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COVER PICTURE: Bruce Swan (Dobbie) and Water Minister Hon. Simone McGurk *MLA with Dobbie's record-breaking gate* valves. Full story page 10.



The Voice of the Industry

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FROM THE PRESIDENT

Industry meeting the challenge of new high-risk requirement



he publication of Western Australia's new WHS General and Mining Regulations in early August has given CCF WA a renewed resolve to expedite the design and implementation of a civil-specific training option for excavator operators, who from August 2025 will need to be licenced to perform lifting operations.

Previously we had been looking at a compliance date of March 31 next year for the new regulation requiring operators of excavators being used as a crane to possess a high-risk work licence (HRWL). With the publication of the finalised amendments, that date is now August 10, 2025 (see page 20). It is certainly not ideal that Worksafe WA, our state's WHS regulator, has decided to go it alone on this issue and departed from the nationally harmonised framework. But we understand their concerns and accept it's the reality we have to deal with.

Perhaps the biggest issue with our state departing from the nationally harmonised licensing framework will be the training requirement. By requiring that excavator operators need a licence to lift, our regulator also had to decide "which licence?" - as there is no Safe Work Australia guidance on this. Worksafe WA has decided that the training

requirement will be the C2 course - Licence to Operate a Slewing Mobile Crane.

The big problem with this is that slewing is one of the very few things that mobile cranes and excavators have in common. In nearly every other respect, they are different pieces of machinery that operate and respond in totally different ways.

Furthermore, as we have pointed out to Worksafe, the official training materials (unit outline) for the C2 course clearly state that it is not designed to train operators of excavators, backhoes or other earthmoving equipment.

In the amended regulations published on August 10, Worksafe has created a new sub-class of high-risk work – "use of slewing earthmoving machinery with a safe working load greater than 3 tonnes as a crane". As it stands, this new class of work will require a slewing mobile crane (up to 20t) HRWL, but we are optimistic that the regs have been structured in a way that has provided an opportunity for the training requirement to be reviewed and changed.

In the two-year window available, we believe a new accredited training course can be developed, specifically for safe lifting with excavators

We have the support of our industry training council, which has kindly offered to assist with guiding us through the design and accreditation process.We are enlisting some committed HSEQ, training and operations experts from industry to consult on the training content.

If we get the course accredited, we'll then have to seek Worksafe and possibly also Safe Work Australia's endorsement to approve it as a licensed training requirement for highrisk work. And Worksafe will also have to agree to amend the current regulations. Ideally, all of that can be accomplished by this time next year, to allow sufficient time for training organisations to gear up for delivery.

It won't be easy, but I get the sense there's a realisation that we need to get this done. Everyone I speak to in the industry agrees that the last thing we want is excavator operators being forced to get a slewing crane licence. That would not be a safe nor sensible outcome.

Leon Fogliani CCF WA President



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CCF WA filling the pipeline information gap



ne of the actions that came out of the legislation that created Infrastructure WA a few years ago, was a requirement for the State Government to publish an annual State Infrastructure Programme within a few months of the State Budget.

The first State Infrastructure Programme was due this year and was published on schedule a few weeks ago, in early August. But if industry was hoping that the State Infrastructure Programme would provide some useful information on future infrastructure project plans beyond the four-year Budget cycle, we've been disappointed.

The Programme mainly comprises a summary of the four-year Asset Investment Programmes published by government agencies and corporations that deliver infrastructure works. This information had already been published in the State Budget Papers.

Beyond that, there's a pretty brief tenyear outlook that's very light on detail: it doesn't really deliver "an overview of Western Australia's expected significant infrastructure needs and challenges over the remaining years and, where relevant, options to address them," as stated in the Act.

Although the information in the Asset Investment Programmes (and now repeated in the State Infrastructure Programme) is useful, there is also a lot of potentially useful detail missing.

For example, the Public Transport Authority's Asset Investment Programme notes that it will spend \$459 million on a Rail Infrastructure Program over the next four years. Some more detail about how those millions will be spent – the scope of the works, the expected size of the contracts, "If industry was hoping that the State Infrastructure Programme would provide some useful information on future infrastructure project plans beyond the four-year Budget cycle, we've been disappointed."

the locations – would be really useful to contractors and suppliers. We know the State Government understands how useful this level of detail is, because that's exactly why it created the Western Australian Pipeline of Work. Many members would have attended the launch of the Pipeline of Work back in November 2020 at the Perth Convention Centre. We were promised "a comprehensive listing

of future infrastructure projects that will enable Western Australian businesses to better plan and prepare their teams to bid for WA Government tenders, supporting the sustainability of companies across the state and creating local jobs".

It was a great idea, but what happened to the Pipeline of Work? Well, it's still online on the *wa.gov.au* website, but when we checked (late August) it had last been updated on October 29, 2021 – nearly two years ago – and some of the information is even more out of date.Apart from being totally out of date, the interface is clunky, with only a very basic 'sort' function available and no ability to export results.

At the agency level, there is some valuable civil works pipeline information available. Water Corporation and Main Roads both maintain pipeline documents, which they update quarterly and discuss with industry in their contracting advisory groups.

CCF WA is encouraging other agencies and corporations to also publish their forward works plans.

Where pipeline information is available, CCF WA has taken the initiative to start collecting it and collating it for our members, and publishing monthly updates – at this stage only for civil contracts over \$5 million, to keep it manageable for our small team.

We're also including information about contracts awarded since July 1, 2022 – which is a very handy reference for suppliers and subcontractors to know who they should be contacting to seek opportunities. Recently we have expanded the pipeline to include Local Government major contracts (over \$1 million).

The feedback from our members has been very positive.

CCF WA urges the State Government to renew its commitment to a Western Australian Pipeline of Work. In the meantime we'll keep doing what we can to fill the information gap.

Andy Graham CCF WA CEO



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The spun liners are made to meet Main Roads Western Australia Specification 405, which require pre-cast liner segments to be manufactured to AS/NZS 4058. There are a limited number of manufacturers able to produce these spun liner products. Other manufacturers of dry-cast liners ,that do not conform to AS/NZS 4058, are not an equivalent alternative and do not meet Main Roads Western Australia specifications.

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CCF WA calls out Feds over ill-timed review

he Federal Government's sudden and unexpected review of road project funding continues to delay tenders and contract awards for Western Australian road projects worth hundreds of millions of dollars, jeopardising jobs and damaging businesses. As part of its Infrastructure Investment Program Strategic Review, announced in May, the Federal Government froze approvals for funding of any new road projects - including some projects already tendered and evaluated and ready for contract award, and many others that were ready to commence procurement. This has meant Main Roads and other roads agencies around Australia have been forced to delay hundreds of roads projects.

CCF WA CEO Andy Graham said the CCF's National office had written to Federal Infrastructure Minister Catherine King urging her to fast-track funding approval for 'shovel ready' road projects to ensure a short-term pipeline of work and protect vulnerable businesses and jobs.

Mr Graham said Main Roads WA had multiple projects developed, designed and ready to go out to tender, but were unable to do so until the Federal Government confirmed its funding contribution. Mr Graham said contract awards of already tendered projects were also being unnecessarily delayed.

"We're concerned that by the time the Federal Government considers the review panel's recommendations, decides on a plan and then

consults with the states, this whole process could take six months, with no new projects coming to market or contract awards in that time.

"Meanwhile a lot of civil contractors, subcontractors and suppliers are in limbo. There's a perception that our industry is at full capacity, but that's not true for all businesses. Some contractors aren't fully occupied with ongoing project work - they were relying on new projects coming to market."

"Some of these businesses will be forced to stand down or lay off engineers, supervisors and construction workers - if they haven't already.

"We understand the Federal Government called this review due to concerns about previous funding announcements for projects that were not properly planned or developed. That's fine, but abruptly halting all funding to all new shovel-ready projects is surely an overreaction. It has caused significant and unnecessary disruption to businesses that were already vulnerable after the pandemic." When asked about the review, Transport Minister Rita Saffioti told Business News: "There's no question the (Federal) government's review into the infrastructure pipeline is having implications on contract awards and the timeline of projects...The sooner the review concludes, the sooner we can get on with delivering these projects and provide certainty to local businesses and workers."



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FEATURE

Dobbie's super-valves showcase local capability

L-R: Andy Graham (CCF WA), Bruce Swan (Dobbie), Hon. Simone McGurk MLA, Nathan Harding (Water Corporation), Phil Bardon (Dobbie), Steve Evans (Water Corporation).

By John Feary

ne of the country's longest-established foundry and engineering companies, Dobbie, has driven home the capability of the local industry with the manufacture of the largest metal seated gate valves ever produced in Australia. The four massive DN1800mm MSGVs, coming in at almost 5m high and weighing nearly 20 tonnes each, have been manufactured as part of a package of large diameter valves for a significant WA Water Corporation water treatment project in Perth's southern suburbs. "Dobbie is proud to have produced the largest metal seated gate valves ever manufactured in this country," General Manager Bruce Swan said.

"The successful manufacture of these valves to the Water Corp's exacting requirements is a testament to our Australian design and manufacturing expertise."

A Water Corporation spokesman confirmed that the state's statutory water authority would be installing the new gate valves in the near future.

"We've got tremendous confidence in the skills and expertise of local manufacturers, which is why we endeavour to support WA industry as much as possible," the spokesman said.

"In the 2021-22 financial year, 83.5 per cent of Water Corporation's procurement was with local Western Australian businesses." The substantial Water Corporation contract included, in addition

to the DN1800mm MS gate valves, a package of DN1200mm and DN1400mm units.

The selection of CCF WA Member Dobbie against strong domestic and international competition followed extensive assessment by the Water Corporation that focused on the key elements of technical merit and commercial competitiveness. All submitted bids went through Water Corporation's preliminary technical reviews that compared critical component strength, corrosion resistance and mitigation of known failure modes. As the technical analysis of bids was being undertaken during the early weeks of the coronavirus lockdowns, however, the prospect of having the manufacture carried out locally assumed greater significance given the need for the Water Corporation's progressive campaign of first-hand verification tests.

Mr Swan said Dobbie's valve design had been developed through many years of experience in gate valve manufacture and validated by Perth's premier critical infrastructure consulting engineer specialists Mechsafe Engineering, utilising a range of software tools including Finite Element Analysis.

The Dobbie valves were designed and manufactured with specialty materials selected for long-term durability and specificity to the application. The main valve components were cast in SGI 600/3 and provided with a specialised corrosion-resistant protective coating, with the sealing surfaces and other components cast in LG2 or machined from SS316.

Machining, assembly verification and testing of the valves was undertaken at Dobbie's facility in Malaga, which has been significantly modernised and achieved sustained capacity growth since moving there from its original East Perth location in 1998. Some of the larger castings for the DN1800mm valves were produced interstate and the coating and other specialist services contracted locally. The valves were entirely Australian-made.

The company is confident that the successful delivery of the Water Corporation contract will lead to more opportunities for the manufacture of similar valves to Water Authorities across the country. "The production of these high-quality, largediameter valves further enhances Dobbie's reputation as the leading Australian manufacturer of metal seat gate valves," Mr Swan said.

"Our aim at Dobbie is to be recognised as one of the leading foundry and engineering complexes in the country, lauded for the excellence, quality and cost-effectiveness of our products and services, while also contributing to Australia's manufacturing capability."

The name Dobbie has been a part of the Australian foundry industry as far back as 1862, when Scottish migrant Alexander Dobbie founded a manufacturing facility in Adelaide that later expanded into Western Australia.

The current family-owned and operated business was incorporated in WA in 1940.

Dobbie's modern foundry and engineering machining shop in Perth manufactures waterworks fittings and valves, fire protection equipment as well as castings for the defence, mining, marine, rail and power industries plus wear components for the manufacturing and resource sectors.

With manufacturing based solely in Malaga but with a national sales footprint, the company also produces a comprehensive portfolio of custom castings in both ferrous and non-ferrous metals, including grey cast iron, austenitic cast iron, ductile iron, white irons, manganese, steel, iron, stainless steel, aluminium and chrome irons as well as a range of copper alloys (brasses and bronzes).



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FEATURE



WA Limestone celebrates 50 years of shaping our infrastructure

By John Feary

rom just about all Perth's major freeway and highway expansions to the biggest public transport infrastructure project in its history, from a world-first artificial surfing reef to transformational marine and coastal developments, WA Limestone has clocked up 50 years as a key contributor to civil construction and quarry materials and concrete supply in Western Australia. Initially established by brothers Renzo and Michael Della Bona and their brother-in-law Peter Zamboni in 1973 as a small-scale supplier drawing on a single limestone source in Wattleup, WA Limestone now operates through several companies supplying more than 30 different types of raw materials including limestone, sand, bluemetal and granite products as well as concrete to contractors, state and local government, developers and the wider WA public.

The company is still family-owned and led by directors David Della Bona and Steven Della Bona together with general manager Wally Lukic.

Both David (son of Renzo) and Steven (son of Michael) grew up with the expectation they would be part of WA Limestone.

"There was never a doubt for me personally, because I sort of grew up as a shadow to my father," David said. "That's what people used to call me, my old man's shadow.

"He would be working at a quarry and quite often he would be driving a loader and I'd be there all day sitting in the loader with him. So I guess you'd say it was in my veins.

"And to a large extent it was similar for Steven. And after high school,

he went down the pathway of becoming a qualified heavy duty mechanic while I ended up going to university.

"But with both of us, we always had it in our genes so to speak that we were always going to be part of the business because we just love it." Both men also retain their love for the hands-on side of the business. "Any time you get the opportunity to take a road train load up to a regional quarry site, you can stay in the camps up there and see firsthand what's going on at the quarry," David said.

"That's kind of our way of keeping in touch, keeping our fingers on the pulse."

Throughout its first half-century, WA Limestone has been part of many of the state's major developments with its wide-ranging expertise covering seawall and breakwater construction, concrete supply with its five metropolitan plants and various construction materials from 10 quarries around metropolitan Perth plus hard rock quarries in the state's northwest at Port Hedland, Karratha and Onslow.

In road construction, its most significant current project is its role as a member of the Tonkin Gap Alliance alongside Main Roads, BMD, Georgiou Group, BG&E and GHD delivering the \$400 million project to eliminate a major bottleneck on the principal road freight network in Perth's eastern suburbs.

The widening of the Tonkin Highway to three lanes in each direction between Guildford Road and the Great Eastern Highway, including construction of new bridges over the Swan River and major road crossings, will deliver a high-standard north-south transport link primarily for freight traffic that will also significantly reduce peak period travel times.

Construction of the project began in early 2021, after several years of detailed design and community consultation. The project has been carried out while minimising disruption for the highway's traffic of more than 120,000 vehicles per day, and is due for completion early next year.

Throughout its history, WA Limestone's role in road construction has covered all the extensions and duplications of the Mitchell and Kwinana freeways.

The company was part of the Southern Gateway Alliance with Main Roads, Leighton Contractors and GHD responsible for the 71km Kwinana Freeway extension and the freeway-standard Forrest Highway, a \$705M development that was completed in 2009. At the time it was the state's largest road infrastructure project. The project was recognised in 2010 with victories in both the state and

national Earth Awards, the Australian civil construction industry's prime celebration of infrastructure excellence. The company was back on-stage at the WA Earth Awards in 2021, as a

member of the Metropolitan Road Improvement Alliance with Main Roads, CPB Contractors, Georgiou, GHD, BG&E and AECOM for their work on the \$112.5 million construction of the Murdoch Drive Connection, linking the Kwinana Freeway and Roe Highway with the emerging Murdoch medical complex in Perth's southern suburbs. WA Limestone's expertise and second-to-none reputation for the construction of seawalls and breakwaters has been highlighted at the development of a world-class waterfront precinct in Perth's north. The company and joint venture partner Italia Stone Group were awarded the \$60 million contract in late 2020 to construct twin breakwaters, at two kilometres the longest in the state and up to 18.5 metres above the seafloor.





The overlapping structures enclose the Ocean Reef Marina, which covers about 80 hectares and will include some 550 boat pens and stackers as well as the city's first ocean pool, protecting them from the surf breaks and high swells of the Indian Ocean.

The two companies supplied and placed 850,000t of limestone that forms the core and 350,000t of granite rocks for the armour layer that were sourced primarily from quarries in Byford and Neerabup. Some granite and limestone from the existing breakwater were also reused. All the work has been carried out in accord with detailed hydrographic surveys and close monitoring of ocean conditions, while allowing operations to continue in the existing boat harbour, launching ramps and trailer parking.

Funded by the state government through DevelopmentWA in partnership with the City of Joondalup, the marina will be the focus for what has been described as a transformational development comprising a new town centre and over 1,000 homes, plus boating, tourism and recreational facilities.

The company's application of advanced technological skills was demonstrated in 1998 when it constructed a world-first artificial surfing reef about 400m from the shoreline at Cables, on the Perth coast between Cottesloe and Leighton.

The first example of a reef constructed by modifying an existing limestone reef to optimise wave heights for surfing, the project involved the delivery of granite armour stone by barge from the Fremantle inner harbour and its precise placement in a boomerangshaped submarine rock structure using laser-siting construction techniques.

In 2000, WA Limestone was part of the Jervoise Bay Joint Venture with CSR Readymix and Italia Limestone and was awarded the \$16 million contract for construction of the 1.3km island breakwater that supported the development of Australian-leading shipbuilding and maintenance facilities including the Australian Marine Complex and Tenix shiplift. Yet another highly significant regional project for the company was the establishment of a boat harbour at Port Augusta, following the award of a \$17 million contract in 2012 for construction of two breakwaters utilising about 500,000t of granite rock quarried on-site.

The new harbour has been the catalyst for increasing recreational and commercial boating, fishing, charter and tourism activities in the state's southwest, while also providing safe haven in several rescues.

The project was celebrated with the presentation to WA Limestone of a CCF WA Earth Award in 2013, which followed its similar success a year earlier for the Catherine Point Groyne project at North Coogee. WA Limestone's work on the construction of a new 180m seawall utilising almost 9000t of locally sourced limestone in 2022 helped transform the popular Cape Peron recreation area in Perth's south. The new seawall, replacing an original structure that had partially collapsed, was built to cope with rising sea levels and the force of the waves to protect the dunes and pathways from erosion. The company also played a significant material supply role in the construction of the Perth to Mandurah railway line in 2004-07 and in the continuing Metronet program involving 72km in new passenger rail construction and 23 stations that represents Perth's largest single investment in public transport.





In addition to its continuing role in residential subdivisions and industrial projects, the company has been part of the high-profile metropolitan developments at Elizabeth Quay and the Perth Stadium. The WA Limestone Group comprises WA Limestone, WA Bluemetal, WA Premix, WA Limestone Contracting, WA Limestone/Jurali Joint Venture, Limestone Building Block Company, WA Limestone Heavy Haulage, Australian Sands International and Quarry Farm WA. The group operates a heavy haulage transport fleet capable of moving all types of quarrying and earthmoving machinery up to 160t with a 300-strong heavy equipment plant and equipment wet hire fleet plus contract crushing and screening plant services.

Following its progressive growth over the last half-century from quarrying into seawall construction and maritime construction, then concrete production and limestock block supply, WA Limestone's next step may be development of the quarry sites it owns up and down the state's coastline.

David said, having completed the mining of quarry sites, it was a natural progression to follow up with earthworks and road construction for industrial or residential subdivision, or maybe parkland.

With younger family members already holding executive roles in the business, and both David and Steven having children starting to show interest, the current outlook for WA Limestone remains strong. "As a family, we've got strong values and a strong bond between ourselves that creates a good foundation for this business," David said. "As long as we're all on the same page, the business will be there for the next generations - and we'll leave it to them to worry about it." Both David and Steven Della Bona have made significant contributions to the construction sector.

David recently stepped down after eight years as WA president of the CCF and has been on the state board for over 14 years while also serving as a national CCF delegate for six years.

Steven is a former chairman of the WA branch and national director of the Institute of Quarrying Australia.



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It's no secret that construction in all sectors is in hot demand across WA, with few signs of slowing down.

In fact, the industry is expected to grow by 3.6% by 2025.

Currently 8.74% of the Western Australian workforce are employed in the building and construction industry*. So it's no surprise that we contribute over \$29bn to the economy**.

But the recent skills shortages, supply delays and continuing challenges of COVID-19 are putting pressure on our industry.

How can we ensure our industry is prepared and resilient to these challenges we continue to face? By building a skilled and sustainable workforce.

That's what the Construction Training Fund (CTF) is designed to do, by providing funding and support to ensure WA has a skilled workforce that is future-ready.

Upskilling WA's construction workforce with subsidised training

Putting the destabilising influence of COVID-19 to one side, the biggest challenge currently facing the industry right now is an increasing skill shortage.

"Alleviating this challenge is one of CTF's primary missions. We do this by subsidising training courses and offering employer grants to reduce the cost of training apprentices and trainees," says CEO of the CTF, Tiffany Allen.



"We're also future-proofing the needs of the industry through our established partnerships with the sector, so we are aware and can respond to industry needs as they change.'

Through the CTF's Upskilling and Short Course Funding program, WA's construction workers can upskill in areas they may not have previously thought about, with many courses available in short formats. The CTF subsidises up to 80% of the course costs in the following categories:

- Construction skills training required for construction work performed onsite.
- Industry skills training required for skills that relate to a business directly involved with the construction industry, e.g. building codes.
- Software skills training required for skills that relate to a business directly involved with the construction industry, e.g. MYOB, BIMS.
- Work Health and Safety
- Occupational licensing

There is no limit on the number of times you can claim the CTF Upskilling and Short Course Funding rebates, however there are eligibility criteria. For example, you must prove you are working, or have recently worked, in the building and construction industry.

"We want the industry to know more about the subsidies we offer, "Tiffany explains, "because we want make sure WA continues to have a safe, skilled and sustainable construction workforce."

Supporting WA's apprentices and trainees

Upskilling employees is only part of the picture.

Developing the skills of tomorrow's workforce - apprentices and trainees - is also essential.

Our industry employs 36% of WA's apprentices and trainees. So it's vital when we experience skills shortages that we recruit from all walks of life to ensure a good flow of skills for the sector.

However, the wage costs for hiring mature-age apprentices and trainees can be a deterrent, especially for small contractors.

To overcome this, the CTF offers the Employer Grant to reduce the cost of employing and training new starters, including those of mature age.

If a new apprentice is 21 years of age or over at commencement, the employer can claim additional funding.

"With the COVID-19 pandemic causing many Western Australians to re-consider their career pathways, this grant provides mature-age workers the opportunity to bring their skills and experience into a new role to the industry," says Tiffany.

The CTF offers additional funding to regional construction businesses who employ apprentices and/or trainees, and who face challenges in attracting and retaining skilled workers.

"We want to encourage construction skill development in regional areas," says Tiffany, "so it's about being flexible and providing financial support to help make this happen."

The mature-age and regional supplements are part of the CTF grant structure and are in addition to Commonwealth apprenticeship grants.

Developing a more inclusive industry

Historically, women have only represented a small percentage of the construction workforce. But this is changing. More than ever, we are seeing an increasingly diverse demographic enter the construction sector.

"With the recent shortage of skills in WA, it is encouraging to see the growing number of females and people from culturally diverse backgrounds enter the industry," says Tiffany.

"And the CTF is here to support them as they start a career in an exciting and rewarding sector that welcomes their talent and enthusiasm for the industry." To this end, there are additional CTF incentives available for employing women and/or First Nations peoples as apprentices or trainees:

- Employment of women the additional supplement.
- the employer may be eligible to claim an additional supplement of 30% of the base rate of the grant.

This additional funding is just one of the ways the CTF aims to reduce their barriers to employment and encourage a more diverse and inclusive construction workforce.

Funding for disaster recovery and rebuild

Skills shortages and COVID-19 aren't the only major curveballs thrown our way in recent times. In recent years, our



WA's construction industry has undoubtedly faced new challenges over the last couple of years. But through the targeted industry incentives offered by the CTF to support the training of employees, we believe we can set our industry up for sustainable growth and make the most of the current market conditions.

If you would like to know more about the CTF training subsidies and grants available to you, please visit www.ctf.wa.gov.au *8.74% of the workforce is in Construction as of November 2021. Source: ABS: Labour Force : Western Australia Construction

** Source: ABS: 8762.0 Table 25 Value of Work Done by Sector Western Australia Original

employer may be eligible to claim an

Employment of First Nations peoples

community faced new challenges due to the Wooroloo bushfires, Cyclone Seroja and Cyclone Ellie.

To rebuild the communities devastated by these emergencies, CTF announced a Disaster Recovery Construction Training Grant in November last year, to support those who are involved in the rebuild efforts.

This \$3.5 million program provides extra CTF support for regional employers, apprentices and trainees, plus an additional incentive for local employers based in the affected areas.

"Attracting a workforce for the recovery efforts is a challenge due to market conditions," explains Tiffany.

"So, the Disaster Recovery Construction Training Grant financially assists those who are part of the rebuild process helping affected communities get back on track as quickly as possible."



How did you get to where you are now?

I grew up in regional Queensland. My parents own farming property – beef cattle, sorghum and lucerne crops – but also worked full time jobs. Mum was a nurse and my father was in the military, so we were raised with a very strong work ethic and an ingrained resilience. Both those qualities have absolutely been the backbone of my career to date.

My first job was behind the bar in a country pub, so that gave me a starter in customer service and the foundation skills of being able to connect and relate to people. From there my career took various twists and turns, including seven years in the corporate energy sector before finding myself in my first industry association role, as the Qld and NSW engagement manager for the Australian Drilling Industry Association. This was just as the CSG sector



Mell Greenall CEO, Before You Dig Australia

By Kylie Bronleigh.

was emerging on the east coast. From there I have had several executive roles in the industry association sector, including the Institute of Architects and Master Builders. I think what has ensured a career that I have loved has been a willingness to learn. I completed a Bachelor in Sustainability, an MBA, numerous OH&S qualifications and most recently my GAICD.

I love the challenge of change, broadening my perspectives and view of the world. As a leader I absolutely think it's critical that you are willing to continually evolve beyond your comfort zone.

Have you been involved in mentoring? Do you have a role model, or did you have one growing up?

I haven't been formally mentored but have been lucky to have had three key people as leadership role models during my career. The first was in my early career in the energy sector, and the last two were more recently during my time with Master Builders. They supported me to take the leap to CEO and I'm very lucky to now call all three friends. All three are amazing leaders who have built high performing teams across different

sectors. Some of the key things they taught me was the importance of authenticity and integrity, but just as importantly to find joy in what you do. All three challenged the idea of traditional hierarchical leadership and helped me to appreciate that this is not the leadership style that best fits my strengths. My strength is creating collaboration and empowering my teams to create change, to help them understand why the work is important, empowering them to develop the skills and then giving them the space to do it with a lot of laughter along the way. I think there is a positive change occurring in leadership from the older style of "do as I say and don't ask questions", to a far more conscious style of leadership that encourages openness, empowerment, and flexibility to bring out the best in your team. I do chuckle a little when I talk about authenticity. I think it's critical that you lead by bringing your truth and values to all that you do.

Most people these days are pretty good at sensing when people are insincere. But if your truth is that you are an arrogant bully, then I have to say that bringing your truth is going to be a problem and maybe leadership isn't for you.



"The learnings that come from failure and the resilience and agility that comes from being willing to pivot are what will make you, your teams, and your organisation successful."

How do you stay up to date with industry trends and developments?

The Financial Review with my morning coffee is how I start every day. I'm also an avid reader. I read at least a book a month on leadership and strategy.

I also believe that you can't lead from behind a desk. You must get out there and be part of the industry you work in.

As well as meeting with members, I regularly work alongside my damage prevention team, delivering damage prevention sessions and attending trade events to hear firsthand from users of our service.

You must be willing to challenge your thinking and admit when you are wrong. I know I have had several meetings when I have walked away with my preconceptions of a problem being completely shattered, which I think is great as it means there is always something to learn if you are willing to remain curious.

What are some of the biggest challenges you have faced in your career?

This is a question that demands vulnerability and raw honesty. I have had lived experiences of being sexually harassed and bullied in the workplace including a sexual assault. I don't talk about these experiences lightly, but I do believe I need to give a voice to these experiences and sadly they aren't unique or rare.

As someone who has gone thought it, it was some of the loneliest and most isolating times of my life. I put a lot of pressure and shame on myself and to this day I believe survivors must make incredibly hard decisions about speaking up or protecting your career; it's almost impossible to do both.

I think times are changing but there is a long way to go. Generally, I believe for various reasons we get far too caught up in the pressure of perfection. One of my biggest learnings has been that perfection is an impossible goal and is the death of progress and change. Absolutely aim high, but learn to appreciate that the success will be found in the journey, not the outcome. The learnings that come from failure and the resilience and agility that comes from being willing to pivot are what will make you, your teams, and your organisation successful.

Leadership can be lonely, so you need to ensure that you find joy in what you do, celebrate the moments of meaning as these will carry you through on the tough days. Laugh each and every day. There is something so powerful that happens when you work from a place of joy.



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ADVICE AND SUPPORT YOU CAN TRUST

Earthmoving equipment used as a crane

and Work Health and Safety (General) Regulations 2022 and Work Health and Safety (Mines) Regulations 2022 have been published effective 10 August 2023.

The amended regulations confirm that the new high risk work licence (HRWL) requirement will only apply to earthmoving machinery with a rated capacity (safe working load) of three tonnes or more. However the current transition period has been extended to 10 August 2025.

To confirm – operators of slewing earthmoving machinery (e.g. excavators) with a rated capacity >3t being used a crane will now require a HRWL from 10 August 2025, not 30 March 2024 as previously advised.

Operators of non-slewing earthmoving equipment (e.g. wheel loaders) with a rated capacity >3t being used a crane will also require a HRWL from 10 August 2025.

The changes in detail

1. The original General and Mines Regulations published March 2023 included this footnote to Schedule 3 - *"2. Earthmoving machinery used as crane. Earthmoving machinery used as a crane is taken to be a crane for the purposes of Table 3.1".*

In the amended regulations, this footnote has been removed and replaced by the two new classes of high risk work below.

Item	High risk work license	Description of class of high risk work
14A.	Non-slewing mobile crane	Use of non-slewing earthmoving machinery with a safe working load greater than 3 tonnes as a crane
15A.	Slewing mobile crane — with a capacity up to 20 tonnes	Use of slewing earthmoving machinery with a safe working load greater than 3 tonnes as a crane



2. The amended General Regulations also include a new r. 733: Delayed application of Schedule 3 items 14A and 15A. During the period of 2 years beginning on the day on which the *Work Health and Safety Regulations Amendment Regulations (No. 2) 2023* regulation 9 comes into operation, Schedule 3 items 14A and 15A do not apply. [Regulation 733 inserted: SL 2023/134 r. 9.]

(In the Mines Regulations, this is r. 750.)

The effect of this regulation is that items 14A and 15A in Schedule 3 do not apply until 10 August 2025. From that date the HRWL training requirements will be (from Schedule 4):

- Non-slewing earthmoving machinery: TLILIC0008 Licence to operate a non-slewing mobile crane (greater than 3 tonnes capacity)
- Slewing earthmoving machinery: TLILIC3008A Licence to operate a slewing mobile crane (up to 20 tonnes)

Protecting your right to adjudication

Are you endorsing payment claims as required?

o one wants to plan for a payment dispute with a client. But under WA's new Security of Payment legislation, if you don't plan ahead and endorse payment claims appropriately, you will lose any right to adjudication if things go pear-shaped. Valid payment claims under the new Act must include the following wording: *This is a payment claim made under the Building and Construction Industry (Security of Payment) Act 2021 (WA).* In the course of our regular engagement with CCF WA Members, we have become aware that a number of contractors have not yet revised their claim forms to include the new wording (although many have done so), which is required under the new SOP Act that took effect for contracts signed from August 1 last year.

While the new Act has imposed this small new obligation on contractors, it has also introduced significant new restrictions on matters that can be raised by clients when responding to adjudication claims.

Under the old Act, the adjudication process had become unwieldy, with many claims getting bogged down in complex legal arguments and becoming far too expensive to be worth considering for most disputes.

With the new SOP Act, WA has aligned with other states using the 'east coast model', which has been shown to streamline adjudications and make them more affordable.

CCF WA 2022/23 ACTIVITY REPORT

President's Foreword

Dear Members,

Reading through this 2022/23 Activity Report, it was very satisfying to be reminded of the depth and breadth of CCF WA's advocacy and representation over the past year. We should all be proud of what the CCF does for our industry. Late last year, our national office worked hard to ensure the amendment of critical legislation, resulting in an exemption from multi-employer bargaining for the civil construction industry. We were effectively a lone voice in Canberra defending the interests of our sector – once again demonstrating CCF's key role as the independent, nationally federated voice of civil construction. Here in Western Australia, our strong and diverse membership allows

CCF WA to be the true representative voice on what is needed to promote, protect and advance the civil construction industry, and to ensure industry sustainability. We have seen clear evidence of this in CCF WA's leadership in the creation of the Industry Sustainability Strategic Approach (ISSA).

Often our sector's interests are closely aligned with the broader construction sector. On other occasions, we may have unique issues that demand an independent perspective. It is vital that civil contractors and suppliers are represented by a strong and independent voice, advocating on their behalf.

- Some of the key themes of our advocacy and representation include:
- Increasing opportunities by promoting the benefits of infrastructure investment.
- Promoting sustainable procurement policies that provide a diverse mix of contract opportunities.
- Promoting civil construction career pathways and ensuring Government training policy responds to our needs and interests.
- Promoting a diverse and inclusive industry with an engaging and welcoming culture.
- Reducing red tape in all its forms, including onerous and duplicative procurement processes.

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- Ensuring equity and accountability in procurement through open and transparent processes.
- Promoting the benefits of fair contracts and terms that share construction risk equitably.
- Ensuring, as the Fair Work Registered Organisation representing the civil construction sector, that Federal workplace relations policy responds to our sector's concerns and interests.
- This Activity Report summarises key outcomes in 2022/23 as we have worked to achieve those aims.

Informing and connecting Members is also an important part of what we do too, and 2022/23 has been a banner year for our events. Our industry breakfasts attracted record attendances, including 300plus for the recent Women in Civil Breakfast – where we celebrated the success of our second Women in Civil Mentoring Program, another important CCF WA initiative. The Western Australian Civil Construction Industry & Training Awards smashed all records with an amazing 133 nominations and our first ever 500-plus attendance for a gala dinner.

We are always mindful that none of this is possible without our Members' support. I sincerely thank you for supporting your industry group, CCF WA.

Leon Fogliani CCF WA President



Representing

CCF WA is the voice of the Western Australian civil construction industry, ensuring our industry's views are represented to all levels of Government, key private sector stakeholders, and the community.



- > CCF WA has achieved important concessions from the State Government regarding new Work Health and Safety regulations, which originally required all operators of excavators lifting swinging loads to immediately possess a crane licence. The original regulations have been revised to include a grace period (to August 10, 2025) and a rated lifting capacity lower limit (3 tonnes), significantly reducing the scope of the regulations and the compliance burden on the industry. CCF WA continues to engage with the regulator, Worksafe, and other stakeholders, on the development of a licensed training course specifically for safe lifting with excavators.
- > CCF responded strongly to amendments to the Federal Government's 'Secure Jobs, Better Pay' Bill that would expose the civil construction sector to union-friendly multi-employer bargaining (MEB). The proposed amendments generally exempted the building sector from MEB except for "work in the industry of civil construction". The Government claimed MEB would have a negligible effect in civil as enterprise agreements (EAs) were used extensively. CCF countered that while many civil contractors around Australia do have EAs, many others do not; furthermore, companies with EAs may be vulnerable to MEB when their agreements expired. CCF focused our lobbying on Independent Senator David Pocock, whose vote was crucial. In a huge win for our sector, Senator Pocock agreed to support the Bill only on the condition that civil construction be included in the MEB exemption.
- > CCF responded to the next wave of union-backed Federal IR reform, including 'same job, same pay' and 'employee-like' reforms that could unfairly impinge on employers' abilities to manage their workforces. The Federal Government's radical reform agenda will continue to keep our National office busy.
- > Following the upgrade of the Certificate III civil construction traineeships to apprenticeships in 2021/22 (in response to CCF WA advocacy), the number of workers commencing a trade-level career in civil construction has continued to grow. WA's first-ever civil construction apprentices graduated in September 2022. CCF WA represents the industry on the Civil Construction Pilot Program Steering Group, which is monitoring the success of the four-year trial. In the years ahead, the civil construction apprenticeship will help broaden the appeal of trade-level careers in our industry.
- > CCF WA continues to support the State Government's Infrastructure Ready Program, which provides entry-level employment opportunities in civil construction, connecting contractors with people seeking careers in civil. The Government designed the program in close collaboration with CCF WA.
- > CCF WA's advocacy secured extended availability of lower course fees for existing workers in the Certificate IV in Civil Construction Supervision until December 31, 2023. CCF WA's advocacy on behalf of our industry is saving employers thousands of dollars per trainee.
- > CCF WA continued to advocate for measures to mitigate the effects of unprecedented cost escalation on construction contracts. Contractors have unfairly borne the brunt of massive cost increases and supply chain disruptions. In response to CCF WA advocacy, Main Roads extended its Rise and Fall clause to all AS2124 contracts. We defended our sector's interests when the State Government implemented a \$30 million relief scheme targeting building contractors and effectively excluding civil contractors.
- > As the industry body representing the civil construction sector, CCF WA representatives actively contributed to numerous standing committees in Government including:
 - Urban Development Advisory Committee (UDAC) and the UDAC Technical Subcommittee (Water Corp). •
 - Western Australian Road and Rail Construction and Maintenance Industry Advisory Group (Main Roads).
 - Water Corporation Contracting Industry Advisory Group
 - Utilities Providers Services Committee (various utilities)
 - Waste Reform Advisory Group (Dept of Water & Environment Regulation)
 - Traffic Management for Works on Roads Advisory Group (Main Roads)
 - Construction Industry Strategic Group (Construction Training Fund)
 - Civil Construction Pilot Program (Dept of Training & Workforce Development)
 - South West Basic Raw Materials Working Group (Dept of Water & Environment Regulation)
- > A key issue being discussed at the UDAC Technical Subcommittee is a new pipe disinfection process. Our representatives are focused on achieving a cost-effective and simple process for dosing, testing, and flushing that will maintain productivity while meeting the Water Corporation's requirements.



Training Minister Sue Ellery MLC presented one of the first civil apprentices, Sam Pfeffer from RJV, with his trade certificate alongside David Cunningham (CTF), Tim Ryan (RJV) and Andy Graham (CCF WA).

- as trade-level civil construction roles do not receive due recognition. CCF WA highlighted these issues to then Premier Mark McGowan and Training Minister Sue Ellery ahead of the Australian Jobs and Skills Summit in September 2022.
- > CCF WA facilitated regular meetings of the Civil Construction Industry Training Committee, which brings training professionals from industry together with key stakeholders in government to continually improve training and workforce development outcomes in our industry.
- > CCF WA released a landmark report investigating the highly variable standards of transparency in local government procurement and proposing important reforms. The report found that the commercial-in-confidence provision in WA's legislation, s. 5.23(2)(c), allows expectations and the practice in other jurisdictions. The report was well received by the State Government, which we understand has accepted the need for reform.
- > CCF WA commissioned a report proposing a new approach to ensuring a diverse and sustainable road and rail construction sector in WA. In response, the Director-General of Transport initiated the Industry Sustainability Strategic Approach (ISSA). CCF WA representatives are actively engaged in ISSA and we look forward to collaborating with Government on important reforms.
- > CCF WA represented the civil construction industry at a series of forums hosted by Infrastructure WA intended to identify reforms required to address construction market capacity challenges. CCF WA continued to promote a cautious approach to the 'Project 13' model of very large, long-term program alliances, advocating more flexible, competitive frameworks that can achieve the benefits of early contractor involvement and innovation within a model more reflective of local industry capacity and capability.
- > CCF WA collaborated with the Office of Major Transport Infrastructure Delivery, the Department of Training and Workforce Development, and the Construction Training Fund to host a series of Civil Construction Industry Employment Sustainability Forums. The forums bring training professionals together to share information and ideas on ensuring a sustainable, diverse and well-trained workforce.
- > CCF WA welcomed the State Government's \$80 million Infrastructure Development Fund, launched to unlock land for housing by subsidising the cost of enabling civil works.

> CCF continues to lobby the Federal Government to recognise trade-level civil occupations (e.g. plant operators) as 'skilled' and allow civil construction apprentices and employers access to generous subsidies. Our sector's access to skilled migration is also constrained,

councils to be considerably less transparent than other states, and recommended a modernised provision more in line with community



Representing

(Cont.d)

- > In response to concerns from industry that claims and variations were not being fairly assessed, CCF WA provided a confidential report to Government with evidence of a perceived entrenched, inflexible approach to contract management and superintendence. We are advised the report's findings have been a catalyst for change.
- > CCF WA contributed to improving gender diversity in the civil construction industry through the 2022 CCF WA Women in Civil Mentoring Program. The 2022 program was partly funded by the State Government Department of Transport.
- > CCF WA advocated for more visibility of the forward pipeline of Government works, encouraging a more open approach from agencies that currently provide little or no detail prior to advertising of tenders. We collated all available information into a database (see more under 'informing' on following pages).
- > CCF WA consulted with the Government on the design and implementation of the WA Buy Local Policy 2022, which is intended to provide regional businesses with better access to government works opportunities. We continued to work closely with the Department of Primary Industries and Regional Development's Local Content Adviser network, in support of regional members.
- > CCF WA advocated for lower bid costs in Government tenders by reducing the number of detailed management plans required to be submitted by tenderers.
- > CCF WA advocated to Government for the revision of some 'nominated supplier' panels that restricted the choice available to contractors for no appreciable benefit.
- > CCF WA provided detailed submissions to Main Roads on proposed revisions to Specification 202 - Traffic Management, and on a review of its Scope of Works and Technical Criteria (SWTC).
- > CCF WA's analysis of the 2023/24 State Budget (May 2023) showed record capital works investment over the next two years, to be followed by an abrupt decline (see chart below). We continued to highlight the importance of consistent growth in Government infrastructure investment to provide contractors and suppliers the confidence to invest in their businesses and their people. We also advocated for a diverse mix of contract opportunities, including disaggregation of major projects into multiple contracts where appropriate.





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Top: The 2022 Women in Civil Mentoring Program participants at the 2023 Women in Civil Breakfast in March. Right: Mentees and mentors were presented with their certificates of completion by Belinda Stopic (Main Roads WA) and program facilitator Rechelle Hawkes (MÔDAL).



CCF National CEO Chris Melham and National and WA Board Member Mick Unger were among the attendees at a Jobs and Skills Summit Industry Roundtable in Canberra.



Informing

CCF WA provided a wide range of essential information to Members, aimed at helping them operate safe, profitable and sustainable businesses.



- > The CCF WA Bulletin magazine was mailed every quarter to more than 1200 decision makers including key decision-makers in State Government and the private sector; local government CEOs and works managers; and state Members of Parliament.
- > Two annual publications, the Western Australian Civil Construction Industry Contractor Guide and the Western Australian Civil Construction Industry Supplier Guide, provided an opportunity for our Contractor Members and Associate Members respectively to showcase their companies' capabilities and expertise.
- > CCF WA's fortnightly e-newsletter, The CCF WA E-Bulletin, provided up-to-date and relevant information to Members on a wide range of industry-specific subject matter, opportunities and policy and legislation changes.
- > Members received regular targeted email updates with timely and reliable information in areas such as workplace relations, training, HSEQ, and environmental regulation. Regular sector-specific updates were sent to Members interested in information on opportunities in roads, water, power, local government, and more.
- > CCF WA CEO Andy Graham's CEO Updates provided Members with timely summaries of our advocacy efforts on important issues.
- > CCF National CEO Chris Melham's monthly National Dispatch summarised our National office's important advocacy to the Federal Government on a wide range of issues.
- > CCF WA provided comprehensive information and support to Members on the new Building and Construction Industry (Security of Payment) Act 2021, which took effect from August 1, 2022.



CCF WA's magazine, The CCF WA Bulletin; Member e-newsletter; and an Industry Update EDM sent to Members with an industry-specific breakdown of the latest State Budget.















- > Government projects, CCF WA launched our own Government civil works project pipeline database as a 'value-add' for our than \$5 million. It also lists details (where available) of all \$5M+ civil contracts awarded by Government since July 1, 2022.
- assist companies to implement an integrated management system accredited to the CCF Code.
- > environmental policy, codes of practice, fair work laws, workers' compensation, and trainee and apprenticeship funding.
- > We provided direct advice in response to Members' enquiries on a wide range of issues including workplace relations, pregualification, contracts, and payments.
- Federal Government Budgets.
- > committees.
- > and guidance for our valued Members.

The CCF WA online Member Portal, which features CCF WA's own pipeline of works spreadsheet, free CCF Code and MSRD, and up-to-date information on WHS, IR, Training news and more.

Supporting our ongoing advocacy for better information on upcoming contracting, subcontracting and supply opportunities on State Members. This regularly-updated database currently lists more than 100 upcoming civil work and maintenance contracts worth more

> We provide free access for CCF WA Contractor Members to the CCF Code and Management System Reference Documents – an invaluable resource of more than 50 policies, plans, registers and forms, all specifically designed for civil construction operations to

CCF WA presented workshops and seminars for Members with expert presenters providing free advice on subjects such as taxation,

> We reviewed, analysed and communicated industry-specific findings to Members on relevant outcomes from State Government and

CCF WA Members attended regular policy-focused meetings to contribute important feedback to our representatives on standing

CCF WA's new Member Portal, on the ccfwa.com.au website, continues to expand as a reliable and exclusive source of information

Connecting

In 2022/23, CCF WA's events brought the industry together to celebrate our achievements, learn from each other, network and make new connections, and of course relax and have fun.

CIVIL CONTRACTORS FEDERATION

- > The 2022 CCF WA Earth Awards Gala Dinner was a night of celebration, with 370 guests at Crown Perth. The CCF WA Earth Awards featured 13 outstanding infrastructure projects as finalists, with entries in all seven categories ranging from <\$2 million to >\$150 million. The judges said the calibre of entrants in all categories was outstanding, and considered that 2022 presented a significant milestone in civil construction excellence.
- > The seven WA Earth Award category winners progressed to the CCF National Earth Awards in Canberra, where two WA projects, from CCF WA Members Downer (now DT Infrastructure) and Rob Carr, defeated top projects from around Australia to win National Earth Awards in their respective categories.
- > The CCF WA Industry & Training Awards highlighted exceptional talent in the civil construction industry, with an unprecedented 133 nominations across 21 awards categories. This event was attended by more than 500 industry guests from 67 companies with Hon. Pierre Yang MLC, parliamentary secretary to the Minister for Training; Water and Youth presenting awards on the Minister's behalf.
- The annual Women in Civil Breakfast attracted a record 300-plus attendees to hear from speakers Belinda Stopic (Main Roads) and > Rebecca Reeves (Holcim). Two Women in Civil Sundowner events were also well supported.



The 2022 CCF WA Earth Awards Gala Dinner.



Attendees at the 2023 Women in Civil Breakfast



Players from Fulton Hogan at the 2022 CCF WA - Brooks Equipment Golf Day.



- > Our regular series of Industry Roundtables single-table boardroom lunch events provided Members with one-on-one access to senior decision makers in Government and the private sector.
- > The annual CCF WA Brooks Equipment Golf Day was once again sold out, with 216 golfers filling the Joondalup Resort's 27-holecourse to capacity while supporting our charity MATES in Construction WA.
- > bringing together infrastructure delivery, HSEQ, engineering design, traffic management and other professionals to share and learn the next Safety Forum in early 2024.
- > In July 2022, CCF WA hosted more than 170 guests for the 2022 President's Breakfast at The Westin Perth. Guest speaker Adrian Hart from BIS Oxford Economics travelled from Sydney to share his valuable insights on the outlook for civil construction in Western Australia and nationally.
- > CCF WA welcomed over 220 guests to the 2022 CCF WA Transport Infrastructure Breakfast in November, 2022. Our special guest joined on stage by CCF WA President Leon Fogliani and CEO Andy Graham for a panel discussion.
- > In association with the Australian Flexible Pavements Association and the Traffic Management Association of Australia, CCF WA hosted a special breakfast event to mark National Road Safety Week in May, 2023. Over 150 attendees heard presentations by Road Safety Minister Paul Papalia, Director General of Transport Peter Woronzow, and National Road Safety Week founder Peter Fraser.

CCF WA CEO Andy Graham (left) and President Leon Fogliani (right) with Minister Rita Saffioti (centre) and Michael Caltabiano (out of view) at the 2022 Transport Infrastructure Breakfast.

Partnering with Main Roads WA and the Public Transport Authority, CCF WA hosted the 2022 WA Transport Works Safety Forum, about best practice in safely managing road and rail projects. CCF WA is currently working with Main Roads and PTA on planning

speakers were Transport Minister Rita Saffioti and Michael Caltabiano, CEO at the Australian Road Research Board, who were later

CCF WA honours retiring board members

hree retiring CCF WA board members were recognised for their service at the recent CCF WA President's Breakfast.

CCF WA President Leon Fogliani said the governance and strategic direction that Lissa Wypnaszko, Steve Tennant, and David Della Bona have provided as Board Members has helped ensure that CCF WA remains the genuine and consistent voice of the civil industry in WA.

"We are very grateful for the invaluable contributions they have made throughout their tenures," Mr Fogliani said.

"Lissa has served on the board since 2019, and we'll miss her contributions and insights into the South West region.

"Steve has served on the board since 2011 and was also CCF WA's Vice President from 2016-2021.

"Dave Della Bona has served on the Board for 14 years, since 2009. Dave was of course also our President from 2015-2021 and represented WA on the CCF National Board from 2014-2022." At the recent CCF WA Annual General Meeting, the returning CCF WA board members welcomed new board members Jason Flowerdew (DT Infrastructure), Tinus Nagel (WA Limestone) and Tony Ricciardello (Georgiou).



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Monford Group revolutionises its site access control

customised 40-foot sea container incorporating state-ofthe-art AI facial recognition technology has become the cornerstone of CCF WA Member Monford Group's site access control strategy.

On a recent Solar and Battery project, Monford sought to implement an integrated Blood Alcohol Content (BAC) check within the check-in procedure to enhance workplace safety. The company was determined to cut down on manpower and administration hours while empowering subcontractors and staff to self-check-in and conduct their BAC tests in an integrated and automated process. This transformational approach aimed to reduce long queues, increase site productivity, and ease the administrative workload on Monford's WHSE Advisors.

The sea container integrates Nirovision's Doorkeeper solution, which Monford was already using in other locations, with three bidirectional rotating access gates and an integrated BAC unit on the entry side. Entering the site requires a positive facial recognition and a negative BAC, while exiting the site only requires a positive facial recognition.

The BAC setup allows Monford to use eco-friendly, biodegradable paper straws, negating the use of harmful and wasteful plastic straws used traditionally in handheld BAC checkers, and aligning with Monford's strategic sustainability goals.

Monford Chief Operations Officer Brian Rafferty said: "Ensuring the safety of our staff and sites is of paramount importance to Monford. Nirovision has ensured that only authorised individuals are granted access to the site, improving Monford's safety procedures and site security.

nsolidated Group achieves erational excellence with CloudRent

oud-based platform is trans gs, and staff management approach. cloud operating system combines these essent to one seamless, integrated platform. core values at Consolidated is innovation," s d Group Managing Director Theo Tsorvas. "CloudRent's sive system aligns perfectly with that philosophy, providing not just for effective operations but for exponential n." Tapping into CloudRent's repair tracking, preventive

naintenance scheduling, and work order management features, Consolidated Group has optimised equipment cond tions, driving the



"The container setup, which includes an alcohol test, is completely automated allowing workers to check-in by themselves which saves us time and helps reduce costs."

Beyond its immediate benefits, the data captured by Nirovision has proven to be a powerful asset that has been integrated into various systems, including payroll for timecards and safety systems for reporting.

mission to deliver unrivalled servic

With features extending from rostering to task assi nd performance tracking, CloudRent has revolutionis coordination for Consolidated Group, boosting employee performance. "We believe in equipping our team with the tools they need to succeed," adds Consolidated Group General Manager Peter Scrivener. "With CloudRent, we can optimise our operations and empower our staff."

Consolidated Group invites similar companies to share their success by embracing technology that drives efficiency and growth and are happy to share their story with other members who may be seeking technology that can deliver the same rental and equipment maintenance solutions.



Miniquip opens new distribution and service centre in Forrestdale

CF WA Member Miniquip has opened its new, purposebuilt equipment hire distribution and service centre in the Forrestdale business park.

The 6,500-square-metre facility located at 14 Roos Avenue, Forrestdale includes corporate and rental offices, warehousing for parts and attachments, impressive workshop service facilities, an environmentally friendly equipment wash bay and a large equipment hardstand area

A range of premium brand compact earthmovers is available for wet and dry hire from the brand new, purpose-built premises. The range includes excavators, track loaders, skid steers, telescopic loaders, rollers, compactors, and on-road rigid tip trucks.

The new location minutes from Tonkin Highway will allow Miniquip to deliver equipment throughout Perth's metropolitan and regional areas more efficiently. The business expects to streamline hire operations, further reducing on-hire lead times for faster customer pickups and service turnarounds.

Miniquip founder and Director John Fenton said: "On speaking with customers, we found a requirement to be able to collect or return equipment outside of our office operational hours of 7am to 5pm Monday to Friday. I'm pleased to say we found a solution and now offer this option to our account customers if they book and request after-hours access with our rental team during office hours." Miniquip originated in 1989, when Mr Fenton travelled the streets of the southern suburbs of Perth with his trusty Holden ute and mini excavator. Since then, Miniquip has grown to be the largest local provider of compact earthmoving equipment for both wet and dry hire. Mr Fenton and his wife Nicki built Miniquip's Bibra Lake depot back in 1998, and the business has resided there for the last 25 years. Now with over 25 employees, Miniquip's fleet and client offering has greatly expanded over its 34 years servicing businesses across Perth. Despite its growth, the company says its core values and expertise - as a local family business - remain to this day.

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Cbus Super delivers a healthy financial year return

bus has delivered a healthy return of 8.95%* for its Growth (MySuper) investment option for the last financial year. This result brings the three-year average annual return to 7.76%*. Over the long term, we have also delivered strong investment outcomes for our members, with an average annual return of 8.89%* since its inception 39 years ago.

This result has been achieved despite the continued volatility in investment markets that has characterised the last three years and has continued this financial year. The volatility has been driven by factors such as the ongoing invasion of Ukraine, various banking crises, persistently high global inflation and resulting rising interest rates.

Cbus' highly diversified portfolios and robust investment strategy have been built to withstand short term fluctuations and have allowed the Fund to grow their members' retirement savings over the long-term - which is what super is designed to deliver.



*Growth (MySuper) investment performance is based on the crediting rate, which is the return minus investment fees, taxes and *until 31 January 2020, the percentage-based administration fee. Excludes fees and costs that are deducted directly from members'* accounts. Past performance isn't a reliable indicator of future performance.

This information is about Cbus Super. It doesn't account for your specific needs. Please consider your financial position, objectives and requirements before making financial decisions. Read the *relevant Product Disclosure Statement (PDS) and Target Market* Determination to decide if Cbus Super is right for you. Call 1300 361 784 or visit cbussuper.com.au

United Super Pty Ltd ABN 46 006 261 623 AFSL 233792 as trustee for the Construction and Building Unions Superannuation Fund (Cbus and/or Cbus Super) ABN 75 493 363 262.

Operational techniques to keep breaking rock for longer

ne of the major causes of premature failure in rockbreakers is long cycles where an operator continues to hit the button and keep the piston striking for extended periods of time. Correctly operating a rockbreaker help minimise component wear and deterioration, keeping operators breaking rock for longer. And it isn't difficult if you follow some simple operational tips, from idle strokes and tool angles, to correct greasing and maintenance practices.

Less idle strokes

Frequent idle strokes can have a deteriorating effect on a rockbreaker hence Rammer rockbreakers are equipped with ideal blow protection as standard to prevent idle strokes.

It's recommended that idle blow protection is switched on during normal operation as the rockbreaker can only be initiated once the tool is pressed against an object. Operators can turn it off when breaking soft material or in demolition applications where it is difficult to apply sufficient feeding force.

Optimal tool angles

It is advised to keep the rockbreaking tool at a 90 degree angle with the surface of the material to be split or broken. If the object moves, or its surface breaks, angle should be corrected immediately. Continued use above or below a 90 degree angle can damage the rockbreaker and wear out bushings faster.

Striking material near an edge of a surface rather than in the centre can also increase rockbreaking efficiency for operators. Avoid striking in the same spot for more than 15 seconds at a time. If the object does not break, or the tool does not penetrate, stop the rockbreaker and change the position of the tool.

Greasing practice

The greasing practice depends on application and operating method. Tool grease consumption is higher in applications where the tool is penetrating and movements are longer than in impact breaking applications where the tool is steadily against thrust ring. Greasing should be increased in dusty applications.

The proper procedure is reached when wet grease is visible about the

length equal to tool diameter on the tool just beneath the housing bottom plate.

Rammer offer special tool lubricants and automatic tool lubrication systems that provide maximum lubrication whilst only using minimum grease amount, prolonging the tool and bushing life and minimising downtime.

Rammer has also developed Rammer BIO Tool Grease, a highperformance biodegradable grease to help support more sustainable rockbreaking operations.

Support that's on standby

Helping operators work more productively and maintain their rockbreakers safely Rammer has published the Rammer Hammer Operation Video on YouTube;

www.youtube.com/watch?app=desktop&v=LblCt5-PvXg Rammer customers enjoy the added peace of mind knowing their products are fully supported anywhere, anytime and customers also benefit from exclusive access to available resources such as operational training, manuals and videos, for all Rammer products.

For more information contact Rammer authorised dealer in WA, Total Rockbreaking Solutions 1300 921 498, sales@trswa.com.au

Mayday Rental's growing iMC fleet

ntroducing CCF WA Member Mayday Rental's newest intelligent Machine Control (iMC) addition - the Komatsu PC210-LCi excavator.

Mayday's team is incredibly passionate about the future of this technology in the construction and mining sectors because they know how it can improve the productivity, profitability, and safety of your jobs.

The business' fleet of iMC machines is growing rapidly so that clients may be provided with the latest and finest machine technology.

Mayday is investing in the future of intelligent Machine Control. Call their friendly and knowledgeable team today on 08 9409 0400 to discuss.

Staying composed: the new EJ composite range

industrv?

CF WA Member EJ says the launch of its composite access covers in Australia is a major development for the Asia Pacific infrastructure industry that brings new advantages and opportunities for project managers, engineers, and specifiers. Engineered and tested to the Australian standards, EJ composite covers are designed to combat and thrive in Australia's harsh, challenging conditions.

Created with a combination of fiberglass and silicone resin, the EJ composite range of covers now offers many benefits that ductile cast iron covers historically couldn't.

- Ergonomic advantage with a lower product weight than traditional covers, transport and handling becomes significantly easier and more cost-effective.
- Corrosion resistant unaffected by the often corrosive environments that can plague conventional cast iron lids, composite covers offer guaranteed longevity.
- No signal interference the synthetic structure of the composite range is, by design, radio frequency friendly for the unobstructed transfer of radio and electronic signals.
- Environmentally friendly the low energy consumption necessary for manufacturing combined with the ability to recycle the lids makes composites very enviro-friendly.
- Risk minimisation of theft base scrap value of composite covers are significantly reduced.
- Colour options wide range of customisable material colours are permanent and UV resistant.

CCF WA Members can send through news at any time for inclusion in our next CCF WA Bulletin. This could include project profiles, new products, appointments, innovations, expert comment + images. Send through your copy and/or photos via email to: ccfwa@ccfwa.com.au.

These unique advantages that composite covers hold come with exciting new opportunities and afford EJ the ability to cater to a wider range of industries.

What does this mean for the

With the addition of composite covers to the market, it is quickly becoming evident that industry knowledge and product insight is integral for suppliers. Despite quality composite products now affording suppliers more choice and flexibility than ever before, traditional suppliers continue to supply purely cast-iron covers while new suppliers will pedal composites only. This is supplier-led thinking, and by its nature is not customerfocused, which is a basic requirement in any modern B2B trading environment. In a market with such a wide selection, customers depend upon supplier knowledge to honestly assess suitability on a case-by-case basis. If a composite-cast iron mix is the best option, suppliers tied to one material over another may not have the expertise to identify that solution or arguably the mindset to prioritize customer needs over internal stock availability.

As one of the world's leading specialist manufacturers in access covers and drainage systems for the last 140 years, EJ is well placed to set the standards for this new solution-driven approach. As an original cast iron specialist, our market knowledge and expertise are already in place, and now we also design, produce, and deliver composite products of the highest quality. Real choice starts with the ability to offer a variety of solutions.

For more information about EJ's composite cover range or to schedule a demonstration of the product, we can be contacted at 9209 2930 or at au.info@ejco.com.

Brooks breaking new ground

Brooks Equipment now stocks the new Series GK range of rock breakers from Italdem, offering high quality tools for all applications.

hen it comes to purchasing construction equipment, most people put a lot of consideration into the quality of the machines that they're purchasing. This is particularly true for large equipment such as excavators, and for very good reason. The quality of the construction equipment you use ultimately affects the efficiency and productivity on your worksite. Machinery is expensive, and you want to know that you've made a sound investment that will stand the test of time. It's also important to give the same consideration to the quality of your machine attachments - such as rock breakers. Rock breakers are specialised tools designed to break and demolish rocks, concrete and other tough materials during construction, mining, quarrying and demolition projects. These attachments use hydraulic power to deliver high impact blows, enabling them to fracture and break hard materials effectively. With such a high impact workload, the quality of your rock breaker attachment is just as important as the machine that you have it attached to.

Brooks Equipment Sales has recently taken delivery of a range of new rock breakers from Italian manufacturer Italdem. Specialising in rock breakers and attachments, Italdem has over 40 years of experience backing up its products. Its Series GK rock breakers use first class materials and intelligent technology that predicts the morphology of the rock being demolished, automatically triggering the adequate force needed by the hammer as it delivers the blow. Hydraulic fluid is used to build up pressure in the breaker, which is then released in controlled bursts to generate the necessary force to break the rock or concrete.

Outperforming other breakers on the market, Italdem rock breakers are equipped with internal sound-proof walls, which contribute to reduced noise. Improvements have also been made to their shock absorbance systems, with springs being substituted with new rubber cushions that absorb vibrations. The simplicity of its assembly also minimises maintenance costs. "We've been importing Italdem rock breakers for three years now," Brooks Equipment General Manager Nathan Fenemer says. "Our clients use them in some of the toughest work environments in the world and we've always received positive feedback."

The smallest Italdem rock breaker available through Brooks Equipment is the GK-75S model. This little breaker has an operating weight of 75kg and is suitable for excavators up to two tonnes. Following on from there, Brooks Equipment sells rock breakers to suit excavators all the way up to 45 tonnes. The GK-4000S model for example, weighs in at four tonnes, with a chisel diameter of 185mm. This large-scale breaker is perfect for heavy-duty demolition and quarry work.

Brooks Equipment General Manager Nathan Fenemer with a GK rockbreaker.

"Our breakers come complete with a mounting plate and pins, a set of hydraulic hoses, chisel tool and blunt tool," Mr Fenemer says. "We've got them in stock now, and we can supply them to any location in Australia. We can even arrange inhouse finance for our customers." To learn more about which Italdem rock breaker would suit your machine, visit the Brooks Equipment Sales website at www.brooksequipment.com.au, or give Nathan Fenemer a call on 1300 276 657.

ENSURE YOUR TEAM EXCAVATES SAFELY

Always use the Before You Dig referral service to protect workers and the community and prevent damage to underground infrastructure. Damage to pipes and cables can lead to service interruptions, delays and costly repairs.

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> For more information, visit www.byda.com.au

Becoming a civil construction trainer

By Scott Baxter, Civil Construction Trainer & Assessor at Civil Train WA.

ften, I am asked, "what do I have to do to become a trainer?" Well... the answer is pretty simple - the most important thing is passion for what you do and patience for passing that knowledge onto others entering or upskilling in our industry.

Qualifications are one thing; yes, you do need to hold the Certificate IV in Training and Assessment and qualifications in civil construction, but the most important thing is experience in the industry. Without experiencing the daily onsite activities, it is impossible to have the knowledge to know what you are talking about and to gain the respect of the workers and supervisors. I have a broad range of skills and experience gained over my many years in both farming and civil.

I grew up on my family's 7000-acre sheep and wheat farm in Cunderdin and Cuballing, where I established a passion for operating and fixing machinery and equipment. I attended Narrogin Agricultural College gaining the skills and knowledge to take over managing all aspects of the farm operations; including staff, contactors, procurement, sales, health and safety, quality, maintenance and operational planning.

My passion for operating and skills in management facilitated a smooth transition into managing earthworks and civil projects. I have run projects consisting of road and bridge construction, carpark culverts, concrete pads for domestic and commercial buildings, hospital re-development in Narrogin and development in Pingelly. I had a passion for training and supervising construction workers, leading me to undertake my Certificate IV in Training and Assessment and gaining employment as a trainer and assessor in the civil construction industry.

I enjoy passing on my knowledge of planning, setting out and undertaking works. The satisfaction of starting a project on an empty block or demolishing a location to build for the future of Western Australia. I am proud to be a part of the civil construction industry, and of my ongoing involvement in the facilitation of skills training to the next generation of civil construction workers.

If you are interested in becoming a trainer and assessor in the civil construction industry, contact Civil Train WA: 08 9417 1980 / courseswa@ccfsa.com.au

n an industry as diverse as civil construction, WA Underground sets itself apart by consistently focusing on quality and integrity. Founded in 2022, this civil construction company has quickly made its mark for its work in underground power and communications.

The story so far

WA Underground was founded by Luke Grant, who has worked in the civil construction industry since he was 18 years old. His experience is wide-ranging, having worked his way up from Cable Layer to Project Manager at various respected companies. His journey led him back to his true passion—working in the field—resulting in the creation of WA Underground.

What matters most

What really sets WA Underground apart is its focus on quality. Whether it's a small excavation or a complex project, the team aims to get it right the first time. And that's not just lip service; it's a commitment backed by 18 years of combined experience in services like drilling, cable laying, and pipe laying, among others.

A partner you can rely on

The team knows that reputation is built one project at a time, and they're committed to making each one count. Reliability isn't just a

MEMBER PROFILE

WA Underground: Doing things the right way

buzzword; it's a promise. Clients can expect a safe, quality service that not just meets but aims to exceed expectations.

Adapting to your needs

WA Underground understands the importance of being flexible and works collaboratively with its clients. They're open to adapting to changing project requirements, always with an eye on delivering the best possible outcome.

More than just work

For Luke and his team, this isn't just a job. It's a craft they're deeply passionate about, and they're always seeking ways to challenge themselves and grow. It's this sense of purpose that has enabled them to build valuable partnerships with industry leaders and to earn a spot as one of Western Australia's go-to civil construction companies. In summary, WA Underground blends experience, reliability, and a deep sense of purpose to offer civil construction services that you can count on. With a humble approach and an eye for quality, they're quietly redefining what it means to be a leader in the field.

President's Breakfast

n Thursday. July 27 we held the 2023 President's Breakfast hosted by CCF WA President Leon Fogliani. The event was proudly supported by Motivation Foundation along with Assignar and CATS Corporation. We achieved our biggest attendance for a President's Breakfast yet, with over 220 of you joining us to hear from our guest speaker, economist Adrian Hart, and catch up with fellow Members. CCF WA thanks all who attended and supported the event, it is always wonderful to see such a strong turnout of new and familiar faces. To view the full album of photos from the event, visit our Facebook page at www.facebook.com/CivilConWA.

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LAWARDS

DJ Mac Cormick Contractors

Swan St Guildford Drainage Upgrade Stage 2 – Microtunnelling & Open Cut

Client: City of Swan

DJ MacCormick Contractors was engaged by the City of Swan to carry out microtunnelling of drainage jacking pipe and open-cut connection works for the second stage upgrade of the Swan Street drainage system in Guildford, in Perth's eastern metropolitan area. The project involved a drive length of 234m of nominal 800mm inside diameter Humes class 4 steel-reinforced concrete jacking pipes via slurry microtunnelling for the main drain – one of the longest single drives of its type.

On completion of the drive, the company was also responsible for the construction of new manholes over the entire pipeline length, as well as the supply and installation of pipes via open trenching to connect manholes and gully pits, together with the reconnection of existing drainage into the newly constructed manholes.

MacCormick undertook all the design work for temporary works including shoring, thrust block, entrance ring and a concrete pad to facilitate the 234m single drive length from launch to receival shaft. Closed face laser guided steerable microtunnelling systems were utilised to minimise overcut and achieve the required 20mm tolerance

for each drive.

The requirement for microtunnelling and the installation of the main pipe to be carried out in a single drive length was to minimise inconvenience to the local businesses and minimise traffic disruption. For similar reasons, and because of high tourist traffic on weekends attracted by Guildford's renowned colonial architecture, all work had to be carried out during weekday business hours in live road conditions with high-level traffic management controls.

Ground conditions for the project ranged from stiff clay to running sand, and the presence of underground streams also resulted in working on river sands and stones.

Bentonite mix was used to minimise friction on the outside of pipe during the drive and minimise jacking loads, with intermediate slurry pumps installed along the drive to ensure flow rates were suitable for slurry discharge back to the surface.

The company undertook the preparation of the necessary environmental, quality and safety management plans in-house and followed up with surface settlement monitoring.

DJ Mac Cormick undertook all the design work for temporary works including shoring, thrust block, entrance ring and a concrete pad to facilitate the 234m single drive length from launch to receival shaft.

Enviro Infrastructure

Leighton Embankment Remediation

Client: Public Transport Authority

Enviro was appointed by the Public Transport Authority (PTA) to remediate a failing limestone embankment, which was causing debris fall and posing a risk to rail operations on the Fremantle Line. The embankment, located parallel to Stirling Highway opposite the Leighton Rail Yard, was cut almost 100 years ago in the early development period of Perth's rail network. Years of weathering had caused sectional undermining and erosion to the limestone rock face. Not only was the remediation footprint located within the structural clearance of the rail line and its high voltage Overhead Live Equipment (OLE), but a redundant 600mm OD asbestos water main was identified as running through the full extent of the 325m long remediation alignment.

PTA had previously engaged two larger contractors to attempt this remediation, but neither were able to successfully manage the rail safety, civil and technical aspects.

Enviro's scope was divided into two stages: stage one involved the management and planning and stage two the construction execution. The requirement to field a team of highly skilled personnel who were not only suitably PTA accredited, but experienced in electrified rail operations, meant detailed management of every detail was needed. Heavy reliance was placed on the site team to deliver complex and high-risk scopes at a high operational tempo.

This project involved heavy and complex civil works within 1m of the PTA OLE, and adjacent to the Fremantle Line up and down mains – an ultra-high risk environment. Utilising their highly experienced in-house rail safety division, Enviro coordinated the rail shutdown and isolations. This included PO3 accredited track protection officers being on back-to-back shifts throughout the shut-down.

Five apprentices were employed for the duration of the project, both in carpentry and civil construction. For the two civil construction apprentices, it was one of their first exposures to the 20t excavators, and they gained invaluable experience in the load-out phases of the project.

Despite extensive logistical and planning challenges, the project was delivered on time, on budget and with zero HSEQ incidents or quality non-conformances.

This project involved heavy and complex civil works within 1m of the PTA overhead live equipment and adjacent to the Fremantle Line up and down mains; an ultra-high risk environment.

Rob Carr & Water Corporation

Belmont Park Optus Stadium DN500 Water Link

Client: Water Corporation

EARTH AWARDS

This project included the construction of a new water distribution main connecting to an existing DN500 water main located in the northern precinct of the Optus Stadium site and micro-tunnelling under the Perth Transport Authority (PTA) rail corridor and Graham Farmer Freeway to connect to a proposed DN400 water main located in the Belmont Park Development site.

Rob Carr was engaged to complete the design and construction of the new water distribution main. This included the design of the permanent asset, shaft design, tunnel design and management of approvals from third party stakeholders, in particular PTA. The existing DN500 MSCL pipeline currently finishes just south of the new train station, within the Perth Stadium Precinct. The end result was a DN500 looped water supply main, connecting to the existing water distribution network. The pipeline provided additional water supply redundancy to the Stadium and the proposed Belmont Park Development.

The proposed pipe alignment extended across an area historically used as a landfill site and a concrete batching site. Both controlled and uncontrolled fill were encountered across the site. The areas

surrounding the project site were known to have remnants of cinders and fly ash from the decommissioned East Perth Power station. This required onerous controls to manage the safety and environmental outputs of the project.

To effectively control the contamination, Rob Carr devised a sophisticated process that involved isolating the return waste from the tunnelling activities. This waste was then carefully disposed of at a licensed landfill facility in Kwinana, adhering to all regulatory requirements and environmental standards. By adopting this approach, Rob Carr demonstrated its unwavering commitment to responsible waste management, safeguarding the environment from potential hazards while successfully overcoming the complexities of tunnelling through contaminated ground.

Rob Carr showcased exceptional expertise in managing a mix of ground conditions along the tunnel alignment, which consisted of Perth formation sand and clay-dominated soil as well as Swan River alluvium. This diverse combination of geological formations required careful planning and adaptability to ensure the successful construction of the tunnel.

The areas surrounding the project site were known to have remnants of cinders and fly ash from the decommissioned **East Perth Power** station, requiring onerous controls to manage safety.

WA Limestone Rottnest South Thompson Seawalls

Client: Rottnest Island Authority

The Rottnest Island South Thomson Seawall project involved the construction of a 150m-long limestone seawall and associated landscaping infrastructure. The works were completed adjacent to the southernmost cottages in the Rottnest Island South Thomson settlement.

The impact on the community during construction was significant due to the large volume of truck movements to be transported by barge to Rottnest Island.

Additionally, the island roadways were narrow with heavy foot and bicycle traffic, as well as substantial noise, dust and vibration impacts for local permanent residents. However, with careful management, WA Limestone Contracting were able to minimise the negative impacts to the island residents and holidaymakers, resulting in a favourable outcome for all stakeholders.

Importantly, the community were provided with a lasting structure which would withstand adverse wind and wave impacts, preventing erosion of the land near island accommodation and infrastructure. Biosecurity measures were carefully implemented for all rock and plants imported onto the island, to ensure the process was consistent with preserving the island's status as an A-Class reserve.

Efficient project planning and procurement was necessary to overcome the site difficulties and the significant global supply disruptions that caused long lead times for various materials, such as geotextiles and coir matting.

The project was the first seawall revetment to be installed on the island for the purpose of preserving island infrastructure. While there are some established rock structures present on the island, these are primarily used for boating facilities, and not for infrastructure protection.

WA Limestone researched a range of cost and delivery outcomes. It was agreed that 8-wheel trucks would deliver rock via the barge to the site. This solution delivered considerable savings compared to bagging the rock and delivering it to the island.

There are significant infrastructure upgrade projects planned for Rottnest which will require rock importation from the mainland. Therefore, the experience gained will provide greater confidence in the effective delivery of projects in the unique island environment. In broader terms, the project methodology provides a guide to how future transport-intensive civil projects can be conducted on the island.

BMD Constructions

Cecil Avenue East Upgrade

Client: City of Canning

BMD was engaged by the City of Canning to upgrade Cecil Avenue East through major road and landscape works as part of Perth's Canning City Centre Regeneration Program.

Cecil Avenue East continued the metropolis vision of Cecil Avenue West with project works including dedicated bus lanes that could also be used by cyclists and taxis, wider footpaths, mature trees to increase the tree canopy, rain gardens, smart infrastructure, and interactive artistic features for the public to enjoy.

BMD was involved in various innovative works across the life span of the project including the use of Geogrid to counter very soft unsuitable ground materials, luminous aggregate to provide additional light to the artistic concrete frogs, filigree pole lighting, integrated lighting control system, audio systems and smart hubs with Wi-Fi and charging ports.

BMD also achieved environmental best practice through planting mature trees, re-use and recycling of demolition materials and the installation of rain retention basins and gardens.

This project was adversely affected by both inclement weather conditions and supply issues due to COVID-19, which resulted in time and cost pressures on the project. BMD worked proactively with all project stakeholders, and in particular the City of Canning to mitigate as best as possible the impacts of these external factors, all the while not compromising on the quality of the works. Traffic management was identified as a key project risk. Considerable time was spent developing a staging plan which allowed the works to be constructed in five key phases. This ensured traffic was still able to flow on Cecil Avenue and access was kept to all businesses on Cecil Avenue and surrounding roads during construction.

Due to the complexity of the project and the high standard of works required, the focus was on completing the project as quickly as possible without compromising on quality.

DJ Mac Cormick

Iron Bridge Concentrate & Return Pipelines – Microtunnelling

Client: Fortescue Metals Group

DJ MacCormick Contractors completed a total distance of 668.5m microtunnelling on a critical aspect of iron ore miner Fortescue Metals Group's \$US3.9 billion Iron Bridge magnetite development in the Western Australian Pilbara region.

The contractor undertook the twin crossings of Humes 1000mm reinforced concrete jacking pipe for the concentrate and return water pipelines linking the new mine 110km south of Port Hedland with the port.

The 1000mm drives included two drives of 46m under Utah Road, the main arterial access route to the Finucane Island port, two of 80m under FMG's rail line and two of 152m under a BHP rail line at Port Hedland. All crossings were undertaken under live rail conditions on the lines, which are in constant use for trains carrying iron ore from various mine sites to the port.

MacCormick utilised the Iseki closed face slurry shield microtunnelling system for its operations in the port environs, working in wet clay at depths that ranged from 4m to 6m cover. The launch and receival shafts for all twin drives were designed to allow both drives to be undertaken via a singular shaft. A seventh drive of Humes 1800mm reinforced jacking pipe was also completed over a distance of 112.5m under the BHP railway that passes close to the Iron Bridge mine site, utilising a Herrenknecht AVN 1600 closed face slurry shield microtunnelling machine, equipped with an extension kit along with a rock cutting wheel. The bentonite mix design was based on the clay and rock drives encountered on site and was established to ensure it did not exceed the safe jacking loads of pipes. Following the completion of the drives, a separate grout mix design was used through the grout ports. All drives were completed with no settlement at surface, including at all rail crossings and road crossings.

The project involved a significant amount of pre-planning including risk assessment workshops, several management plans, inspection test plans and numerous safety workshops and on-site work based contingency demonstrations. Surface settlement monitoring was undertaken.

DJ Mac Cormick completed a total distance of 668.5m microtunnelling on a critical aspect of iron ore miner FMG's \$US3.9 billion Iron Bridge magnetite development in the Pilbara.

Ertech Onslow Boating Precinct Stage 1A

Client: Department of Transport

The Onslow Boating Precinct Project is a multi-stage upgrade to the boating facility and supporting infrastructure which the Department of Transport has scheduled to be delivered over several years. Following an open tender for the works, Ertech was engaged to deliver Stage 1A of the multi-stage project.

The scope of Stage 1A included the dredging of 45,000cu.m. of material from Beadon Creek to facilitate the construction of a rock wall revetment, two new boat ramps, and a floating pontoon holding jetty. The package also includes the installation of a new upgraded stormwater drainage line, gross pollutant traps, sealed carpark, new carpark exit driveway, solar-powered street lighting, and associated road furniture.

Variations to the scope included changing of the location for the spoil, additional LED lighting, additional access to the car park, and a protection bund to the supply base.

Prior to commencing the project, Ertech reviewed the site geotechnical information and program and recommended an alternative construction methodology involving a temporary earth bund, complete with active wellpoint and open-pump dewatering systems, to protect the work area from the influence of tides. This allowed work to be performed up to 8m below high tide level, with 70% of the dredging and rock revetment scopes protected by the bund and able to be completed in dry conditions. Additionally, the entirety of the boat ramp construction was performed in the dry, which hugely improved safety and efficiency.

When conventional methods were struggling to break through the caprock, Ertech implemented an innovative change to the underwater rock removal. This involved utilising a trenching machine to cut longitudinal and transverse slots in the 3m-thick calcarenite rock shelf while positioned on the bund. The trenching increased the number of exposed rock faces that could be broken. When combined with traditional rock breaking and ripping techniques, it greatly reduced the required breakout force and enabled rapid rock removal. Based on Ertech's performance, the team was subsequently awarded Stage 1B and Stage 1C.

Ertech recommended an alternative construction methodology involving a temporary earth bund, complete with active wellpoint and open-pump dewatering systems, to protect the work area from the influence of tides.

SRG Global

Tropicana Gold Mine – Resurfacing of Aerodrome

Client: AngloGold Ashanti

It is not often that a project is delivered exactly as planned, with no last-minute changes to either schedule or budget.

SRG Global delivered the upgrade works at the Tropicana Gold Mine Aerodrome to the exact requirements of the client and exactly as planned.

Mine operator AngloGold Ashanti Australia (AGAA) contracted SRG to undertake the upgrade works at the Aerodrome, consisting of: apron approach extension; resealing of all pavements; sealing of jet blast areas; reworking and sealing of runway shoulders; all bulk earthworks and other civil works related to the upgrade.

Associated works included the removal and reinstatement of runway lighting, line marking and application of fuel resistant seal. From the outset, it was agreed that this project was going to challenge the team responsible for the delivery of the upgrade works. The programme was extremely tight, the location of the project site was remote (about 1,000km inland to the east of Perth) and the specific requirements for the seal design was a challenge.

SRG Global recognised that the success of this project was dependent on three key factors: detailed planning; dependable subcontractors

and material suppliers; and an innovative seal design. These three key factors were underpinned by strong communication and collaboration between the client, all contractors and suppliers.

The planning of all material deliveries to site was identified early on as a major risk to the timely delivery of the project. Long haul distances with travel time of around 6 hours one-way between Kalgoorlie and the project site, across large sections of unsealed roads, had the potential to cause huge delays in the project delivery.

Careful planning of material requirements, ensuring arrival on site at specific times of the construction process, was required, while fatigue management played an important role across all delivery schedules. SRG Global delivered a fit-for-purpose aerodrome upgrade for AngloGold Ashanti through an innovative design and programming process that ensured all works were completed within the required timeframe, budget and to the high standard expected by the client.

It is not often that a project is delivered exactly as planned, with no last-minute changes to either schedule or budget, but despite major challenges, that is exactly what SRG Global was able to achieve.

BMD Constructions

Replacement of Bridge 0015A over Hotham River

Client: Main Roads Western Australia

BMD was engaged by Main Roads WA to undertake the construction of Bridge 0015A over the Hotham River, situated near Crossman in the Wheatbelt region. The Hotham River Bridge plays a pivotal role in connecting travellers, facilitating the smooth flow of nearly 3000 vehicles daily, with 19 percent of these being heavy vehicles. The project encompassed a diverse scope of work, including: clearing and topsoil strip on 2.72 hectares of land; construction of the new 88m bridge with 12 Tee-roff beams on three piers and 37 cased piles; road embankment construction spanning 7013cu.m; 11,600sq.m of roadworks; culverts and drainage works; road safety barrier installation; pavement marking and signage; and the decommissioning of the existing bridge.

Originally slated for delivery during the dry season when the riverbed was dry, unforeseen material and supply delays posed challenges. BMD showcased exceptional innovation and agility by devising an alternative solution to progress with the program during the region's wet season, ensuring the project's continuity. The team faced additional hurdles amidst the COVID-19 pandemic, with closed borders causing significant delays in obtaining critical materials from international and local suppliers. Despite these obstacles, BMD's engineering expertise and innovative program modifications ensured minimal impacts on the overall project completion date and budget, while upholding health, safety, environment, and quality excellence throughout.

One of the standout achievements was BMD's commitment to environmental preservation and protection of local fauna. As construction activities coincided with the chocolate wattled bat breeding season, the team employed high-quality environmental tactics and a revised 'from the top' demolition methodology, enabling the successful relocation of the bats while preserving the population. BMD employed various cutting-edge techniques to optimise cost effectiveness for the bridge and road works. Pile driving during the winter months and proactive adjustments to the approved program, along with sophisticated construction techniques to address latent piling issues, contributed to a seamless execution of the project.

BMD showcased exceptional innovation and agility by devising an alternative solution to progress with the program during the region's wet season.

RJV

Princess Margaret Hospital Demolition & Remediation

Client: DevelopmentWA

The Subiaco East Redevelopment represents the most significant urban infill project in modern Western Australia. The demolition and remediation of the Princess Margaret Hospital site was a key milestone along Subiaco East's pathway to becoming a new landmark inner-city residential and mixed-use precinct, and one of the largest projects of its kind undertaken in an urban setting in WA. It was also one of the most high-risk, requiring significant asbestos removal, innovative solutions for managing its technically challenging location in close proximity to residential areas, and the sensitive treatment of a range of important heritage elements.

With 56,000 tonnes of concrete and bricks to be removed from the site, as well as 15,000 tonnes of steel, many months of planning went into the careful management of the demolition process. From the outset, minimising disruption to stakeholders and residents was identified as critical to the successful delivery of the project. RJV dedicated considerable resources to program sequencing to allow for a smooth flow of traffic and to mitigate noise and dust impacts to stakeholders and the community. To reduce interference to local

traffic flows, RJV managed up to 30 trucks entering and leaving the site on any given day.

Managing dust was cited as a key concern for nearby residents early in the consultation process and special care was taken to limit the spread of dust using water mist cannons and scaffold containment sheeting attached to the external buildings. Materials were not crushed on-site, but were broken up into manageable pieces and transported by truck to recycling facilities. About 99.5 percent of materials were recycled or repurposed.

To adequately manage the extent of asbestos onsite, various innovative and advanced techniques and methods were employed. To safely encapsulate multistorey buildings (some reaching over five stories high with approximately 1200 square metres), innovative shrinkwrap technology was used. Rarely used in Australia, this approach enabled the entirety of the asbestos-containing buildings to be fully encapsulated and maintained under negative air pressure whilst permitting decontamination and site clean-up.

months of planning went into the careful management of the demolition process.

SRG Global Merredin 42ML Tank

Client: Water Corporation

The Merredin Water Storage Tank project involved the design and construction of a new 42 million litre potable water tank on the historic Goldfields pipeline to improve water quality and security to the area.

The existing Merredin Reservoir was an open bituminous concrete lined reservoir, constructed in 1969. This reservoir was one of several along the main pipeline that was open to contamination, and also compromised the ability of the storage and distribution system to maintain an adequate disinfectant residual.

The scope included the design and construction of a 42ML concrete wall and tank roof approximately 70.4m in diameter and 13.5m high – the largest ever constructed by SRG Global – as well as a chemical dosing facility, civil works, structural, pipework, mechanical, electrical, instrumentation, controls, security and SCADA works. The use of multiple waterproofing layers provided a superior level of protection, ensuring the tank was leak-free at commissioning and will exceed its intended 100-year design life.

Using a mixture of advanced concrete techniques including flat slab post tension, multistrand post tensioning, precast concrete, prestressed concrete and conventional insitu formwork and reinforcement, the team leveraged the best of concrete practice to achieve a world-class result. Using a specialist facility in Perth, all panels, columns, beams and roof panels for the project were pre-cast in a factory-like environment rather than on site.

The requirement to place the base slab in one continuous pour necessitated augmenting the local supplier's fixed concrete plant with an onsite mobile plant. SRG's concrete supplier, Holcim, rose to the challenge and the 700 cubic metre pour was completed as planned, resulting in a very high-quality floor slab with no leaks.

SRG was required to prepare a construction sequence to minimise disruption to the existing pump station and reservoir operations. Specific Principal requirements for the timing of construction for certain sections of the works were specified in the contract, and SRG complied with all of the allocated shutdown windows.

The tank passed all leak tests upon practical completion and required no rework. SRG Global delivered the tank and associated works ahead of schedule and within budget – despite scope increase through changes in design as well additional pipework.

The scope included the design and construction of a 42ML concrete wall and tank roof approximately 70.4m in diameter and 13.5m high, the largest ever constructed by SRG Global.

WA Limestone

Port Hedland Seawalls

Client: Town of Port Hedland

The Town of Port Hedland engaged WA Limestone Contracting to construct three seawalls with a combined length of 1km around Port Hedland. The work scope included demolition; excavation; placement of geotextile, granite filter and granite armour; concrete path construction; and rehabilitation of landscaping areas.

The biggest challenge for the project was navigating the strict environmental requirements across the sites, with nesting turtles and birds impacting the project delivery schedule. Additionally, a culturally significant boab tree was identified at the Richardson St site which required careful planning and attention so it could be safely relocated. The tree was successfully transplanted and is now thriving at its new location.

WA's North West is unique in its extreme tidal variations, which regularly exceed 6m of water level differential within a 12-hour period. WA Limestone Contracting managed this aspect through staged construction of the seawalls, by prioritising the lower wall construction while the tide was out, and relocating to construct the higher areas of the seawall when the tides were high. Careful monitoring of the tides allowed daily construction planning to take place, ensuring full equipment utilisation, whether the tides were high or low.

The impact on the community during construction was significant due to the large volume of rocks that needed to be transported through residential areas. Additionally, there was a substantial volume of material that was shifted to site for the rock installation which resulted in considerable noise, dust, and vibration.

With careful management, WA Limestone Contracting were able to minimise the negative impacts to the residents, resulting in a favourable outcome for all stakeholders.

Despite the many constraints, the project was successfully delivered under a revised timeline, to a high standard, within the budget requirements. The town will now be protected from future erosion events during high sea conditions, while construction impacted areas have been rehabilitated with native vegetation regrowth.

Careful monitoring of the tides allowed daily construction planning to take place, ensuring full equipment utilisation, whether the tides were high or low.

Ertech Geomarine JV

AMC 1 Wharf Extension and New Finger Wharf Project

Client: DevelopmentWA

The AMC 1 wharf extension at the Australian Marine Complex Common User Facility (AMC CUF) increases berthing capacity for users of the CUF.

Stage 1 of the project involved the design and construction of a 153m wharf extension to AMC Berth 1, associated berth pocket deepening alongside the wharf extension, a new substation and services building, upgrades to the existing 50Hz and 60Hz vessel power supply system for ship to shore servicing, and upgrades to the fire water system, potable water, and sewer supply services to vessels. These works were constructed adjacent to an existing operational

wharf.

In addition, a new finger wharf was designed for the proposed Berths 7 and 8. The finger wharf will further extend the capability of the AMC CUF to accommodate larger navy vessels and full cycle docking of submarines.

Development WA engaged Ertech to deliver the design & construct contract. Ertech formed an internal joint venture with sister company Geomarine. Together, the businesses leveraged their combined in-house civil, electrical, and marine construction capabilities to successfully plan, design and execute the project.

The EGJV developed a methodology to construct the wharf almost exclusively with land-based plant, apart from installing the dolphin pile and dredging works, both of which were performed with marine plant. Performing the majority of the work from land-based plant negated the need for costly marine plant and reduced the risk from the effects of variable sea conditions, which notoriously hampers productivity on marine projects. Eliminating the need for a piling vessel also eliminated interface risk with active shipping movements within the CUF. Two purpose-built piling gate systems were designed and constructed, and were configured to optimise pile installation efficiency.

The design of a composite precast/insitu concrete wharf deck eliminated the need for complex suspended falsework/formwork. The design of the precast concrete elements was geared with a focus on constructability and fast sequence of assembly.

Based on EGJV's performance on the project and the availability of key expertise, DevelopmentWA has since awarded EGJV additional scope for the AMC2 Deck Infill.

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Monford Group

Centre for National Resilience

Client: Multiplex

The Centre for National Resilience was developed at the height of the COVID-19 pandemic, as part of a coordinated national approach to respond to Australia's critical need for a purpose-built quarantine accommodation facility for returning overseas travellers. As a major works contractor for the \$200 million, 500-bed centre, Monford delivered the bulk earthworks, inground services, civil works and roads and formwork structures. The scope of Monford's work included site clearing, vegetation removal, grubbing including management and disposal of generated materials, preparation of subgrades for roads and footpaths, and earthworks for the accommodation buildings and other service buildings. Other works included trenching and installation of pipework, conduits, pit and electrical/hydraulic/fire services; concreting of footings, pads, maintenance holes and shafts; and civil works for carparks, roads and culverts including temporary works, and stormwater drainage.

The project schedule for all three packages of works was six months, which in itself posed challenges with interstate and international borders being closed and COVID cases in Western Australia reaching their peak during peak construction.

Monford completed their scope of works within 6 months, contributing 85,570 man-hours, performing 144,323sq.m. of clearing

and grubbing, installing 98,000sq.m of limestone capping, and pouring 9.7km of concrete footpaths and 3,000cu.m of concrete slabs. Monford also installed a total of 91km of inground services. This included 7.3km of storm water drainage pipes, 3.8km of sewer pipes, 2kms of fire water mains, 26 fire hydrants, 22km of communications conduits as well as 56km of electrical conduits. Within Monford's scope, 39,000sq.m. of bitumen sealing and asphalt were provided as well as 6.3km of curbing. Monford also installed 117 storm water pits, 335 electrical pits, 306 communications pits and eight sewer pits. With state and government involvement and influence and the backdrop of a global pandemic, Monford Group knew going into this project that it was more complex than any previous project, due to the number of stakeholders involved and the urgency in completing the project.

To manage potential delays, Monford conducted a comprehensive risk assessment at the project outset and developed contingency plans. The schedule was regularly reviewed and Monford updated the project schedule to identify potential bottlenecks and make timely adjustments.

This attention to detail allowed Monford to complete their entire scope of works within the 6-month schedule.

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NEWest Alliance

Comprising DT Infrastructure, CPB Contractors & Public Transport Authority

BP KWOL Pipeline Relocation

Client: Public Transport Authority

The Thornlie-Cockburn Link passenger rail will be built in the existing freight corridor between Thornlie Station and the Kwinana Freeway. This will involve relocating the freight lines to the northern half of the corridor to make room for the passenger lines in the southern half.

To make way for the new rail line, 12.6km of the existing BP Kewdale White Oil Line (KWOL) needed relocation. The pipeline, which transports fuel from BP's Kwinana refinery to Perth Airport, is situated within a narrow brownfield railway corridor. An extensive review of design and construction options was undertaken to maximise efficiency while minimising the community and environmental impacts.

The final design solution required 11.5km of horizontal directional drilling (HDD), with seven crossings between 1.1km-1.4km in length, and four crossings between 600m-900m. Each was at a depth of 25m within a narrow 10m corridor parallel to the operational rail, and in many cases near residential properties. This involved 12 months of drilling work, including eight months of around-the-clock work with up to three 250-tonne drill rigs. This was one of the largest continuous HDD installation campaigns ever completed in Australia. There were also two 50m microtunnelling/pipejacking crossings of

operational passenger and freight rail lines.

The works included installation of a truss bridge over the environmentally and culturally sensitive Canning River site in October 2022. Works were carried out during night-time PTA passenger rail possessions, using a 750-tonne crane and a specially manufactured remote-controlled counterweight.

Twelve main line valve pits were installed along the alignment, with some as close as 500mm to the existing BP KWOL pipeline. Four golden welds were successfully completed during a 30-hour shut and hand-over of the asset for commission.

The successful delivery of the BP KWOL Pipeline relocation was heavily influenced by the exemplary project and construction management approach of the NEWest Alliance. The Alliance demonstrated meticulous planning and execution, adhering to major scheduling milestones and budget constraints. Their ability to adapt to unforeseen challenges ensured the project's steady progress and timely completion. Throughout the project, the Alliance's unwavering focus on technical excellence and adherence to industry best practices resulted in a relocation that not only met but exceeded the client's expectations.

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SRG Global

Mardie Salt & Potash Project - Initial Earthworks, Trial Pond & Ponds 0, 1 & 2

Client: BCI Minerals

BCI Minerals' Mardie Salt & Potash project is the largest salt project in Australia and the third largest in the world, with the site stretching across 132sq.km of impermeable mud and salt flats. The facility will produce more than 5 million tonnes of high purity, industrial-grade salt per annum from seawater via solar evaporation, crystallisation, and raw salt purification. Further processing will also produce 140,000t per annum of fertiliser-grade Sulphate of Potash. From the outset, SRG Global recognised that this project would present challenges and complexities not usually encountered in a greenfield large-scale infrastructure project due to the sheer scale of project site, requiring extensive haul distances; the topography, with low-lying mud and salt flats prone to severe periodic cyclonic overland flooding and frequent ocean inundation; and the highly variable ground conditions. In addition, high-pressure gas pipelines of national importance traverse the site.

SRG Global agreed to a scope of works comprising two Separable Portions: construction of a large-scale trial pond (an earthen embankment constructed to hold sea water) with a causeway to access the works; and construction of the initial evaporation ponds (0, 1 & 2). Construction of the trial pond provided a transparent, open book process to build up pricing and delivery methodology while assessing value for money. Following the successful completion of the trial pond, SRG Global delivered Ponds 0, 1 & 2, covering about 24 sq.km in total. Once filled, it is expected that some 40 gigalitres of seawater will have been pumped into Pond 0, and gravity fed into ponds 1 & 2.

The team quickly realised the importance of prioritizing the construction of the seawall/causeway to protect future work areas from ocean inundation. They constructed a 26km seawall and scheduled all works around tidal movement. On average, the team only had approximately three to four hours per day to work in the impacted tidal zones.

The initial design used scrapers to construct the seawalls (causeways) and levees. On arrival at site, the SRG team quickly realised that the ground was too soft, and scrapers could not be used. Instead, they used excavators and 40t moxys for carting, while dozers spread the material on the work front.

The 132sq.km facility will produce more than 5 million tonnes of high purity, industrial-grade salt per annum from seawater via solar evaporation, crystallisation, and raw salt purification.

Whittens

Iron Bridge Project, Earthworks and Concrete – Port, Concentrate Handling Facility (CHF) & Concentrate Diversion Pond (CDP)

Client: Fortescue Metals Group

As part of the ambitious Iron Bridge Project, Whittens was engaged to deliver the earthworks and concrete scope of the Concentrate Handling Facility (CHF) and Concentrate Diversion Pond (CDP) at Anderson Point in Port Hedland. Both the CHF and CDP are key facets in delivering 22 million tonnes per annum of high grade 67% Fe magnetite concentrate from the Iron Bridge mine, 145km south of Port Hedland.

The scope included the bulk earthworks, drainage structures, roadworks, detailed earthworks, piling, and concrete installation works related to the CHF, and associated infrastructure required for the project dewatering and in-loading circuit, such as the CDP. In total, Whittens self-delivered over 320,000 cubic metres of earthworks and 10,700cu.m of concrete, as well as the management of a multitude of specialist subcontractors which included dewatering works, piling works, traffic management implementation, sealing and asphalt works, road line markings, electrical works, fencing works and services relocation.

Every project carries its own unique challenges and complexities, and for the Iron Bridge project, completing critical works during the pandemic and its aftermath were the most challenging aspects. Whittens overcame these challenges through detailed planning and efficient execution.

During the tender process, Whittens identified that smarter scheduling, efficient methodologies and use of alternative materials could be used to achieve cost savings for the client. Whittens proposed many optimalisations that were accepted by FMG and applied during project delivery, including: redesign of piles, with reductions in numbers and lengths of piles; value engineering by using site won material instead of imported general/mass fill material; alternatives to allow the improvement of the dredged material for use in the upper layers of common and select fill, using cement stabilisation or a blended product; and the use of straight (tangential) forms as an alternative to radiused forms for the large diameter pile caps.

Whittens identified that smarter scheduling, efficient methodologies and use of alternative materials could be used to achieve cost savings for the client.

Leach Welshpool Alliance

Comprising Georgiou Group, Main Roads Western Australia, BG&E, and Golder & Associates

Leach Highway and Welshpool Road Interchange

Client: Main Roads Western Australia

This project addressed one of Perth's most congested and dangerous intersections, used by 55,000 vehicles a day including oversize, overmass vehicles. Project scope included: a new bridge taking Leach Highway over Welshpool Road; a shared path along Leach Highway from Sevenoaks Street to Orrong Road; and a new bridge taking Leach Highway over the Armadale rail line.

Main Roads WA's project delivery methodology involved a sole-source Alliance Development Agreement (ADA), followed by a Project Alliance Agreement (PAA). The unusual ADA phase created the opportunity for the early involvement of constructor Georgiou Group, designer BG&E, and geotechnical consultant Golder & Associates with Main Roads. This resulted in a range of beneficial value outcomes, including earlier design enhancements - such as a more efficient and sustainable roundabout design replacing the original signalised diamond design for Welshpool Road under the new bridge. The roundabout has reduced fuel use and improved traffic flows, improved safety outcomes, increased traffic-carrying capacity, and removed the need to acquire more land from adjacent businesses. Construction challenges and solutions included a non-traditional

three-span post-tensioned bespoke tapered bridge, over live rail. LWA created innovative temporary support systems across each stage of the bridge installation.

LWA meticulously staged 32 traffic switches to ensure two lanes each way remained active on Leach Highway throughout construction.

A strong alliance culture was maintained, with eight surveys of the project team returning an average above 80% for collaboration, innovation, decision influence, transparency, trust, team integration, best for project and alliance identity.

As a major industry initiative, LWA designed and delivered a successful pilot training program to increase the engagement, development and retention of long-term unemployed people on infrastructure projects, aiming to create a sustainable pipeline of skilled people to support ongoing infrastructure delivery. A sub-alliance with Westforce Construction was established to develop Westforce's structures capability and to support their aspiration to achieve a higher prequalification level with MRWA (from B2 to B3).

Construction challenges and solutions included a non-traditional three-span post-tensioned bespoke tapered bridge, over live rail.

Mitchell Extension JV

Comprising BMD Group & Georgiou Group

Mitchell Freeway Extension

Client: Main Roads Western Australia

The Mitchell Freeway Extension from Hester Avenue to Romeo Road delivered a new, high-standard, north-south transport link in Perth's northwest

The scope of work encompassed the 5.6km extension of the Mitchell Freeway, duplication of Wanneroo Road, new freeway access points at Lukin Drive, Butler Boulevard and Romeo Road, shared paths, underpasses, and a bridge over the Butler railway.

The 5.6km extension and new interchanges will improve access and reduce congestion for people living in Perth's northern suburbs and is part of a group of infrastructure improvements, which will support the expansion of Perth's fast-growing outer suburbs. Approximately 34,500 vehicles are projected to use the freeway extension each day through to 2031.

To deliver the design, MEJV joined forces with GHD and BG&E as a robust team with demonstrated Main Roads experience. The successful design focused on reducing project costs to maximise the potential opportunity of implementation of optional works within the Main Roads budget. This allowed the project to successfully

be delivered in budget with two major scope additions during the program: Butler Avenue freeway intersection and the duplication of Wanneroo Road.

In addition, the design and construction methodology submitted as part of the tender minimised impacts on the national park and limited impacts between the freeway and Public Transport Authority (PTA) infrastructure.

A priority focus of the project was creating a sustainable road network. The joint venture engineered innovative solutions to reduce the project's carbon footprint, such as the first successful trial of sustainable asphalt EME2 for client Main Roads WA, and shared materials with METRONET's Yanchep Rail Extension project to reduce waste.

Showcasing exceptional innovation and agility throughout the devised program, the joint venture employed cutting-edge techniques to optimise cost effectiveness for an on-time delivery of a seamlessly executed project with two major additions to the original scope.

Webuild-NRW Joint Venture

Forrestfield Airport Link

Client: Public Transport Authority

The Forrestfield-Airport Link (FAL), now known as the Airport Line, has provided a new rail service to Perth's eastern suburbs and has connected rail passengers to the airport for the first time. Construction of FAL involved two tunnel boring machines (TBMs) excavating directly under the airport's runways and the Swan River, from High Wycombe to Bayswater.

Perth has notoriously difficult ground conditions, meaning that any tunnelling was always going to come with challenges. Two major geological units had never been worked in before in Perth: the Osborne Formation, which had low to high clogging potential and low to medium plasticity; and overlying the Osborne Formation for about 5km of the project alignment, the Ascot Formation – a reworked beach rock deposit which had not previously been constructed in.

Two Variable Density Mixshield TBMs built specifically for the project were used to dig the 7m-diameter twin bored tunnels. The TBMs needed to be capable of tunnelling through sand, rock and clay, utilising dual-mode technology. The machines were capable of operating in two modes: earth pressure balance mode, using a screw conveyor to control the excavation face pressure by regulating the amount of spoil in the machine cutterhead in order to dig through the clay and alluvial muds that were experienced under the Swan River; and slurry mode, which used pipes and fluid to control the pressure in the machine excavation chamber before turning the excavated material into a slurry and pumping it out, in order to dig through the variable sands and gravels experienced under Perth Airport. At their time of launch, the TBMs were two of only nine of their kind globally. Guided by Webuild-NRW's tunnelling experts, the two TBMs tunnelled for 8km, making the structures the longest tunnels ever built in Western Australia. The machines successfully travelled the entire journey underneath the water table, at depths of up to 26m, below the Swan River and under Perth Airport's operational runways without disruption to aviation operations.

The TBMs each spent approximately 900 days underground, placing more than 9000 concrete tunnel lining rings that had been manufactured in a local facility.

The project also delivered three new stations, three emergency egress shafts, 12 cross passages, two dive structures, rail infrastructure and systems.

The project did not stop at all through the COVID pandemic, and Webuild-NRW managed the global supply chain issues while delivering the project within budget.

Welcome new members

Macmahon Contracting

www.macmahon.com.au

Macmahon provides mining, civil construction, and rehabilitation services to the resources sector. The company's unique combination of infrastructure and highly qualified mining professionals means it is equipped for any size construction and rehabilitation job. Macmahon has a proven track record of providing high quality, economically viable solutions to an extensive range of clients.

Busselton Civil

www.bcpgroup.com.au

BCP Group is a diversified contractor, established in 1997, providing a range of services to the construction, maintenance and events industries throughout WA from our depots in Bunbury, Busselton and Albany. BCP's experienced team, large reliable fleet and supporting infrastructure allow us to provide a range of services and undertake both large and small projects that meet our clients requirements in a safe and timely manner.

PGC Resources

www.pgcresources.com.au

PGC Resources is an Australian owned business providing specialist labour solutions to the crane hire, mining, oil & gas, marine and construction industries. Established in 2012, PGC quickly developed its service offer in providing skilled labour in niche areas, specialising in providing crane and rigging labour to the crane industry as well as shutdown, construction and maintenance workforces to the resources sector.

Unicorn Risk Solutions

www.unicornrisk.com.au

Unicorn Risk Solutions is unified by a shared vision to deliver innovative, cost-effective, comprehensive insurance solutions that deliver better outcomes for our clients. Our people take complex scenarios and deliver simple, powerful solutions in return - we believe there is a 'win-win' to be found in every situation.

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www.vphc.com.au

Versatile Plant Hire & Contracting is a team of friendly, experienced and reliable earthmoving collaborators based in West Kalgoorlie who will get your job done right. Versatile is proud of its experienced, skilled and diverse team across all sides of the business and enjoys building relationships with clients. With an excellent track record, the best maintained equipment available, and specialty equipment for all types of earthmoving jobs, no job is too big or too small.

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