deck and created a space between the underside of the deck and the top of the column. The project team filled this space with quick-dry cementitious grout, forming a new grout bed to correct the level of the bridge. The team worked collaboratively with the Department for Infrastructure and Transport to modify the jacking procedure allowing both columns of a pier to be jacked concurrently. This achieved a twofold outcome; minimising bridge closure times and increasing overall project productivity.

The Old Murray Bridge was closed on only eight single days for jacking works between late June and early August 2021, minimising traffic disruption. Pre-established detours allowed traffic to take alternate routes, while all other works occurred while the bridge remained open to traffic.

JACKHAMMERED AND REPLACED 64 BRIDGE HOLD BOLTS WHILE THE BRIDGE WAS OPEN TO TRAFFIC

DRILLED & TAPPED 1408 HOLES IN THE EXISTING 140-YEAR-OLD CAST PILES

EACH 240T SECTION OF BRIDGE WAS LIFTED MANUALLY WITH HYDRAULIC HAND PUMPS

Community and Stakeholder Engagement

Stakeholder and community engagement is pivotal to the success of many of the projects we undertake, and this project was no exception.

We liaised regularly with the client, and collaborated on weekly meetings with them. We developed a Community and Stakeholder Strategy with the client which assisted in the communications surrounding the project and upcoming works.

With Old Murray Bridge being the main entrance point into Murray Bridge from Adelaide, traffic management and communication around detours was fundamental. Letter drops to surrounding businesses and residents, message boards and an on-site traffic management team were part of the communication strategy.

Throughout this project we also took on lessons learned and community feedback during each pier-raising shutdown, improving our communication and methods for subsequent shutdown periods.

PARTNERING FOR SUCCESS

WELCOMING THE NEXT GENERATION INTO THE CONSTRUCTION INDUSTRY

John Pirie Secondary School, located in Port Pirie, SA, have a progressive approach to teaching and learning and pride themselves on bringing the community together through education and arts.

In 2019, the Department of Education sought to upgrade teaching facilities at the school, and we were engaged to undertake the construction of two new classroom buildings, providing flexible learning spaces and teacher preparation, demolition of an existing transportable building, extension of the existing school hall and renovations throughout, providing an improved inclusive education unit location.

This project was multi-disciplinary, and encompassed personnel from our Adelaide, and local Port Pirie branch, as well as sister companies for the roofing, cladding, and concreting.

This project involved a great deal of stakeholder and community engagement, as we wanted to ensure that the local community, school students, and local youth and businesses were included throughout the project.

Student Industry Immersion Program

We teamed up the Master Builders Association of South Australia, Carey Training and the Department of Education to facilitate a construction workshop as part of the Student Immersion Program.

The workshop involved students from the John Pirie Secondary School, whom were interested in a potential career in the construction industry. The one-day workshop featured various presentations around different careers within the industry, and the numerous pathways into it.

The day was well received from the school and the 140 students that attended. The students were engaged and asked various questions about the industry, with everything from keen Plumbers, Electricians, Carpenters to Engineers and Architects.

The day concluded with an escorted tour through the recently completed Building A to showcase how a project develops from a concept to a physical structure, highlighting all the phases, stages and industry professionals along the way.

To further demonstrate our commitment to providing training and pathways in the construction industry, we targeted a student group from years 10,11 and 12, of which 14 students were selected from the information session held. From here the students prepared a resume and applied for a position as a mock scenario, sat an interview with student coordinators and were accepted for a pathways position.

The successful students were inducted into the project site, presented with a full McMahon Services PPE package and undertook mock SWMS for various tasks/ trades. They were all provided with a hands-on approach on a live project site, under the guidance of the respective trade they wished to pursue. From time to time their respective trade was changed to gain exposure to all facets of a live construction site.

Our objective was to engage the students in the redevelopment works and the general construction industry, by adopting a hands-on approach, with the students undertaking their white card training, inductions into the work site, and mock document reviews.

Apprentice Onboarding

Following from the extremely successful and well received Immersion Program, McMahon Services' local Port Pirie branch has been successful in onboarding two Immersion Program students with a view to start a part time school-based apprenticeship.

Jeramy was one of the participants in the program, and was successful in being onboarded with McMahon Services for an Apprenticeship in the coming months.

Jeramy has shown incredible determination throughout the program, and has been eager and willing to learn from the team on all facets of construction. He has been a great role model to others in the program, and fellow students at the school.

Did you know?

- We provided materials removed during the demolition stage to the school's trade program to enable them to utilise and recycle various hardwood timbers and materials to make furniture etc to fit out a social / workshop building onsite.
- 90% of the labour and trades were sourced from the local region, supporting and engaging the local economy and community.
- The project was delivered with two critical work fronts with 70+ sub-contractors onsite daily.

We sat down with Jeramy to learn about what being a part of this program meant to him, here's what he had to say;

What did you think of the Immersion Program?

I wasn't sure what to expect but I enjoyed it, and it was great to get out of the class room and learn something different.

What have you learned from the program?

Work ethic, like getting up early in the morning, also how to use certain tools that I had never used before.

What do you enjoy most about the construction industry?

Not being stuck inside all day and being able to learn with my hands as well as my head.

What do you hope to achieve in the construction industry?

Stable income, and to become a good tradesman and see how far I can grow.

What made you want to work for McMahon Services?

In a small country town, it's always been a goal to work alongside a larger company like McMahon Services, who have a great reputation.

We look forward to working with Jeramy and assisting him in his future career in the construction industry.

Community Engagement / Chamber of Commerce Business Seminar

On the 12th of August McMahon Services were invited to take part in the local Chamber of Commerce business seminar, with a focus on local engagement for youth and students. The night was attended by approximately 100 people from various businesses within Port Pirie who each got to share and listen to current programs taking place within the community.

McMahon Services presented the current works that were taking place onsite at the school, highlighting the implementation of the Student Immersion Program and how that has resulted in current and future employment of locals within the business.

Opportunities like the Immersion Program are great for young students to be given and shown the opportunities that are available to them, and that through their hard work and determination comes reward with a meaningful career in an industry sector that provides endless growth.

We are excited and committed to showcasing the invaluable construction industry, and inspiring the next generation of workers.

HMAS Success

Carrickalinga Wave Generator

HMAS Adelaide

Cape Jervis

Birkenhead Bridge

McMAHON SERVICES BUILDS MARINE AND BRIDGE CAPACITY WITH STRATEGIC PARTNERSHIPS

Working in and around the ocean and rivers is pretty well business as usual for McMahon Services. Both Directors David and Andrew McMahon are passionate about boating, fishing and the marine environment and this passion has proven to be an advantage when considering new and exciting marine opportunities.

We have a robust risk management system, which has meant that we are increasingly being asked to consider marine projects, which pose more of an extensive risk profile, than those on land, especially when it relates to weather and the environment.

Due to our capabilities, resources and extensive experience, over the years we have found ourselves being a preferred contractor when it comes to the decommissioning and sinking of ex-service vessels as dive sites, and other complex projects.

In order to continue to build our capabilities in the marine sector, we took the next step and obtained a Pre-Qualification with Department of Infrastructure and Transport (DIT) for Marine Structures, the approval and award of this enabling us to tender for more marine projects with varying values and complexities. We were awarded the highest level of prequalification – M2.

Further strengthening our presence in the marine sector, we sought out to collaborate with a competent partner to assist with delivering these near coastal projects. We were looking for experience, capacity and flexibility. These traits and capabilities were well met by the team at Davey Hydraulics.

Ken Davey runs Davey Hydraulics along with his brother Neil, and is based out of Port Victoria. Since working with McMahon Services, Ken has spent significant investment on his fleet and systems development, and McMahon Services have received full marine support on our projects with the help of the Davey Hydraulics team.

Davey Hydraulics and McMahon Services have worked together to successfully deliver Klein Point Jetty Refurbishment, Cape Jarvis and Penneshaw Emergency Repairs and Jetty Upgrades, Carrickalinga Wave Generator removal, Birkenhead Bridge Deck Replacement, Wardang Island Asbestos Removal and Village improvement including a new accommodation centre and Jetty.

Our Approach

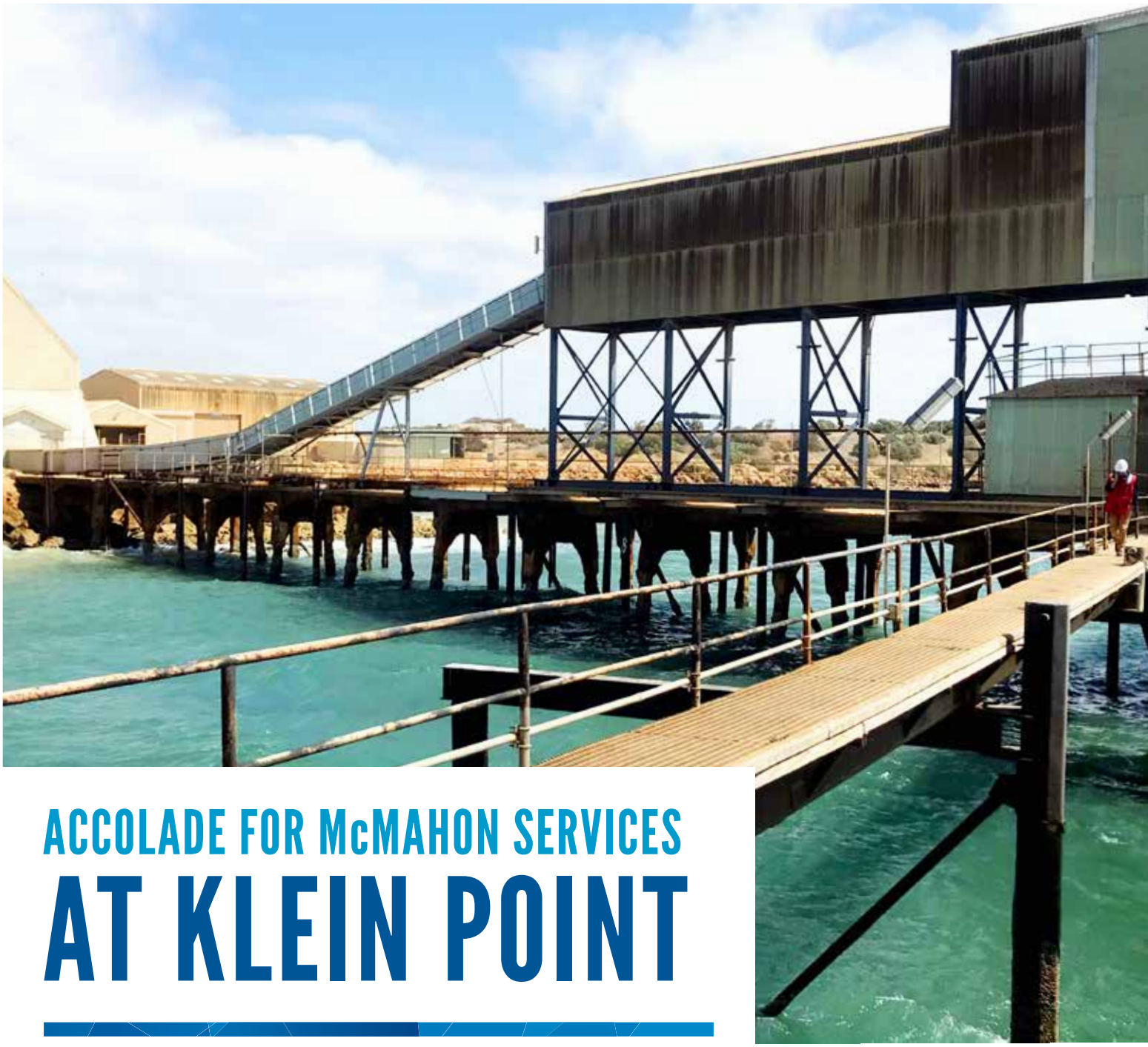
When looking at a scope for a marine project, one of the first things we do is ask – “How would we do this on land?”, “What is best practice?”, and “How do we terrestrialise the job?”.

This is where our Events and Scaffolding team step in. Our Events team can design and construct underslung scaffold systems which have been used on the Birkenhead Bridge and Cape Jervis and Penneshaw, scaffold towers which we used on the Old Murray Bridge Jacking and Pile Repair, cantilevered scaffold which we used in the Port River to cut a 1.8m diameter hole through the 150yr old wharf wall, and at Australian Naval Institute where we repaired the loading platform and fitted jet filters to the sheet pile wall to protect from future subsidence.

Our scaffold team is the secret to safely encapsulating environmental risk and providing safe access and egress as well as a working platform on these projects.

Also up our sleeve we have our in-house boiler makers and temporary works Engineers. This team ensure our staff are kept safe when working below the water line by building support structures, bracing and wave protection structures. This team comes up with innovative solutions to ensure the work can progress, and progress safely.

Over the last 10 years we have strategically grown our marine capabilities, which has meant an investment in people, plant, equipment and facilities. We have proudly delivered over $100m of marine infrastructure works in recent years, and we are excited about the opportunities that have been afforded to us, and we are committed to delivering certainty in the marine sector, in partnership with our clients.



ACCOLADE FOR McMAHON SERVICES

AT KLEIN POINT

Adelaide Brighton Cement operates a limestone quarry at Klein Point, situated approximately 7km south of Stansbury on the Yorke Peninsula, South Australia. The mine produces crushed lime each year, in which they transport 60km across St Vincent Gulf to Adelaide on the *Accolade II*, a bulk carrier with a capacity of 7500t.

The conveyor that transports the crushed lime from the mine and stacks it onto the *Accolade II* is situated on a Flinders Ports owned and operated jetty at Klein Point.

The original jetty, built in circa 1920, was the first reinforced concrete piled jetty in South Australia and since then has had various upgrades and extensions. In 2001, a new structural steel jetty was constructed, which straddled parts of the original concrete structure that remained in place, making the concrete jetty redundant.

To maintain its long-term operational capability, the structural steel jetty required significant refurbishment as well as removal of the significantly dilapidated original concrete jetty structure. Due to the importance of the jetty to Adelaide Brighton's continued business operations, the repair and replacement works were required to be undertaken within a fixed shutdown window while the *Accolade II* underwent a major offsite maintenance program.

Through a six-month collaborative Early Contractor Involvement (ECI) Design and Construct approach with our maritime engineers, asset owner Flinders Ports and all key project stakeholders, we developed a detailed design and method to deliver the refurbishment program and extend the operational life of the jetty.

Works commenced on the Berthing Line which comprised of repairs and full replacement of various structural components on each Dolphin structures, we also repaired all fender systems including chains and wear strips which had to be completed within the tight outage window before the *Accolade II* returned to berth. With the structures sitting around 90m off-shore, works had to be completed from an underslung scaffold designed and installed by our McMahon Services Events and Scaffolding team.

Along with providing safe access, the scaffold was also used as an encapsulation system which was used to capture debris created during the remedial blasting and painting.

APPROXIMATELY TWO MILLION TONNES OF LIMESTONE ARE SHIPPED ACROSS GULF ST VINCENT EACH YEAR.

OVER 14,000 WORK HOURS WITH A TEAM OF 20 AT PEAK

The Berthing Line required access at all times, and the only existing access needed to be replaced as part of the works. To overcome this, we provided and alternate temporary scaffold walkway, approximately 90 metres long.

The second major component of repair works was the refurbishment of the Approach Jetty. These works included full replacement of headstocks and walkways, remedial blast and paint construction of a new abutment suspension system and removal of the original concrete jetty.

The works were significantly complicated by the heavily deteriorated concrete structure that remained under the steel jetty. If the concrete failed and collapsed, it had the potential to bring down the Approach Jetty and the Adelaide Brighton Cement conveyor belt, stacker and associated infrastructure. To achieve the safe removal of the concrete jetty, a temporary steel catch deck was fabricated and installed beneath the structure. Requiring detailed site measurement and precise fabrication, the underslung catch-deck provided a safe working platform and could be used to capture all demolition debris and protect the marine environment throughout the project.

A key innovation was the design and fabrication of a purpose-built modular jack-up barge constructed specifically for the Project. The jack-up barge was used to install 20m permanent and temporary construction piles driven to design embedment that provided improved structural integrity throughout the works. Combining with McMahon Services 250t on-shore Crawler Crane, the jack-up barge was also used to transfer waste materials to shore and minimised the impact of both weather and wave action during the Project.

Working within a highly constrained operation site and within strict outage windows, the collaborative contract between McMahon Services and Flinders Ports delivered a complex project with no injury, no environmental harm and no impact to continued business operations.

A unique, challenging and highly rewarding project; this is certainly one we are proud to showcase.

APPETITE FOR GROWTH AND INNOVATION

BUILDING OUR ROAD AND INFRASTRUCTURE DELIVERY

In the last five years McMahon Services has had a concerted focus on growing its road and associated infrastructure construction teams.

Our Senior Governance and Senior delivery teams have a combined 286 years experience in the infrastructure sector, and expanding on the knowledge and experience of our personnel, we now have seven dedicated road and bridge teams - delivering regional roadworks, detailed metropolitan roadworks including complex intersection upgrades, utilities service installation and relocation, bridge construction and heritage restoration, marine works, and design and construction of major infrastructure.

Having achieved an upgraded prequalification with the national regulator for road works and infrastructure, we are now qualified to build the highest complexity of roads and bridges to the value of $100m per project.

Throughout 2020/2021, our portfolio for this work has grown substantially. We have an established, specialist team delivering these works, and have continued to build partnerships with our stakeholders and clients alike.

Regional Roadworks

Starting with the success of the $12m Penola Bypass and the Karoonda Highway Shoulder widening, McMahon Services invested heavily in our internal capability and plant.

In order to maximise production, we invested in a Wheeler Shoulder Paver directly from Iowa in the United States. When our new toy arrived, our in-house fabrication team designed and constructed a cabin and large windscreens on the paver to protect the Operator from our harsh climate.

Our Shoulder Paver was first unleashed on the Browns Well Highway where this addition meant we were able to complete the works in accordance with the original program despite significant weather delays and the onset of COVID-19 restrictions.

Building our Team

The old hands in our regional road building team have been Jim Radford and Wayne Abbatista. These exceptional Supervisors have taken on the responsibility of training our operational teams to deliver the high level of quality and productivity we are renowned for. We have cycled a number of experienced Engineers and Supervisors through our regional projects to ensure this important legacy of road building is passed on.

To further enhance our teams, McMahon Services have invested heavily in pavement construction workshops which have 100% attendance by our senior management, project management and supervisory crews. These developmental workshops run by Pavement Asset Services (PAS) are great opportunities for our staff to run through successes and improvements in road building.

McMahon Services drew deep on our regional road building resources in May 2021 when we committed to the Department of Infrastructure that we could rebuild a 4km section of National Highway 1 in eight weeks, in early winter. Together with our asphalt contracting partner on this project we carefully planned every last detail of the works, ensured we had contingencies for contingencies, and eight weeks later the works were complete and the traffic continued to flow.

Our Senior Project Manager responsible, Luke Luey, commented

"The success of our project was driven by the team's never say die approach. We met daily with our suppliers, reviewed the weather every night and worked out the exact battery limits for construction on each following day. The meticulous planning and built-in redundancies meant when we faced a problem, like issues with the onsite batching plant we immediately flipped to our backup plan and still met the day's planned production. I was so proud of the team and what they delivered working 24/7 for eight weeks."

We have also delivered large projects on the Barrier Highway, Browns Well Highway, Naracoorte Roundabout, Sturt Highway intersection and Karoonda Highway.

Although we self-deliver the majority of our work, we are passionate about developing our regional delivery partners and the supply chain. On the Penola Bypass we invested over $400,000 in the local supply chain outside of direct construction delivery, benefitting the local economy.

The complexities of the projects we are delivering are growing, and we are equipped more than ever to deliver them.

Grand Junction Road - Delivery of Innovation

Armed with our knowledge and experience of the challenges of working on main roads and intersections, on the Grand Junction Road and Hampstead Road intersection upgrade we sought to provide innovative solutions that benefitted our client.

We engaged SAGE – who have created a real-time traffic monitoring system. The system is essentially made up of a group of sensors that are network integrated, providing real-time current traffic backlog monitoring. We used the information to plan for works to be undertaken at lower traffic intensity times, and it gave us the ability to make real-time adjustments to traffic management, minimising queuing and traffic delays where required.

The system produced the below benefits;

- **Reduce Road User Impact:** Predicted travel delays on the network and optimised the construction schedule to ensure minimal delays to road users
- **Receive Incident Alarms:** Provided automatic continuous monitoring of traffic delays, with immediate notifications to relevant parties if significant delays were detected
- **Understand Real-Time Delays:** Analysed in real-time, at-a-glance views of delay performance along the routes of interest, with clear colour-coded map and table displays
- **Analyse Traffic Patterns:** Allowed retrieval and comparison of historical travel time data to examine traffic patterns and events retrospectively.

By using the system, we were able to monitor traffic in real-time, and minimise traffic delays that are often associated with major intersection upgrades.

LET THE CELEBRATIONS CONTINUE...
THE FAMILY FUN DAY RETURNS

In 2020, McMahon Services proudly celebrated 30 years of operations. To mark this special occasion, we held a free family fun day for our employees and their families, a toast to them for helping us get where we are today!

The event was so well received and so successful, that we decided to turn it into an annual event.

This year was bigger, and better. We introduced new rides, new local food suppliers, a petting zoo that was a hit with everyone, free company branded t-shirts for the kids, and we even had a caricaturist.

Once again, staff were encouraged to bring their family – the people that support them in fulfilling their roles to the fullest each and every day. After all, the Family Fun Day is all about them, and us showing our true appreciation for their support.

The key strength of the business and the reason for the success of the company is the quality and dedication of our people, as well as the great culture and attitude fostered in our personnel and teams. We are proud to say that many of our staff are second generation McMahon Services employees.

2021 also marked a year for significant tenure milestones. To celebrate these, we decided to now present these milestones at the family day. What better way to recognise and celebrate employees than when they are with their family.

We want to take this opportunity to thank the following employees for their years and dedication to the company, your input and hard work does not go unnoticed.

Some of the 10-Year Club entrants for 2021

Two of the three 20-Year Club entrants for 2020

We had three new entrants into the 20 Year Tenure Club, and ten new entrants into the Ten-Year tenure Club in 2021.

20 Years

- Michael Zilm
- Brenton Vogelsang
- Bradley Park

10 Years

- Amy Jones
- Matt Ormsby
- Willie Frith
- Rowland Stone
- Richard London
- Duro Runjo
- Nigel Sutton
- Shane Apponyi
- Michael Drosd
- Rhys Harrison
- Adam Medlen
- Robert East
- Rhys Parasiers
- Leigh East
- Curt Holmes
- Adam Wastell
- John Ambler

Michal Zilm
20 Years

Michael commenced with McMahon Services in 2001 as a Labourer. Since then, he has held numerous roles, progressing to his current role of Site Manager, in our Demolition Business Unit. With extensive knowledge of our company processes and procedures, and implementing complex demolition methodologies, Michael is an integral part of the team.

We asked Michael what he enjoys most about working at McMahon Services;

"I enjoy the fact that I have started from the bottom, working my way up from Labourer completing small machine works to a high risk multi story mechanical demolition Operator, Leading Hand, Supervisor and now Site Manager.

I have been able to further myself in my career here, and I enjoy the fact I have the ability to mentor new and upcoming colleagues in all facets of demolition the way I was mentored. I have been provided the opportunities to further my career with courses being provided to me along the way, but a lot has been learnt from site and others above me at the time too which I can't thank enough.

I have much respect and appreciation for David and Andrew McMahon for their belief in me allowing me to grow in their business in my 20 years' service and let's hope I can make it another 20 years!"

A CUT ABOVE THE REST.

McMAHON SERVICES INTRODUCES MAC LEARNING ACADEMY

McMahon Services' vision is to be the most successful and respected construction services company in Australia and New Zealand.

We know that the foundation required for the realisation of this vision, is having the best people, to invest in them, and commit to their ongoing professional development.

Our mantra has always been that 'our people are central to what we do', representing our biggest asset, and to demonstrate our support and commitment to our people, we have launched our MAC Learning Academy.

Our in-house Academy provides all employees access to structured training and career progression opportunities, creating a highly trained, skilled and committed workforce.

MAC Learning Academy will provide our people the opportunity to enhance their skills via e-learning modules or participate in specific face-to-face training on a variety of critical business capabilities including:

- Business Management Systems and the implementation of Company Policy
- Workplace Health and Safety
- Environmental Protection and Quality Control
- Project Management
- Legal and Commercial
- Human Resources and Industrial Relations
- Information and Communications Technology and Cyber Security.

This bold initiative will see McMahon Services jump light years ahead offering a comprehensive suite of in-house and external training.

Within the MAC Learning Academy sits our Rise Initiatives, named after our core values, and encompasses three program levels.

Achieve

Our foundation modules that provide critical training in areas of workplace health and safety, environmental protection and quality control in line with our business management systems and Safety Certainty 2.0 principles.

Empower

Modules designed to provide a higher level of understanding in mission critical areas of Project Management, Legal and Commercial, Human Resources and Information and Communication Technology. Providing our people with the skills required to be confident in their role and the power to excel.

Influence

The highest level of training designed to instil effective leadership behaviours and inspire continued professional development. Covering topics such as change management, effective communication, emotional intelligence and positive leadership.

Led by our newly appointed Learning and Development Manager, Sarah Townsend, MAC Learning Academy will be supported by Learning and Development Specialist Rose Tabeni, a new Learning Management System and our state-of-the-art in-house training facility which is able to accommodate up to 40 students.

As well as underpinning our position as an employer of choice, this initiative will see all employees benefit from enhanced training and career progression opportunities, maintaining our low staff turnover rates.

In addition, our clients will benefit from the exceptional risk management that comes from having a highly trained, skilled and committed workforce providing the best client experience.

MAC
LEARNING ACADEMY

SAFETY CERTAINTY 2.0

McMahon Services is committed to achieving a safe working environment for all our employees, where our people can grow and succeed.

In keeping with this commitment, last year McMahon Services introduced the next phase of our health and safety platform, proudly named "Safety Certainty 2.0".

Safety Certainty 2.0 is a new way of thinking about safety management. The initiative focuses on building an environment that enables positive communication and empowers critical thinking through harnessing and investing in the skills and knowledge of our people.

Developed to empower our people in the way in which they work, it provides an environment of engaged leadership in which everyone is considered equal and share the same responsibility for ensuring safety in the workplace.

It focuses on Serious Injury and Fatality Risk, what we call a SIFER. A framework that helps our people to recognise, understand and manage risks that can result in serious harm, and provides streamlined processes for managing change, allowing all of our people to challenge our systems in order to improve safety.

Objectives and Fundamentals of Safety Certainty 2.0

Simple and Supportive
Providing a WHSEQ framework that is informative and reliable

- Empowers critical thinking to encourage change
- Provides easy to use and accessible tools to enable personnel and their workforce to make change
- Makes our workplace safety frameworks easier to follow and adopt.

Positive Communication
What we do well and ensure our people are central in decision making.

- Sharing experiences and learnings (transparency and communication)
- Positive communication
- Fostering participation in work health safety
- Acknowledging, promoting and recognising what we do well
- Continual and streamlined improvements

Roll out of Safety Certainty 2.0 was undertaken in three phases commencing in January 2021 with phase three implementation completed in September.

Key initiatives implemented within the program include:

Serious Injury Fatality Environmental Risk (SIFER) Audits used to identify, verify and validate

Example of SIFER posters utilised on project sites where the risks are applicable to that project.

serious risks are being successfully managed on project sites in line with the Serious Injury, Fatality and Environmental Risk Manual.

After Action Reviews that allow work teams to reflect on a recent task to gain a greater understanding of what happened and why, providing individuals and team members on-the-spot learnings.

Safe Act Observations to identify and positively reinforce correct work when being performed, suggesting corrective actions to eliminate root causes that lead to undesirable behaviours and conditions.

Project Health Checks that identify potential project threats and corrective actions for improvements, ensuring our WHSEQ System is consistently applied at a project level and that all personnel on the project are aware of, and understand the system.

Site Improvement Plans to involve workers with the identification and quick resolution of potential safety threats and communication of opportunities that support continual improvement.

Site Management Training for site workers in the use of key management systems tools which condition their workmates to identify hazards and, manage risks including how to undertake Safe Act Observations, risk identification, JSEA and SWMS development and incident reporting.

Leadership and Communication Meetings which encourage management and supervisory personnel to meet on a regular basis to communicate project and operational issues and expectations.

Measuring the success of the program is achieved through a balanced scorecard approach. The scorecard translates the programs strategic goals into a set of progressive performance objectives that are measured, monitored and adjusted in order to achieve ongoing improvement. Targeting operational elements and setting meaningful KPIs, the result generates motivation to strive for higher levels of performance.

We have developed the Safety Certainty 2.0 Program to provide systems and tools to help support our people in making decisions because ultimately, those decisions are made in the field. The program has been received exceptionally well by our teams and the benefits of the increased focus on training and needs analysis, decluttering of safety systems and forms to remove unnecessary paperwork and the improved accessibility are already being felt across the business.

We thank our employees for their commitment to embracing the Safety Certainty 2.0 program and we look forward to the opportunity to demonstrate first-hand the improved project outcomes offered by this approach.

THE PROJECT EMPLOYED TWO INDIGENOUS WORKERS ACHIEVING A 7% INDIGENOUS ENGAGEMENT RATE.

OVER 90% OF THE SUBCONTRACTORS AND SUPPLIERS FOR THE PROJECT WERE LOCAL ENGAGEMENTS.

WHYALLA AIRPORT READY FOR TAKE OFF

In 2020 it was announced that the Whyalla Airport would undergo a highly anticipated upgrade of their facilities, driven by legislative changes for security at regional airports, the need for refurbishment of the existing facilities, and a substantial upgrade to the runway to accommodate increased safety for emergency personnel. The changes delivering a modern, future-proofed facility, well placed to service Whyalla and the region.

We were engaged as Head Contractor to manage the overall construction of the project, and incorporated the use of companies within the McMahon Services Group, with a heavy focus on the use of local subcontractors.

Impressively completing two weeks ahead of schedule, the scope of works included extension to the existing Whyalla Airport building by more than double, to over 1000m^2, which included new departure and baggage areas, security screening, cafe, external hardstand areas and services upgrades.

Having grown from a small business ourselves we understand the importance of local industry participation and the added socio-economic value to be gained from a project delivery model that maximises input from local Small to Medium Size Enterprises, which was a strong focus for us on this project.

"The construction phase of this project has used local steel and local labour and will result in ongoing local employment opportunities. I'd like to thank McMahon Services and the Federal Government for helping make this a reality, while ensuring maximum benefits for the local economy."

MAYOR CLARE MCLAUGHLIN

"McMahon Services personnel were very professional and easy to work with, they were prompt with responses, and demonstrated a high level of safety throughout the project. The communication was open and transparent and the site was always clean, with any issues being dealt with immediately. We applaud the highly professional and efficient team"

ROBYN NOTTLE, MANAGER, CAPITAL PROJECT DELIVERY WHYALLA COUNCIL

LAST BREW | THE TRANSFORMATION OF 107 PORT ROAD


Relocation of the SANFL Grand Final winner colours from the project site to The Brickworks.

Yet another iconic project McMahon Services are proud to be a part of.

In early 2021, McMahon Services were appointed as Program Manager for the rehabilitation and transformation of the South Australian West End Brewery site, working under an Alliance contract, in partnership with Lion to manage a program of renewal for the site. The program's objective is to safely and sustainably repurpose the site, preparing it for what will be one of South Australia's most important inner-city redevelopments.

The Program Management Team commenced investigation activities in March 2021, with the team undertaking a series of asset, services, and environmental technical studies. Works on site commenced in July of 2021 immediately following the conclusion of brewing operations.

In consultation with Lion and local planning specialists, Ekstics, the team have worked closely with the City of West Torrens to progress the necessary development applications required for the project. This has included multiple investigations such as structural integrity assessments, and detailed heritage impact statements to ensure items of historical significance are protected throughout the works.

Since commencement on the site, the project team have completed a number of important activities including a detailed Demolition/ Refurbishment Hazardous Material Risk Assessment. Following the assessment, McMahon Services have now commenced removal of identified hazardous building materials in order to prepare the structures for safe demolition. We have also completed a detailed environmental investigation of the site which involved drilling 70 ground water and soil vapour wells across the site. The results of the investigation are now being used to inform remediation options and future development possibilities for the site.

McMahon Services and Lion are currently completing a range of decommissioning and decontamination activities across the site including draining and cleaning of former brewing process infrastructure, and disconnection of utility services.

A process of asset removal is also underway to recover equipment and materials that can be re-used and re-proposed at other facilities. Following this process, McMahon Services will look to commence demolition activities, likely to start in late October.

Effective management of key stakeholders involved with this project is vital to its success. We have been collaboratively working with Lion to ensure the successful delivery of all external communications regarding the project works.

Our communication strategy includes techniques and tools facilitating genuine two-way dialogue with stakeholders, and the ability to respond to community and stakeholder issues and opportunities as they arise.

Proactive stakeholder engagement, and early and effective communication ensures that community members and stakeholders have a variety of opportunities to learn about the Project, provide their input, and be advised of plans and activities that may affect them.

EXCELLENCE AT LOT FOURTEEN
MASTER BUILDERS AWARDS 2021

We were extremely excited to be presented with not one, but two awards at the Master Builders SA Building Excellence Awards in August. We took out the awards for Structure/ Envelope - Commercial, and impressively Master Builder of the Year - Specialist Contractor.

Both of these awards were for our works undertaken at Lot Fourteen.

It was noted by the judges that we performed extremely well across all vital contractual elements for the project, with a high standard of project quality and delivery, sound quality assurance and safety systems, as well as terrific relationships with all stakeholders involved.

The judges were also impressed by our consideration of environmental sensitivities and hazardous materials and our ability to adhere to tight contractual time frames, stringent environmental controls, as well as managing community and stakeholder engagement.

It was over four years ago that McMahon Services commenced Stage One onsite – starting the incredible journey of being an integral part of the redevelopment of the former Royal Adelaide Hospital site, into a global innovation precinct, and one of the major economic development opportunities for South Australia.

Since then, we have completed 90 percent of the demolition works, with a full strip out of all heritage buildings along North Terrace, removal of over 3205 tonnes of construction and demolition materials, and 88,000 tonnes of concrete/ masonry.

Our project team have worked tirelessly over the last four years and have enjoyed seeing the project come to fruition while delivering exceptional results and achieving best for project, and precinct outcomes.

Also, great work to our civil team who were nominated for their works at Hamilton Hill, and our very own James Wilson (Manager – Building and Construction) for Young Builder of Year.

James Wilson, nominated for Young Builder of the Year

It is humbling to be recognised by our peers in the construction industry, congratulations to everyone who had a part in the successful delivery of the projects!

SEAMLESS DELIVERY FOR SPOTLESS

McMahon Services have been a trusted Spotless Group facilities management subcontractor for over 15 years.

The annual 'Spotless FM Services Subcontractor Awards' are presented to key partners for Spotless in delivering facility management services, whilst contributing to safety, quality and delivery of these services.

In March 2021, the trusted partner certificates were presented to 49 subcontractors that had reached a minimum Subcontractor Performance Rating of 95% for a six-month period during the 2019/ 2020 financial year.

McMahon Services humbly received an award for our works at the Adelaide TAFE City Campus Community Services Modifications project.

We were awarded the refurbishment works which were required to be completed in a compressed timeframe, with a non-negotiable seven-week program. Due to the fact that the Port Adelaide TAFE campus was closing, thus meaning the new Adelaide facilities had to be fully operational for the start of the new year term.

We programmed the extensive fit out with meticulous coordination of multiple trades, working seven days a week, ten hours a day – all while the TAFE College was fully operational. Trades included ceilings, data and communications, electrical works, fire services, fit-out works, flooring, hydraulic works, mechanical works, painting, and security works.

The Premier officially opened the new facilities which included a new 20 bed nursing training facility, new administration wing for 30 TAFE staff, new hair and beauty training salon, new retail fashion area and a new ten bed complementary health centre.

With over 7000 man-hours the site team worked within tight time constraints around the holiday period to ensure the project was completed on time and within budget.

Not only was the refurbishment completed in an astonishing seven weeks, the client was extremely happy with the quality and seamless delivery.

Congratulations to our project team.

SPOTLIGHT ON McMAHON SERVICES AND INTRACT
CCF SA INDUSTRY AND TRAINING AWARDS

The CCF SA annual Industry and Training Awards recognise and celebrate the achievements, showcase the calibre of personnel, their organisations, along with the outstanding and innovative projects that are completed in South Australia, in the construction industry.

This year, McMahon Services and Intract Australia (Intract) were lucky enough to be represented by some strong members of our team at the awards.

We would like to take this opportunity to congratulate all of the nominees and winners from the night, but a special mention to our very own Tom Rowe (McMahon Services) for taking home 'Supervisor of the Year', and Tyson Webb (Intract) for winning 'Indigenous trainee of the Year'.

Both Tom and Tyson have shown tremendous leadership and have excelled in mentoring members of the team, and were nominated by many of their peers for their awards.

Also, a big congratulations to Kate Traeger (McMahon Services) on being nominated for the 'Women in Civil' award. Kate is an active member in the civil construction industry, and is Chairperson on the CCF Women in Civil Committee, she shows great passion in providing opportunities for women in the civil industry, and for that, we thank her.

Kate Traeger, Craig Bond, Bel Green and Charles Hatcher at the awards.

It's important to recognise the people that inspire, innovate and bring positivity to their workplace and the industry in general. We are so proud of the team; you are all a great representation of the core values of McMahon Services and Intract.

Goodluck to the nominees for 2021, with the awards being held after this magazine goes to print, in November.

"Winning the award of Supervisor of the Year, being nominated by my peers, and recognised in the industry is an incredible achievement. I enjoy mentoring, training and upskilling members of the team, so it's nice to be awarded for it."

TOM ROWE, SUPERVISOR

BRIDGE TO SUCCESS

Congratulations to our team involved in the Birkenhead Bridge Deck Replacement project. On Friday 17th September, they took out the award for 'Project Value $2m - $5m' in the annual CCF Earth Awards.

Opening in 1940, the Birkenhead Bridge was impressively Australia's first double bascule bridge, totalling approximately 260m in length. The complex project, which was featured in last year's magazine, involved the replacement of the existing timber roadway deck, with a Fibre Reinforced Polymer deck, and the eastern timber footpath with an aluminium one. The essential works ensuring the bridge's long-term structural integrity and safety, extending the life expectancy by 50 years.

As the project occurred over the Port River, which is also a dolphin sanctuary, extreme care and methods were required to ensure work was undertaken safely, protecting the marine environment and that further protective measures were implemented to ensure no debris or waste entered the water system.

The planning, management and detailed shutdown approach was superior on this project, and the team has now been successfully implementing it on other marine construction projects across the wider company.

THE AUSTRALIAN BRAGG CENTRE

INNOVATION AND COLLABORATION FOR SUCCESSFUL PROJECT DELIVERY

McMahon Services are always looking to deliver certainty for our clients. We strive to look for, and provide innovative, cost-effective solutions on each and every project, and we have a strong, proven track record of doing so. The Australian Bragg Centre (formerly the South Australian Health and Medical Research Institute II (SAHMRI II)) was no exception.

The Centre is a new $500 million clinical and research facility in Adelaide's CBD, and when complete will include a proton therapy unit, the first in Australia, and will have the capability to deliver the most technologically advanced precision radiation therapy ever seen in the Southern Hemisphere.

Commercial & General (Project Developer) in partnership with SAHMRI, elected to engage McMahon Services under an Early Contractor Engagement (ECI) arrangement to undertake additional site investigation to better understand the key project risks around contamination, services and construction methodology. This early engagement allowed Commercial & General (C&G) to procure a facility builder with confidence, and allowed us to provide a lump-sum price for the remediation works.

Through the early works investigation, tender development and construction delivery phases, McMahon Services worked collaboratively with all stakeholders including the EPA, C&G, SAHMRI, Renewal SA, our environmental consultant, DBD Environmental, and the Head Contractor LendLease.

This high-profile project involved the enablement works for the site, including demolition of existing structures, relocation of critical utility services, bulk earthworks and remediation of the highly contaminated site soil.

The site is an area of long-standing historical contamination, backdating from when it was a rail yard and coal storage depot in the 1900's. It is in close proximity to the Torrens River, the Royal Adelaide Hospital, and is surrounded by established commercial buildings including SAHMRI, the new Adelaide University Medical School, and University SA and the Riviera Hotel.

Scope of Work

McMahon Services scope of works was split into two stages; pre-construction early works and construction civil and remediation works. Our pre-construction early works comprised of comprehensive environmental investigations, which included the use of an Optical Interface Probe and Membrane Interface Hydraulic Profiling probe, enabling the development of detailed 3D models of the contaminant plumes. The 3D models provided a detailed understanding of the extent and volumes of the soil contamination.

These models allowed us to place soil and vapour monitoring wells across the site in targeted positions for more effective sampling, real time monitoring and measurement of hydrocarbon quantities.

Our scope during the construction phase included all civil works associated with the basement and bunker excavation including service relocation works, bulk excavation and remediation of the site. To undertake this work, it was imperative to utilise extensive site material tracking given the highly varied soil contamination across the site. Detailed planning, along with a close working relationship with our on-site consultant (DBD Environmental), resulted in the successful implementation of our materials tracking system.

In addition, our collaborative relationship with the piling contractor (Caporn Piling) assisted in de-risking the project program and allowed us to complete the project three months ahead of schedule.

Innovations

Odour Containment Tent and Odour Extraction System

During our site investigations we identified, for the first time, a buried naphthalene tank which was the primary source of contamination for the site.

DURING CONSTRUCTION PHASE OUR WORKFORCE PEAKED AT 40 PEOPLE, WITH AN AVERAGE OF 14 OVER THE 14-MONTH PROGRAM.

This tank significantly complicated our site remediation approach as the levels not only resulted in large quantities of high-level soil contamination, but also naphthalene, an extremely odorous chemical.

This challenge led to the development of our innovative odour containment structure that was fully engineered locally by our consultant (Robert Bird Group) and fabricated in our workshop in Dry Creek, SA. Due to over eight metres of fall across the site, and the irregular shaped contamination plume, our odour containment structure needed to be big enough to fit an excavator and truck, but small enough to be moved daily.

The project team designed and constructed a 15m wide by 15m long by nine metre high, crane-liftable structure with custom spreader bar. The fabricated structure was self-supporting, weighed 18t, did not require anchoring and was large enough to conduct excavation works inside using our 13t Excavator.

In addition to our odour containment tent, we needed to develop an odour extraction system that would remove and treat the odour from the tent. This system was critical from a human heath perspective to ensure our workers were not exposed to unsafe levels while working in the tent. Our designed system comprised of a single 150kVA fan that sucked the odorous air through the back of the tent (23m^3 / sec) while fresh air was drawn in from the front of the tent. The fan pushed the odorous air through a 20-foot container containing granulated activated carbon, treating the air before discharging it into the atmosphere.

This was the first time that both the tent and extraction system had been used on a project in South Australia, the first time that such a highly contaminated site had been successfully completed in such a sensitive and busy CBD location, and adjacent the operating SAHMRI and Royal Adelaide Hospital facilities.

Noise and Vibration Monitoring

The SAHMRI building is located right on the western boundary of the site and is an important medical research facility that rely heavily on mice and rat subjects. Both mice and rats are sensitive to noise and vibration, and exceeding very sensitive levels may result in the loss of millions of dollars in important research.

To mitigate this risk, we worked closely with SAHMRI to modify our construction methodologies and undertook comprehensive site trials to better model anticipated noise and vibration levels for each construction activity. These results informed the vibration limits set for the project and were monitored closely in real time during the works.

Community and Stakeholder Engagement

McMahon Services facilitated the development of a Stakeholder and Community Management Plan (SCMP) for the project, given the amount of critical key stakeholders surrounding the site, and the environmental challenges.

Stakeholder strategies included early pre-emptive engagement with key stakeholders, ongoing active engagement during construction, and the establishment of a project 1300 number and email for enquiries and complaints. The 1300 project number allowed the project team to intercept and address any community complaints rather than them going directly to the EPA or South Australian Government.

The high level of stakeholder engagement through the delivery of the project, along with our robust remediation methodology, resulted in the project not receiving a single complaint from the public.

We attribute the success of the project to collaborative working relationships with all stakeholders, and the ability to drive the construction process throughout – from engaging and managing consultants, to developing and executing site investigations and remediation methodologies.

We are proud to have been a part of yet another iconic South Australian project, that will leave a legacy for generations to come.

FOSTERING COLLABORATION
AND MENTORSHIP FOR WOMEN IN CIVIL

WOMEN IN CIVIL SA

Proudly Supported By McMAHON SERVICES intract

McMahon Services and Intract Australia are proud to announce our new partnership supporting the Civil Contractors Federation SA – Women in Civil Committee, further demonstrating our dedication and drive to encourage diversity in our workplace, and in the construction industry.

We are committed to providing tangible outcomes, becoming leaders, and to being advocates for women in the industry, by providing an inclusive culture that values diversity of thought, opinion, and background, and where our employees are provided with equal access to opportunities.

This exciting partnership was announced at the Civil Contractors Federation SA (CCF SA) Women in Civil High Tea on Wednesday 20th May. On the day we had John Briggs – Intract Australia Chief Executive Officer, and Sarah Townsend – McMahon Services, Learning and Development Manager, address the attendees to speak about this new opportunity.

Some of the notable opportunities that this sponsorship sees us receive is; we gain first option for all female apprentices completing any of the CCF SA pre-apprenticeship programs, a scholarship for two females completing the Roads2Civil Program (pre-apprenticeship program run in schools), and a scholarship for one female completing the Civil Connexions Program (pre-apprenticeship program for school leavers).

The Women in Civil Committee provides a positive and inspirational focus on Women in the Civil Construction Industry, embodied by celebrating women, from workers on the ground to leadership and management. They strive to encourage the next generation of women to consider civil construction as a career choice, by providing awareness, support, mentoring programs, and networking opportunities.

We have a unique opportunity to turn the page for a new generation of thinking, collaboration, and mentorship in the construction industry.

Empowered women and men, empower each other.

FROM THE SUNSHINE STATE

TO THE TROPICAL CAPITAL OF NORTH QUEENSLAND

At McMahon Services we have family business values, whilst integrating our reputation, integrity and relationships to deliver exceptional outcomes for our clients. We are firmly committed to looking after our staff, from safety in the workplace through to professional development, ongoing training, and equal opportunities.

A prime example of this is the appointment of our long-term employee Chelsea Karena as our new Area Manager for our Townsville branch. In 2021, the opportunity arose for Chelsea to leave her beloved Queensland team, pack up her fiancé, cat and dog, and take the 15-hour drive and relocate to Townsville.

Chelsea first joined our Queensland team as an Environmental Scientist in 2017, and soon became a Project Manager after managing a number of environmental remediation projects.

She is a qualified Environmental Scientist with eight years' experience in contaminated land remediation, ecological assessments and contractual management prior to joining the Company.

Chelsea strives to excel in both her personal and professional life and has become an integral part of the McMahon Services team. She is passionate, positive and always willing to help others.

Since arriving in Townsville Chelsea has set up a new premises, built new client relationships, won her first Townsville project and is starting to recruit and build her team.

We asked Chelsea of her time here at McMahon Services;

What do you enjoy most about working at McMahon Services?

My colleagues!!! Plus working on diverse projects across Queensland.

What do you hope to achieve for the business in Townsville?

For McMahon Services to be the first call our North Queensland Clients make when a project arises. I want them to know the job will be done right, safely and to the highest possible standard.

Thanks for your drive and dedication to the business Chelsea, we can't wait to see what new heights Chelsea takes the business to in the tropics.

LOT FOURTEEN UPDATE

McMahon Services have been on site at Lot Fourteen since November 2017, completing stages 1, 2B, the Women's Health, Allied Health and McEwin and Bice Buildings, and at the time of print, currently undertaking stage 3A and Boiler House works.

Over the life of these stages to date we have completed over an impressive 549,330 man-hours.

Being a part of such an iconic project has been exciting and challenging, but seeing our progress and the transformation of the site has been rewarding, to say the least. We are proud of the work that the team has undertaken so far, we value our client and stakeholder relationships that we have built, and look forward to seeing the whole precinct come to fruition.

Stage 3A

Stage 3A has comprised of the demolition and remediation works for the ten-level North Wing, 13-level Residential Wing and service tunnels of the former hospital site.

Overall, the project has demolished 17,200t of concrete, 820t of construction and demolition waste, 458t of bricks, 475t of timber, and recycled 2246t of steel.

More than 375t of non-friable asbestos waste and 6452 drums of friable asbestos waste was remediated from the site, with civil works to fill the remediated service tunnels totalling and impressive 31,000m^3.

We used a total of 135t of scaffolding material to construct the full height scaffold structures that encapsulated 2900m^2 of building facade. The fully engineered scaffolding system used incorporated acoustic wall cassettes with aluminium frames, fitted with an all-round rubber seal and galvanized steel sheets. The fully sealed cladding system eliminated the risk of dust events and reduced construction noise emissions.

Mechanical Demolition of the Superstructures

The mechanical demolition methodology for the North Wing and two wings of the Residential Building were met with a top-down demolition approach.

The three North Wings were 30m high, comprising of nine levels of reinforced concrete floors, supported by a lattice of primary and secondary beams on steelwork columns, and ten levels of reinforced concrete core structure.

The North Wing produced 12,000t of concrete and masonry, and 1700t of steel, which was transported offsite for recycling.

The Residential Buildings encompassed two 35m high wings, comprising of 13 levels. Demolition works resulted in production and offsite recycling of 5900t of concrete and masonry, and 544t of steel.

Service Tunnels Demolition and Civil Works

The former Hospital once included a significant network of underground tunnels connecting the North Wing to the Service Block, travelling through the Residential Wing. There were also significant service tunnels and electrical ducts within the perimeter of the site. These tunnel networks became a significant component of the Stage 3A which works comprised of backfilling these tunnels.

The site contained multiple areas of archaeological interest, with the foundations of some of the oldest hospital buildings dating back to 1856, and the oldest buildings still standing on site dating back to 1906. The project team worked closely with Renewal SA's heritage archaeologist to enable the categorical inspection and survey of exposed subterranean structures prior to their removal.

Real Time Environmental Sensors and Reporting

The project team established a partnership with Australian company Attentis, to provide real-time environmental sensors across the Stage 3A site. Attentis' patented sensor technology measures micro-climate, weather, air quality and composition.

Continuous data output across all metrics enabled the project team to monitor a live dashboard revealing environmental conditions in real-time. This allowed immediate action in the event environmental readings exceeded set limits.

Boiler House and Dental Hospital

The works were diverse and involved the isolation and removal of services, building demolition and remediation of the Boiler House, service tunnels and Adelaide Dental Hospital Basement.

Overall, the project demolished 6017t of concrete, 20t of construction and demolition waste, 5735t of bricks and

100% OF CONCRETE, BRICKS AND MASONRY FROM 94,000 TONNES OF DEMOLITION HAVE BEEN RECYCLED.

WE RECENTLY WON TWO AWARDS FOR OUR WORKS AT LOT FOURTEEN AT THE MASTER BUILDERS SA BUILDING EXCELLENCE AWARDS

recycled 401t of steel. Approximately 1292t of asbestos contaminated construction and demolition waste was remediated from site. Civil works to fill the footprint of the two buildings and service tunnels totalled 20,000m^3.

Demolition of the Boiler House required a staged approach to address the many structural challenges present in the three distinct buildings it comprised; the main Boiler House, Chiller Plant Room and the Flue.

The Main Boiler House structure contained a basement and was 15m in height with a sawtooth roof structure with trusses. The Chiller Plant was 15m in height and positioned upon a ground level slab, while the Flue was 45m high.

With the Flue structuring standing at 45m tall and the Komatsu PC1250 long reach excavator having a 40m reach at its maximum, the approach was taken to demolish 5m of the Flue manually using jackhammers and a 200T Crane- the old-fashioned way, before bringing the rest down with the PC1250.

Community and Stakeholder Engagement

Key project stakeholders included SA Pathology in the IMVS Buildings and the University of Adelaide in the Helen Mayo South and North Buildings. Their primary concerns were noise and vibration generated during the works and maintaining unimpeded access to their facilities via the laneway next to the works.

Proactive stakeholder strategies included monthly meetings with both groups to discuss upcoming activities and address any issues or conflict that might have arisen.

The stakeholder team provided three-week advance programs fortnightly, and all interfacing works were discussed and approved two-weeks prior to commencement.

CONCRETING COLLABORATIVE PARTNERSHIPS

Building collaborative partnerships is our bread and butter. We pride ourselves on being a partner of choice, and delivering certainty for our clients. In May 2020, we began a five-year contract with Adbri, providing materials cartage services between the various quarries, their port operations in Birkenhead, and mining operations for the various quarries including Blanchetown, Moculta, Birdwood and Stone Well.

Adelaide Brighton Cement (Adbri) is a leading manufacturer of cement, lime and pre-packaged dry-blended products specifically engineered to suit the requirements of their customers. They operate two plants; the Birkenhead Operations in Port Adelaide and Angaston Operations in the Barossa Valley.

We are delivering the contract under a collaborative partnership arrangement with key performance indicators (KPIs) driving contract performance and continuous improvements. KPI tracking is undertaken quarterly and includes safety performance, plant and equipment standards, industry and statutory compliance, service and quality.

As part of our continuous improvement, McMahon Services in partnership with Adbri identified the need to explore truck configuration options and Fleet Tracking Systems (Navman) to deliver maximum efficiency, manage fatigue effectively, whilst enhancing safety.

In July of 2021, we commissioned two new Prime Movers and Stoodley Trailer Stag Configurations, and Front-End Loaders.

We also purchased new plant and equipment to deliver the works including excavators, tip trucks, dump trucks, 15,000L water trucks, D9 dozers and graders.

Cartage Contract

The cartage contract involves the logistics management and transportation of various Adelaide Brighton Cement products mined from the Blanchetown, Moculta, Angaston, Birdwood, Stone Well, Truro, and Penrice quarries. These products are then transported to Adelaide Brighton Cement's Birkenhead Operations.

The Blanchetown and Moculta operations run 24/7, with other quarries operating on a campaign-by-campaign

basis. Each day, between six and 15 trucks transport approximately 800t of material. This equates to approximately 300,000t of material moved each year, requiring more than 500,000km of truck movements.

Once material arrives at the Birkenhead Operations, front-end loaders stockpile the materials for feed into various plant production and loading streams onsite.

Mining Contract

As well as cartage services, we also provide mining services at the Blanchetown, Moculta, Birdwood and Stone Well quarries. Works involve surface stripping, overburden and waste material management, surface mining, stockpiling, crushing and grading, product management, dewatering and rehabilitation.

A project team of ten is mobile across all four quarries operating on a daytime, six-day roster.

Specialist plant includes a Powerscreen Premiertrack 600 and a Terex Finlay 693+ Track Inclined Screensand Telestack TC-424X 24m mobile tracked stockpile conveyors that, when working in combination, allow us to deliver the required production rates without compromising the quality of the end product.

"We really value the partnering relationship that we have with McMahon Services, not just with this specific contract in South Australia but more broadly across the Adbri group. This type of partnering relationship creates value for both parties as we work closely together to ensure we are efficient, safe and ultimately a low-cost producer of quality cement made right here in Australia. We have been building Australia since 1882 and we look forward to continuing this partnering relationship with McMahon Services into the future."

BRETT BROWN, CHIEF OPERATING OFFICER, ADELAIDE BRIGHTON CEMENT

PORT WAKEFIELD DUPLICATION PROJECT - NORTHERN WORKS

Sub-alliance and Alliance Contracts are a testament that collaboration and innovation are recipes for successful project delivery, and sub-alliance models are a unique and innovative method of integrating a local supply partner into Alliances. They allow Contractors to self-deliver sections of overall works, while maintaining the full transparency and collaborative culture principles set out by an Alliance Delivery Model.

The Port Wakefield to Port Augusta Alliance (PW2PA), a consortium of CPB Contractors, Aurecon and GHD, in alliance with the Department of Infrastructure and Transport (DIT), are leading and delivering works on the Port Wakefield Overpass and Highway Duplication Project. McMahon Services were engaged by the Alliance as a Sub-Alliance Partner to deliver the northern portions of the works.

As an Alliance they commit to fulfil the promise of 'connect, grow and sustain' by;

- Improving freight productivity and connections with regional communities
- Boosting local amenity and regional skills in the civil construction industry

Port Wakefield Road typically carries 8800 vehicles per day, which can increase to approximately 16,000 during holiday peak periods. The Augusta Highway and Copper Coast Highway intersection north of Port Wakefield is one of the State's busiest regional road intersections, being a national and regional link between Adelaide, Port Augusta and the Yorke Peninsula.

The project involving the construction of an overpass and connecting ramps for vehicles using the Copper Coast Highway, will remove conflict points, reduce these queues and delays and dramatically improve safety at the intersection.

Scope of Work

McMahon Services were engaged to deliver the northern half of the project, construction of the new Copper Coast overpass including on and off ramps, merge and acceleration lanes, a new overpass bridge structure, and construction of two new Wakefield River bridges, dramatically improving safety and conflict points, while reducing queues and delays.

We first commenced on site in October 2020, with property accommodation works, site fencing and establishment of the project compound and office.

In November, significant changes were applied to the work area, in preparation for construction of the overpass. This resulted in traffic barrier installation, median strip removal, road realignment, and the installation of 165,000m^3 of soil to build the bridge abutments on either side of the Augusta Highway.

- 51 precast concrete piles were driven into the ground to a depth of 15m
- Two Detention Basins, the equivalent of 60 Olympic sized swimming pools - 150,000m^3, were built to assist with stormwater management
- 167,000m^3 of earthworks placed to build the 8m high bridge abutments; the structures on either side of the highway that will support the overpass bridge.

The Port Wakefield Overpass and Highway Duplication team reached an important milestone in June 2021, with the pouring of the centre pier concrete wall for the overpass, followed by the installation of the bridge beams in July 2021. Undertaken by our sister-company Ballestrin Construction Services.

The new overpass comprises a two-span integral bridge with a 1500mm deep Super-T, 400 square precast concrete driven piles, 140,000m^3 of earthworks in the embankments, spill through abutments.

The centre pier is a complex key element of the overpass and measures almost nine metres high, ten metres long and over two metres wide. Containing 13 tonnes of steel reinforcement and a total of 136.6 cubic metres concrete, the centre pier blade wall took approximately ten hours to pour and finish.

OVERPASS FAST FACTS AS AT OCTOBER 2021

- Import and placement of 106,000t of quarry material to create the 3.2lm of new southbound carriageway roadway
- 167,000 project work hours expended to date

In August, we completed the partial switch of traffic below the overpass. This traffic switch provided access to complete the Southern span of the overpass including the final portions of the bridge deck, and installation of the precast concrete bridge parries and steel traffic rails.

As of October, we had completed the new Southbound carriageway including completion of Southbound Wakefield River bridge, placement of granular pavement in preparation for bitumen spray seal, installation of guardrail and road furniture and landscaping treatments.

The completion of the Southbound carriageway is a key project milestone and allows for traffic to utilise the newly completed roadway, providing access for the reconstruction of the existing Northbound roadway, and the demolition existing Wakefield River bridge.

Stakeholder Engagement

Stakeholder engagement is a vital working element to this project, and the team are committed to developing genuine relationships within the community they are working in. The PW2PA Alliance regularly hold community information sessions, allowing the project team to build and strengthen relationships with the local community, while providing an overview of the project, and giving the attendees an up-close tour of the project site.

The team send regular communications to their specialised database informing them of the upcoming works, and giving them the opportunity to learn what has been happening at the site.

Training Outcomes

To further demonstrate our dedication to providing real employment opportunities and outcomes for Indigenous Australians, Intract Australia, in collaboration with the Alliance and TAFE SA, created a 14-week program that was undertaken by 16 long-term unemployed Indigenous participants at the PW2PA site, on Narungga/ Kaurna land.

Find out more about this incredible training program on page 38.

The opening of the Copper Coast Overpass is scheduled for mid-2022, and the completion of Port Wakefield Overpass and Highway Duplication construction in 2022.

PW2PA Alliance have proudly achieved **one million incident-free project hours** across its projects. This demonstrates the Alliance's commitment to the safety of its team and is a testament to the effectiveness of its safety program, collaborative work and implementation of industry best practices across the PW2PA project sites.

We wanted a name that reflected what we do and who we are, but we didn't want it to be a name that easily mispronounced or spelt, or affect the One Nation community. My keywords were Indigenous and Contractors and by converging both words "In" and "Tract" I came up with "Intract"

JOHN BRIGGS, CHIEF EXECUTIVE OFFICER

300+ EMPLOYMENT OUTCOMES OVER THE HISTORY OF THE COMPANY

17% EMPLOYEES CURRENTLY STUDYING

$40+ MILLION IN TURNOVER FOR 2019/ 2020

10 YEARS STRONG

CELEBRATING INTRACT AUSTRALIA

When John Briggs, David McMahon and Andrew McMahon founded Intract Australia (Intract) back in 2010, they were but a small team facing a challenging goal, but with a well-defined vision and the confidence to grow that vision into a viable and profitable business.

After 10 years of hard work, they remain just as focused as they were a decade ago. In that time, they have grown their experience, capabilities, strengthened and built their workforce, and formed collaborative partnerships across Australia.

The start of their exciting journey began on 12th July 2010, when David McMahon, Managing Director of McMahon Services, met John Briggs, who at the time was Director of his own earthmoving business, at a meeting with the Aboriginal Foundation of South Australia. Discussions between the two identified a shared vision, and the vision progressed into action, and Intract was soon launched as a business unit of McMahon Services.

Within a year, in August 2011, McMahon Services and the Aboriginal Foundation of South Australia proudly unveiled Intract, a business unit of McMahon Services, where it remained until 2014, when it was then established as its own entity.

Shortly after the amalgamation of Intract into the McMahon Services office at Dry Creek in South Australia, a Northern Territory office was also established with the McMahon Services NT team. Having a presence in the NT was extremely important to us, and we found it vital to be present in the Indigenous communities in order to really make an impact.

Today, Intract remains a standalone majority owned and operated Aboriginal company, and one of Australia's largest privately-owned Indigenous civil and building construction businesses.

We have since expanded on our service delivery lines, providing civil and building construction, building maintenance, asbestos remediation and demolition services for clients across Australia, and we have offices established around Australia, making us capable of delivering in city centres, through to remote locations.

Along our journey, we continue to be an industry innovator and collaborator, and our aim remains to provide support to Aboriginal people to 'Walk a New-Path', and to 'Close the Gap' for Indigenous Australians. Our simple business model of 'train on the job, stay on the job' has proven to be a great success.

We now look forward to the next chapter of Intract and new opportunities for future growth.

This is the Intract Way.

FIRST PROJECT UNDERTAKEN IN SOUTH AUSTRALIA:

THE WEST VENTURE CAMPUS REDEVELOPMENT

This project involved a two-stage campus redevelopment project, demonstrating Intract's civil capabilities.

Intract with McMahon Services, was contracted by Coppock and Associates, to undertake the upgrade of facilities and services at Westminster School's outdoor education campus at Point Sturt, next to the shores of Lake Alexandrina, in South Australia, and Westminster in Marion – the two campuses situated 90kms apart.

The project involved disconnecting and preparation works required to remove ablution blocks from Westminster at Marion and move them to the Point Sturt campus. Works at Point Sturt also included the installation of service trenches, electrical and hydraulic works, and building works such as new decking and repair works in the amenities buildings and existing student dormitories.

The second stage of works comprised the relocation of the ablution blocks. A major project challenge was manoeuvring the crane between existing buildings to gain access to the buildings to be removed. Special attention was required for this operation to be completed safety, as the school remained fully functioning during the works.

"Intract Indigenous Contractors are commended on the professional manner in which the services were provided and the high level of experience demonstrated by your employees during the course of the works. In addition, I compliment you for your management and leadership in the development of Intract and your mentoring of Indigenous workers and cultural awareness for the greater community."

GRAEME J COPPOCK, SENIOR CONSULTANT & DIRECTOR COPPOCK & ASSOCIATES

FIRST PROJECT IN THE NORTHERN TERRITORY:

ROAD NETWORK UPGRADES AT SANTOS' MEREENIE OIL AND GAS FIELDS

From March 2013 to June 2013, Intract delivered civil construction works for new drill site leases and associated road network upgrades for the expansion works at the Santos Mereenie Oil and Gas Fields.

A team of nine, along with four local Aboriginal men also employed by Intract, mobilised to the remote site located in the Amadeus Basin, approximately 300 kilometres south-west of Alice Springs. Intract was contracted to construct eight lease pads for new drill rigs and upgrade approximately 40 kilometres of roads for better access to the site.

Works were fast tracked and comprised 800,000m^3 of earthworks and 200,000m^2 of road pavements undertaken. The workforce peaked at 45 personnel and achieved a 35% Indigenous participation rate.

The project team was proud to be working on the land, gaining tickets to operate heavy equipment, earning money to support their families, and ultimately encouraging the younger generations to follow in their footsteps.

For Santos, the project was not just about capital and energy growth; it was also about giving Aboriginal people a stake hold in the investment and improving Indigenous communities.

CREATING LONG-TERM EMPLOYMENT PATHWAYS

PARTNERING WITH PW2PA AND TAFE SA

To further demonstrate our dedication to providing real employment opportunities and outcomes for Indigenous Australians, Intract Australia, in collaboration with Port Wakefield to Port Augusta (PW2PA) Alliance and TAFE SA, created a 14-week program that was undertaken by 16 long-term unemployed Indigenous participants at the PW2PA site at Port Wakefield, on Narungga/ Kaurna land. The program focused on gaining skills on a live construction site.

A strong partnership between Intract, PW2PA and TAFE SA identified a group of participants with barriers to education and employment, and set out to help them to develop skills and experience that could provide them with increased career opportunities.

The program consisted of training on a live worksite, mentoring, and development. Once complete, the successful participants received a Certificate II in Civil Construction and were given the opportunity to gain full-time employment on the Port Wakefield Overpass and Highway Duplication Project with the PW2PA Alliance partners.

Whilst participating in the program students gained the full experience of working on a live worksite and were exposed to everyday tasks associated with a project site, including safety training, site inductions, morning prestart meetings, and toolbox meetings etc. Tickets gained were White Card, Excavator, Roller, Moxie (dump truck), Bobcat, and Loader.

As a reflection of the quality of the training and the commitment of the participants, all trainees have secured employment within the construction industry. We are extremely proud of the participants, and cannot wait to see where their construction journey leads them.

The project is working to create rewarding careers for Aboriginal people within the construction industry, and aims to leave a legacy long after the Port Wakefield Overpass and Highway Duplication is complete.

Intract Chief Executive Officer, John Briggs, explained that this valuable program was a massive joint effort by those coordinating it and the participants.

"PW2PA, TAFE SA and our Intract team have worked hard to coordinate and deliver this training program, but it is important to recognise the effort of the 16 participants travelling to Port Wakefield every day and committing to be out of their comfort zone every day," he said.

This program would not have been possible without the assistance of TAFE SA, Naranga Nation Aboriginal Corporation, CPB Contractors, Department of Infrastructure and Transport, Point Pearce Community and Community Council, PW2PA Alliance, and the Commissioner of Roads for their assistance and support.

"This course has changed my life in so many ways! Before the course started, I had no real direction in my life and I had so many barriers in my personal life that had stopped me from getting a job.

Since completing the course, my confidence and personal growth has grown so much. I have now got a license and my own car and I secured full time employment as a trainee plant operator / labourer with a large earthmoving company".

TAYLOR LOMBARDI, PROGRAM PARTICIPANT.

COMMITMENT TO INDIGENOUS ENGAGEMENT

ANNUAL INTRACT NAIDOC AWARD

In 2017, Intact Australia created an award, presented in NAIDOC Week, to show appreciation to clients whom they feel have proven their commitment to engaging and creating job opportunities to 'Close the Gap' for Indigenous Australians.

As an Indigenous owned and operated company, Intract are committed to outcomes that are real and lasting for Aboriginal and Torres Strait Islander peoples, and they look to collaborate with clients who uphold the same values.

On Tuesday 13th of July, it was with great honour that Intract awarded their NAIDOC award to the Department for Infrastructure and Transport (DIT) for their outstanding commitment to Indigenous engagement. Proudly accepting the Award was Jon Whelan, Executive Director of the Department for Infrastructure, presented by John Briggs, Chief Executive Officer, Intract, and David McMahon, Managing Director, McMahon Services.

We asked Jon Whelan what it meant for the Department for Infrastructure to receive this award, he expressed; *"On behalf of the Department for Infrastructure and Transport it is a great honour to receive this award. The Department is firmly committed to Indigenous engagement and continues to ensure this remains a focus, as we deliver our significant infrastructure program. This award is great recognition of the hard work that has been undertaken in Closing the Gap for Indigenous Australians".*

We would like to recognise DIT for their outstanding commitment to Indigenous engagement, in particular on the Port Wakefield Overpass and Highway Duplication project. We also asked Jon how it felt to personally accept the award;

"To receive this award in NAIDOC Week and from Intract, an Indigenous owned and operated business, is particularly special and humbling. The Department looks forward to continuing to work collaboratively with Intract, and making a positive difference for Indigenous Australians".

NAIDOC Week celebrations are held across Australia every July to recognise the history, culture and achievements of Aboriginal and Torres Strait Islander peoples. This year's theme speaks about Country as a person, and how Country can be identified as family, kin, law, lore, ceremony, traditions and language. *"Heal Country - Country is inherent to our identity. It sustains our lives in every aspect - spiritually, physically, emotionally, socially, and culturally".*

For Intract, Country means embracing Aboriginal cultural knowledge and understanding of Country as part of Australia's national heritage, which we want to share.

John Briggs, Intract Chief Executive Officer, says of the NAIDOC Award;

"With our NAIDOC Award being presented for the 5th time, we are proud to award this to DIT for 2021. They have shown their commitment from tender conceptions into projects won, and they demonstrate the engagement of Aboriginal businesses and Aboriginal people on the ground".

intract

PRECAST SOLUTIONS

Introducing our newest exciting service offering, in association with sister company Ballestrin, Jaybro and Deltabloc® involves fabricating and supplying precast concrete safety barriers, allowing us to deliver a turn-key solution for our clients.

The DB80 Series is part of a holistic passive safety traffic concept, designed and tested for utmost versatility.

The barriers are lightweight, showcase an F-shape, are steel reinforced and MASH approved.

The unique design allows for easy and efficient transport and installation without compromising on quality or safety.

The jersey shaped design keeps the barrier weighed down to allow fast truck mounted crane installation, while the distinctive coupling allows for easy assembly and disassembly on site.

THE PATENTED TENSION BAR IS INCORPORATED WITHIN EACH BARRIER. TENSION BARS ARE AVAILABLE IN DIFFERENT STRENGTHS TO ACCOMMODATE DIFFERENT CONTAINMENT LEVELS REQUIRED.

AVAILABLE IN TWO METRE, FOUR METRE AND SIX METRE LENGTHS FOR NUMEROUS APPLICATIONS - EITHER INTERLOCKING OR STANDALONE.

WIDTH OF ONLY 570MM, MINIMISING FOOTPRINT ON ROADS, MAXIMISING LANE WIDTHS.

WEIGHING ONLY 520KG/ PM THE SYSTEM IS EASILY TRANSPORTABLE AND FULLY MODULAR WITH SCREWLESS, FAST AND EFFICIENT INSTALLATION UTILISING THE PATENTED DELTABLOC® COUPLING SYSTEM.

AUSTRALIAN STANDARDS APPROVED FOR ROAD USE UP TO 100KM/HR IN SA, NSW & VIC, & 80KM/HR IN QLD.

CAN ASSIST IN REDUCING THE RISK OF A HEAD ON COLLISION AS A RESULT OF A VEHICLE CROSSING OVER A MEDIAN STRIP, DEFLECTING SPEEDING CARS AT A 15-DEGREE ANGLE.

INDIGENOUS PARTICIPATION 15%

PIPELINE TO SUCCESS AT RAAF BASE WOOMERA

Located about 450 kilometres north-west of Adelaide, Woomera Range Complex's remoteness and quiet electromagnetic environment is ideal for complex air, ground and space test activities.

RAAF Base Woomera is also situated within the Woomera Prohibited Area (WPA), and is the essential operational support to the range, and includes the airfield, hangers, technical areas and village.

The WPA is an important Defence capability and testing and evaluation asset that plays a significant role in Australia's national security. The Department of Defence required replacement and upgrade works to the Port Augusta Water Pipeline that supplies water to the Woomera Prohibited Area and neighbouring communities.

Intract undertook the replacement and upgrades to the existing radio telemetry system to allow for remote monitoring and control of the pumping stations on the Port Augusta to Woomera Pipeline, with the works requiring a complete shutdown of the 190km pipeline on two occasions. During these shutdowns, works comprised of the draining, bleeding and re-energising of the pipeline.

The project team developed an innovative construction method that allowed for offsite hydrostatic and disinfection, minimising downtime of the pipeline for commissioning.

Multiple work crews allowed for simultaneous works at multiple locations, including the installation of new pipe elements and mechanical systems. This reduced the downtime of water supply to Woomera and the five other communities dependent on the water pipeline.

The WPA contains sites of enduring significance to Aboriginal people, including stone arrangements associated with traditional ceremony and ritual, rock art sites, ceremonial sites, cultural sites manifested in topographical features such as watercourses, and archaeological sites that show how people lived in and used their environment.

We had extensive Management Plans on how to manage heritage findings and areas to be considered to be of significance by traditional owners. Providing innovative solutions for our clients, whilst also acknowledging and respecting the traditional custodians of the lands upon which we operate was integral to this project's success.

DID YOU KNOW?

THE WOOMERA RANGE COMPLEX IS THE LARGEST LAND-BASED TEST RANGE IN THE WORLD.

CONQUEST AT CULTANA

NOMINATED FOR A CCF EARTH AWARD – PROJECT VALUE $10M - $30M

60,000 WORKHOURS

30% INDIGENOUS PARTICIPATION ACROSS THE PROJECT

AT ANY ONE TIME 20 TRUCKS WERE IMPORTING QUARRY MATERIALS TO THE SITE

Located approximately 300km northwest of Adelaide, and 15kms west of Port Augusta, the 2,100km^2 Cultana Training Area is one of the Australian Defence Force's largest training areas. Intract Australia were engaged by the Department of Defence to undertake road repair works on the Cultana site, with the award of the project becoming one of the largest and most complex civil construction projects to ever be self-performed and delivered by an Indigenous owned Company.

The project involved the reconstruction and realignment of 13.2km of the Main Supply Road. The works transforming a single lane track into an eight-metre wide, heavy-duty unsealed road capable of accommodating heavy vehicles in two directions. Additional scope included construction of four hardstands totalling 60,000m^2, by making use of 22,700m^3 of site won materials.

Over the duration of the project, works undertaken included;

- Site clearing of 475,000m^2 of unexploded ordinance (UXO)
- 100,000m^3 site cut to stockpile
- 200,000m^2 subgrade preparation and proof roll
- 100,000m^3 filling to formation level
- 48 culvert crossings
- 25km of open drains and rock installs, and;
- 170,000m^2 of pavement.

We believe in supporting the local communities in which we work in, and this project was a prime example of that. The project was undertaken over eighteen months, and in that time, we rented 15 properties long-term, and also had long-term rentals at the local cabin parks.

We developed strong stakeholder relationships in the region, including with the local council, in which we were able to work collaboratively together to develop appropriate truck routes to ease congestion and create a safe one direction route.

Our Workforce

The workforce peaked at 50 onsite personnel. The project encompassed more than 60,000 workforce hours and achieved 30% Indigenous Participation across the duration of the project.

Local Indigenous personnel made up most of the project's locally hired workforce.

The personnel on the project were a combination of long-term Indigenous employees who began with Intract as labourers and plant operators over ten years ago, who, during their career with us have become senior plant operators with diverse skills across multiple plant and equipment makes and models, with one employee taking up an apprenticeship as a Surveyor.

All five Intract operators provided training and mentoring to labour hire operators brought onto the project to meet operational and production capacity. Training the labour hire personnel enhanced their skills and earthworks production capabilities, and as a result of their excellent performance, Intract engaged four of the operators as full-time Intract employees.

Pictured Left to Right: Jarrad Clark-Rantassa, John Briggs,, James Clark-Rantassa and Neil Clarke

WELCOME TO THE 10 YEAR CLUB

Further to celebrating Intract's 10-year anniversary, we also celebrated three very important employees who have been there with us since the beginning - Neil Clarke, Jarrad Clark-Rantassa and his brother James Clark-Rantassa.

John Briggs is incredibly proud of Neil, Jarrad and James, highlighting how, *"Intract is closing the gap. All the hard work invested into transforming this idea into reality, to witness the growth of the staff that are still here some ten years on is what it's all about."*

"Neil, James and Jarrad have been valuable and instrumental in the company's success and we wish to formally acknowledge their hard work and efforts," said John.

We presented them with a commemorative certificate and new Tissot watch to celebrate.

Congratulations to Neil, James and Jarred – we look forward to assisting you to further your career within the construction industry.

Neil Clarke

"I started at Intract as a junior Labourer.

In the last 10 years I have become an experienced Operator and I have really enjoyed this role. I enjoy bringing the experience I've gained, as well as my commitment and efficiency to my team. In the future I would like to move into an operations role.

My favourite part of working at Intract is having the opportunity to travel. I have travelled across Australia in varying roles, and a lot of the people I have met in my travels I still keep in contact with.

My biggest accomplishment so far is buying my own house, and the biggest lesson I have learnt is – hard work pays off."

Jarrad Clark-Rantassa

"I started at Intract as a junior Labourer, and in the last 10 years while working for Intract I have become an experienced Operator, and have gained the tickets necessary for this.

I enjoy being on site and getting the experience operating a range of plant. I am passionate about learning new skills and in the future, I would like to further my skill set by doing further studies to become a Supervisor.

Working at Intract has shown me that hard work pays off and to keep your goals in your vision and always look forward."

James Clark-Rantassa

"I started at Intract as a junior Labourer, and in the last 10 years I have become an experienced Operator and more recently I have started a Certificate IV in Supervision.

I am ambitious and driven. I like to set myself challenges, so I have something to strive towards. Intract has given me the opportunity to work on different sites, and given me exposure to aspects of the civil construction Industry.

I was honoured to be the first recipient of the Annual Intract Des Nichols Award in 2017, and I look forward to completing my Certificate IV in Supervision, and I will soon get the opportunity to be a Supervisor on a project run by Intract.

The biggest lesson I have learnt at Intract is the importance of safety and being a role model to new people in the industry."

Ballestrin.

THREE PILLARS OF COMPLEX CONCRETE DELIVERY

In the last few years, Ballestrin has positioned itself as a market leader in complex concrete construction, but as General Manager Michael Hyde explains, clients today demand so much more from their cement, steel and aggregate building materials, as well as their Contractors.

"Concrete is more than just building new structures, much of this market is about maintaining existing concrete infrastructure and remediating concrete elements to extend the life of critical client infrastructure," said Michael. *"That's why in 2021 we established three distinct business lines, each headed up by Ballestrin's most experienced and senior Construction Managers."*

Clifford Byrne, who has operated at a senior level within Ballestrin for close to ten years, today leads our Concrete Remediation works. While recent additions to team, Frank Medve and Barry McAuliffe, are leading our Complex Concrete Construction, and Precast and Minor Works services lines, respectively.

"Frank joined us this year bringing two decades of project management expertise in pavements, airport infrastructure, civil and concrete works, and Defence infrastructure in Australia, the United Kingdom, the Middle East, and Eastern Europe,"

"Barry commenced with the team 18 months ago, bringing fifteen years of concrete, civil and structural expertise, gained predominately on high-profile infrastructure projects in Canberra and across the Australian Capital Territory."

The three business lines are now well established, and servicing our clients across Australia.

Recent concrete remediation works include factory upgrades for Spring Gully Foods, clarifier repairs at Icon Water's Googong Water Treatment Plant, several upgrade and remediation projects in the ASC facility and concrete facility upgrades for Adelaide Brighton Cement (Adbri) at Angaston.

Particularly challenging for the team were the foundation works at ASC for their Building 02 refurbishment, including the construction of four deep 'cleaning baths' for cleaning new vessel components manufactured for use on future Australian Navy frigates.

The highlight of complex concrete construction in 2021 was the extensive form, reinforcement and pour works undertaken for Osborne Naval Shipbuilding Precinct's Future Submarine Program, specifically on the Combat System Physical Integration Facility and Platform Land Based Test Facility Form.

These facilities were designed to support the diesel-powered Submarine Program and required 12,000m^3 of concrete and 1,600t of reinforcement to complete, but with Australia's recent transition to a nuclear submarine Defence program, their future, alas, seems uncertain. The highly technical build required the development and delivery of new construction techniques including an innovative concrete wall pour. The team had to

Clifford Byrne

Michael Hyde

Barry McAuliffe

Frank Medve

EMPLOYEES
100 +

YEARS OF OPERATION
50 +

REVENUE FY2021
$30M

construct a nine-metre high, 100m long wall with a single continuous pour.

Placing 350m^3 over 15 hours using a super-flowable bespoke concrete mix design certainly tested the team, and our third-party temporary works designers but was successfully achieved within the super critical tolerances.

In the same year, the Ballestrin's complex concrete construction team undertook its first major bridge construction work for the Department for Infrastructure and Transport. The Port Wakefield Duplication Project, which required a major overpass to congestion bust the notorious intersection. Ballestrin delivered these two over-road bridges and two additional over-river bridges. Our construction methods included super-T beams, pre-stressed concrete piles and pre-stressed concrete decking units.

The third service line of Ballestrin's service offerings is our specialised team - precast concrete and minor works.

The first of these pre-cast concrete projects, undertaken in collaboration with Intract Australia, was to deliver 3000m of road safety concrete barriers for use on the Port Wakefield Duplication Project, followed by a series of pre-cast concrete items for the Olympic Dam shutdown.

Complementing the pre-cast team is the rapid response minor works team that undertakes small projects providing a cost effective and urgent timeframe service to all our clients.

Michael also said that the complexities of Ballestrin's business model have driven sophistication in the company's systems. "We are also expanding our industry memberships beyond the Concrete Institute of Australia (CIA) to include the Civil Contractors Federation (CCF) and the National Precast Concrete Association Australia. Our partnership approach to design management means we can offer clients a one-stop-shop engineering solution through leveraging established partnerships.

When asked about the future of Ballestrin, Michael said, *"Every year seems to bring its own challenges and opportunities, but growth and diversification are the primary constants. The market looks to stay strong over the next few years and Ballestrin is set to capitalise on the significant successes and diversity of projects we have been fortunate enough to work on. Our success is born from our engagement with the market. Also critical is how we apply our human capital. With the team now consisting of over 100 Engineers, Supervisors and tradespeople, we regularly asses how they are best utilised for success."*

Michael concludes *"I am often reminded and humbled in this industry when I remember that no matter how much we know and grow, there is always something new, exciting and different around the corner. Ballestrin is now well set up to meet those challenges."*

Bilyara Winery

RAISING A GLASS

BUILDING ON OUR FOOD AND BEVERAGE CAPABILITIES

Founded in 1946, Spring Gully Foods is a South Australian owned and operated company that manufactures a variety of foods including pickles, sauces, relishes, chutneys, mustards, honey, jams and fruit spreads.

Ballestrin were engaged to delivery upgrade works to their Adelaide factory facilities.

The works comprised construction of a dedicated wash bay, new pipe and drainage for sewer, stormwater and trade wastes, to achieve compliant flows, additional drains, and concrete repair and upgrade works for heavily trafficked areas of the factory.

An ongoing operational issue for Spring Gully Foods was the deterioration of concrete floors, due to the vinegar production. The project team advised on solutions to mitigate this risk through the use of an anti-microbial polyurethane concrete coating, specifically designed for food processing factories. The team also developed a slab design that optimised drainage flows.

The project team installed 100m of pipes for trade waste, poured 80m^3 of insitu concrete, applied 185m^2 of polyurethane coatings, installed a new pump station, and fabricated and installed a stainless-steel splashback on the wash bay.

Works occurred within a constrained food and beverage grade manufacturing factory that operated at full production rates at all times during the concrete construction and repair works. The project team developed programs and methodologies to ensure they did not compromise food production.

The project team achieved this by delineating construction areas from production areas, installing temporary plastic sheeting walls to maintain food hygiene standards and extraction fans for dust suppression, and implementing out-of-hours works. The outcome was a successful project completed on time with zero impacts on production or food hygiene.

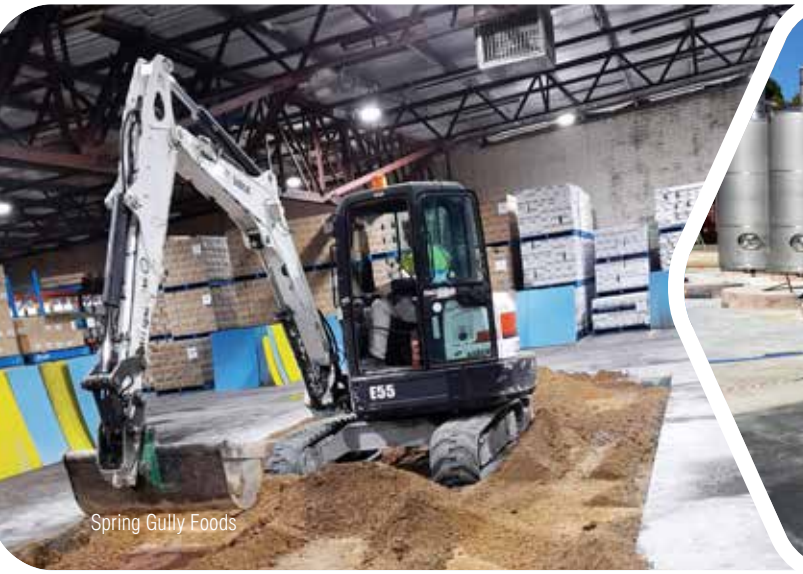
Further to our delivery at Spring Gully Foods, and strengthening our food and beverage track record, Ballestrin also undertook works at Bilyara Winery in Nuriootpa in South Australia, as part of a larger redevelopment project. We delivered concrete works to support a new tank farm. Ballestrin were impressively the only local company that had the skills, expertise and capacity to deliver the works in such a short time frame.

Adhering to the winery's strict food and beverage hygiene standards, the works comprised the supply and installation of concrete slabs, channel drains, bored piles and 352 tank plinths. Four slabs totalled approximately 8300m^2 of 175mm thick concrete achieved with up to eight monolithic pours per slab.

When Treasury Wine Estates approached Ballestrin to undertake the works, they were already on a short timeframe to complete the works, and required the project team to commence on site within one week of contract award. The major constraint on the program was the following year's wine harvest, which occurred in March, leaving the project team with only four months to complete a major scope of works.

Challenging the concrete works program was the requirement to work around mechanical and tank construction contractors also operating on site. The project team had to complete a minimum of eight tank plinths per day to allow enough time for concrete curing so the tank installers could meet the same production rate. The project team achieved this by rapidly mobilising a large workforce and maintaining it during the works.

Additional innovations to improve production rates included redesign the formwork for tank plinths, which allowed for fast setup on site. Over time, this allowed for a production rate of ten plinths completed per day, allowing the team to stay well ahead of the tank installers' production rates.



Spring Gully Foods


Bilyara Winery


Bilyara Winery

ALL PERSONNEL, SUBCONTRACTORS AND SUPPLIERS WERE LOCAL SOUTH AUSTRALIAN BUSINESSES, RESULTING IN 100% LOCAL INDUSTRY PARTICIPATION ON THE PROJECT (BILYARA WINERY).


Spring Gully Foods


Bilyara Winery

GOOGONG WATER TREATMENT PLANT
CLARIFIER CONCRETE REMEDIATION

Icon Water is the Australian Capital Territory's supplier of essential water and sewerage services, who own and operate over $2.2 billion in assets including a network of dams, water treatment plants, sewage treatment plants, reservoirs, water and sewerage pump stations, water mains and other related infrastructure.

Completion of Icon Water's Googong Dam occurred in 1979 on the Queanbeyan River to cope with the increased water demands of Canberra and neighbouring town of Queanbeyan, and today provides 43% of Canberra's water supply storage capacity.

A feature of the now upgraded Googong Water Treatment Plan is four square 27m by 27m concrete clarifiers constructed of reinforced concrete. The clarifiers are settling tanks engineered for continuous separation of solids by allowing heavy suspended solids to settle at the bottom. The process then removes the thickened sludge layer for proper disposal, while treated water overflows from the top of the clarifiers through to the next treatment stage.

However, by 2020, Icon Water identified that the screed layers inside the clarifiers had neared the end of their operational life. Simultaneously, Icon Water also identified that modification of the clarifiers' configuration could improve the process of solid separation.

Due to our recent successful delivery of similar works at SA Water's Bolivar Wastewater Treatment Plant, we were engaged to undertake remediation and structural improvement works for the four concrete clarifiers and redesign their square configuration into a more circular structure to improve settlement processes.

Undertaking the works in two stages allowed two of the concrete clarifiers to be taken offline for construction and repair works, while the other two remained operational. These works occurred in two consecutive winter months during low water usage periods. The first work component comprised remediation of non-structural screed layers inside each four 27m by 27m square concrete clarifier. The 50mm non-structural screed layers had experienced significant de-bonding to the underlying structural layers, and the internal mechanical equipment in the clarifiers had also reached the end of their service life.

All components of the tank were removed, and the screed layer removed to a depth of 50mm. Construction of 16 corner in-fills, four in each clarifier, were constructed to allow more efficient settlement of sludge through the creation of a more circular arrangement.

The project completed 15,000 work hours, and the workforce comprised a core team of seven and peaked at 15 during major pour works, all of whom received extensive training on the job.

RAAF Base Amberley

TIDY UP FOR RAAF BASE DARWIN AIRMEN'S MESS

31% INDIGENOUS PARTICIPATION RATE

10,000 WORK HOURS WERE COMPLETED OVER THE DURATION OF THE PROJECT.

We have a strong, long-term history of delivering Department of Defence projects across Australia on 60 of Australia's Army, Navy and Air Force bases and barracks in major urban centres and remote locations, and we have delivered in excess of $250m in Defence works across all states and territories of Australia.

In 2020, we undertook works at RAAF Base Darwin, which is a Royal Australian Air Force military air base, and situated over 45-hectares.

It was identified that one of the buildings on site required the replacement of the heating, ventilation and air-conditioning (HVAC) system.

The scope of works consisted of the refurbishment of aesthetic architectural finishes to the building and the replacement of mechanical systems including ducted HVAC systems, electrical services, fire systems, epoxy floor coatings in kitchen area, ceilings, windows and the patching and painting of internal walls, doors and frames.

To ensure the project met the deadline requirements, the various scope of work packages was completed concurrently, with each of the different trades working alongside each other, rather than in a staged process.

The project was completed with 19 personnel, of which six were indigenous achieving a 31% Indigenous participation rate. An Indigenous safety advisor and electrical apprentice received on-the-job training during the works, enabling them to build their skills within the industry and on site.

With our strong track record of delivering works in Defence bases, we were also engaged to undertake the demolition of 19 buildings within RAAF Base Amberley, in Queensland. Works also including isolation and removal of services, asbestos remediation, mechanical demolition to foundation slab level, demolition of aboveground storage tanks, and earthworks to remediation and level completed demolition area. Overall, the project produced 15,000t of construction and demolition waste and 15,000t of steel, all of which the team recycled offsite.

SYDNEY TEAM SUCCESSFULLY DELIVERS ST MARYS FREIGHT TERMINAL

Pacific National's (PN) St Marys Freight Hub is located 45km west of Sydney's CBD and is intended as an intermodal shipping container terminal to receive full containers transported from Port Botany by train, and distributed to the Greater Western Sydney region by road transport.

PN identified the requirement for an upgrade of their 45-hectare site with the proposed 10-hectare development forming an important port link to move containers to and from Port Botany to greater Western Sydney. The Hub will facilitate up to five freight train services between Port Botany and St Marys each day. Each 600-metre-long freight train service has the capacity to transport 87 shipping containers (equivalent to approximately 40 B-double truck trips), and operate 24 hours per day, 7 days per week.

McMahon Services worked within an Early Contractor Involvement framework to develop designs, cost estimates and importantly, the plans required to achieve the development approvals. The project was granted Major Project Status by the NSW Government, which meant development approvals were more stringent, thus McMahon Services worked with the client for 12 months prior to gain all the approvals necessary to develop the site.

The Project – By the Numbers

The project comprised design and construction of 68,000m^2 of heavy-duty pavement adjacent the train corridor to facilitate the 600-metre loading face. Critical road connections were also required to the local road network and designated freight routes.

Other works included a wash bay and fuel storage facilities, stormwater drainage including water sensitive urban design (WSUD) principles and stormwater reuse and relocations of existing overhead high voltage 11kV and 66kV services. All works were delivered in a live operational rail environment.

Once the project achieved approvals there was significant pressure to have the terminal constructed and commissioned as soon as possible to realise the massive benefits of efficient freight movement in Sydney. The initial design and construct program was a blistering 10 months to deliver:

- 50,000m^3 of earthworks
- 2 kilometres of stormwater
- 2 kilometres of fire mains
- 1 kilometre of water mains
- 110,000 tonnes of onsite recycled select pavement material
- 130,000 tonnes of new upper pavement material
- 14,000 tonnes of asphalt

Key Challenges

Electrified Rail and High Voltage Power Interfaces

Key to making the terminal operational required the relocation of high-voltage power lines away from heavy vehicle access routes. The design, construction and commissioning of these works is highly specialised and required to be undertaken by Authorised Engineering Organisations.

Not only is the work highly specialised they involve interfacing with electrified passenger rail network and high risk works. Given the safety and service requirements by Sydney Trains meant meeting strict procedural requirements and standards to achieve the staged relocations over many planned shutdowns and isolations of the train network.

Rapid Antigen Testing being undertaken on site

The criticality is that the Blue Mountains rail line passing through St Marys takes 2,887,000 passenger travels per year and Sydney Trains only allow minimal rail outages under strict protocols.

The close proximity of the busy St Marys train station also meant that any outages were planned in detail, and in 30-minute increments ensuring no service disruption was experienced by Sydney Trains as a result of our works.

A key initiative for McMahon Services to achieve a successful planned cutover of the endeavour energy high voltage power was to ensure all affected properties had continuity of power supply. This saw McMahon Services have 40 diesel generators on hand and hooked up to feed power to 35 properties. This ensured our key stakeholders and neighbours were not disrupted by our works.

'Not only is the work highly specialised they involve interfacing with electrified passenger rail network and high risk works.'

Innovations

Intelligent solutions for heavy vehicle access

A major hurdle to achieving development approvals was to develop a safe solution for the 100 b-double trucks per day entering the site adjacent the busy St Marys train station precinct including kiss and drop parking for cars, cyclist and pedestrians.

The orientation of the heavy vehicle access road meant that entering trucks would not have had a line of site of exiting trucks. So, McMahon Services partnered with intelligent transportation systems specialist SAGE Automation to develop a specialised access system that involved technologically advanced cameras to detect trucks and specialised software to communicate access protocols.

In simple terms, the cameras detected all traffic movements and activated gates and signage to hold exiting trucks, and provide entering trucks priority. The system also held all trucks to give right of way to pedestrians and cyclists. This innovative engineering solution was a key to managing traffic ingress and egress and ensure the safety of workers.

Rapid Antigen Testing

COVID-19 has impacted all of our lives in recent times. Construction projects are no different but when construction sites could recommence in NSW there were government requirements to meet which included COVID-testing workers twice a week. The time required for workers to attend testing facilities and obtain proof to come to site meant that significant time was lost and the costs were quickly outweighing the benefits of recommencing the project.

Knowing that program was still critical to our client to be able to commission the terminal, McMahon Services implemented Rapid Antigen Testing on site by designing and building a specialised testing station on site and employing accredited testers.

This enabled us to test the 80-stong workforce and obtain results in close to real time. Whilst achieving an efficient recommencement of the project, the real win was to ensure zero cases whilst being in a declared local government area hotspot. The safety systems, processes and procedures that McMahon Services was able to develop ensured the safety of the team and surrounding community and also allowed us to continue to commission the terminal on time.

ASURCO
ROOFING & CLADDING

FACE LIFT FOR HAY STREET FACADE

The Enex Shopping Centre, on Hay Street Mall in Perth's central business district, comprises three levels of fashion, food and lifestyle retailers.

The site has had quite the history – with it being built in 1890, destroyed in 1907 by fire and then transformed into a modern shopping complex in 2009.

Since 1890, the unique facade of the building has remained, despite the various building modifications, extensions and modernisations. It was identified that the facade had started to deteriorate, and required demolition and removal.

In order to keep the piece of history, and heritage feature of the building it was decided to replicate the facade.

Skilled artisans made the original 1890 facade by plastering cement render onto brickwork to form the shape. Such tradespersons are rare today and recreating the facade in the original manner would have been time-consuming and prohibitively expensive in a busy retail precinct such as Hay Street Mall.

The builder for the project, Lendlease, engaged Asurco, specifically for our specialty product – our glass-fibre reinforced concrete (GRC) solutions. GRC produces a facade one-tenth the mass of the original, and the construction method uses moulds which are ideal for making curves and shapes that would be economically prohibitive to create using traditional precast concrete methods.

The facade crossed three levels of the building, was 30m long and 14.5m high, and required over 20 different moulds to complete.

Design Works

To ensure the project team accurately replicated the existing facade, the project team surveyed the original facade using a combination of 3D scanning technology and photometry to produce an accurate AutoCAD model of every element to an accuracy of ±1mm.

The data collected produced detailed AutoCAD shop drawings. Where elements of the original facade were missing because of crumbling and deterioration, historical photos were used to fill in missing elements. Overall, 1100 work hours went into the survey, design and drafting works for the project.

Once the design works had been completed it was time to begin the manufacturing works. Overall, 6900

work hours went into the manufacture and supply of the facade elements.

Columns

The column heads were the most difficult to reproduce, as these were originally hand-carved on site and included intricate patterns and designs. To address this challenge, the project team created a master mould using clay, hand-carved by a sculptor to match the templates from the original design.

Once the clay hardened, the project team brushed on thin layers of latex rubber to form a flexible mould skin or glove, which was then backed by gypsum plaster layers to form an outer rigid mould-casing. This would allow for the glass-fibre reinforced concrete to be poured over the latex mould.

Manufacture of tapered round columns supporting the column heads was achieved using rolled sheet metal fixed onto profile-cut formers and a timber frame to support the metal skin of the mould. Multiple coats of glass-fibre reinforced concrete were then sprayed onto this mould and eventually compacted into a 15mm thick layer.

The project team manufactured gables and window surround facade elements using profiles cut by our computer numerical control (CNC) machine which reads the drawing shapes to ensure perfect accuracy during the mould construction process.

Installation Works

The project team transported the cured facade elements to Perth on semi-trailers mounted on T-shaped frames lifted on and off by fork lifts or cranes, with two facade elements per truck.

Because there was no availability for a laydown area on the Hay Street Mall site, the team only brought facade elements to site when it was possible to lift them by a 90t crane and fit them into the building structure that night.

Once facade elements were in place and fixed to the structural steel frame, the project team adjoined the elements with polyurethane sealant, and then painted the coating to achieve a smooth, uniform finish. Overall, the installation required 14,000 work hours to complete.

At the completion of the works, nothing of the original facade remained. This project proved to be Asurco's most complex glass-fibre reinforced concrete project yet undertaken.

THIS PROJECT WAS USED BY LENDLEASE AS A SPOTLIGHT FOR THEIR INTERNAL TRAINING TO SHOWCASE THE PROJECT AND HOW GRC IS MADE AND USED, AND THE ARCHITECTURAL BENEFITS.

OUR DIGITAL JOURNEY
DELIVERING QUALITY ASSURANCE AND CERTAINTY

The McMahon Services Group of operating companies has embarked on a new course, with a mission to change the way we work, to create environments that connect our resources and to enable information collaboration across our projects and companies in a secure way.

Our IT team are considered digital accelerators, armed with the skills, knowledge and technology to help solve complex business challenges. The team continue to partner closely with every facet of the business and are the foundation of our broader community of change agents that help to drive the adoption of new ways of working.

We are on a continued journey to becoming digital leaders of our industry, and the pace of change is accelerating as we invest more in our people and technologies. We're becoming a more information orientated organisation, focused on ensuring our people have the digital tools, skills, information and processes to succeed now and well into the future.

We want to ensure our solutions continue to offer our employees, subcontractors and clients with frictionless and enjoyable user experiences.

Application News

In September 2021, McMahon Services formed a major partnership with the US construction platform, **Procore**. Across the organisation, Procore will manage all major projects moving forward and will provide significant benefits and information visibility for our site team, subcontractors and most importantly, our clients. Procore will be implemented progressively over the next 12 months and is an exciting addition to the business' application suite.

McMahon Services has also selected **Sitepass** as the solution to manage and help mitigate the company's project-based risk and compliance requirements. In 2022, the team will be implementing the cloud-based application to centrally manage our site compliance, subcontractor pre-qualifications and visitor management. The Sitepass solution promises to deliver highly visible and real-time site compliance assurances to all stakeholders.

The IT team are currently working with the Transport and Logistics business unit to digitise their scheduling, logistics, plant tracking, safety management, service requests and electronic work diaries. The new solutions will significantly improve safety standards, regulatory compliance and greatly assist our drivers with the provision of real-time information and job details. The full solution is being delivered on an agile basis through to the end of 2021.

We have also continued with our expansion of online forms and digital workflow management solutions to help streamline data ingestion and distribution. The highly configurable 'no-code' online forms have been used extensively to cater for all our business units for the purposes of onboarding / offboarding, online safety tools, major requisitions and internal service requests, just to name a few. These changes streamlining numerous business processes, and providing a user-friendly experience.

Cybersecurity

With the acceleration of both widespread internet-enabled remote working across the world and the ongoing threat of breaches, information security has never been more important. McMahon Services have come a long way in their cybersecurity journey.

In-keeping with the ACSC Essential 8, the McMahon Services IT team has significantly bolstered the businesses security program across its applications, networks and infrastructure. The business has invested time and resources in detailed security assessments, penetration testing, implemented several new cybersecurity solutions and significantly hardened all internal information security standards.

To better demonstrate the businesses commitment to information security, McMahon Services has submitted its Defence Industry Security Program (DISP) application in August 2021 and will be committing to obtain ISO 27001 accreditation in 2022, to reflect the businesses commitment to information security.

Digital Certainty

These initiatives illustrate our ongoing commitment to handle our company data, and that of stakeholders entrusted to us, in a safe and secure manner. The data of yesterday and today is our foundation for the future, and McMahon Services will bring a strong focus on digital excellence to our industries as we seek to construct a brighter future for all our stakeholders.

NEW ADDITIONS TO FLEET

McMAHON SERVICES OPERATES AND MAINTAINS ONE OF AUSTRALIA'S LARGEST PRIVATELY-OWNED FLEETS OF CONSTRUCTION AND DEMOLITION PLANT AND EQUIPMENT. OUR $80 MILLION NETWORK OF COMPANY-OWNED PLANT AND EQUIPMENT IS CAPABLE OF SERVICING PROJECTS IN URBAN, RURAL AND REMOTE LOCATIONS ANYWHERE IN AUSTRALIA.

Over 400 major plant items comprise of dozers, demolition and civil excavators, graders, roller, dump trucks, batching plants, service trucks, water trucks, soil blending machines, prime movers, hook life bin trucks, low loaders, semi-tippers and cranes.

The list below is a summary of those items added in 2021.

Light Vehicles	
Hilux Ute	37
Hiace Commuter bus	2

Trucks and Trailers	
Isuzu NPR400 Boilermakers truck	1
Volvo FM13 8 x 4 Hooklift Truck	2
Volvo FM13 Prime mover	3
Isuzu FRR110-240 Flat top	1
Stoodley Stag B Double sets	2
Volvo FH16 Prime Mover	3
Volvo FMX Shermac 15000L Water Truck	4
Scania Capelotto Vacuum truck	2
Hino 616 Flat Top	1
Southern Cross Drop Deck Semi trailer	3
Krueger Sidelift Semi Trailer	1

Specialised	
Rammer 2577 Hydraulic Rock Breaker	1
Salmon Concrete Pulveriser	2
Rammer 455 Hydraulic Rock Breaker	1
Jetwave Genesis Trailer mounted cleaner	1
JLG 660SJ Boom Lift	1
Howard Nugget Slasher	1
Digga 40' Flail Mower	1

Earthmoving Equipment	
Komatsu HM300 Articulated Dump Truck	2
Komatsu PC220 Excavator	2
Komatsu PC130 Excavator	2
Komatsu PC45 Excavator	1
Komatsu PC55 Excavator	5
Komatsu PC88 Excavator	2
Komatsu PC130 Excavator	1
Komatsu PC170 Excavator	1
Komatsu PC240 Excavator	1
Komatsu PC360 Excavator	1
Komatsu WA250 Wheel Loader	1
Komatsu WA270 Wheel Loader	1
Komatsu WA470 Wheel Loader	2
Komatsu WA500 Wheel Loader	1
Caterpillar CW34 Multi Tyre Roller	1
Caterpillar 825 Compactor	1
Caterpilar D10T Dozer	1
Caterpillar 140M Grader	1
Bobcat S590 Skidsteer loader	2
Bobcat S650 Skidsteer loader	1
Bobact S66 Skidsteer loader	1
Husqvarna Forward reverse vibe plate	3
Dynapac CA2500D Roller with shell kit	1
Superior Broom Road Broom	1

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THE WORKS

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