



PERTH FREEWAYS

WE SEE THINGS DIFFERENTLY

Delivering progressive infrastructure to transform Perth's connectivity





OUR EXPERIENCE

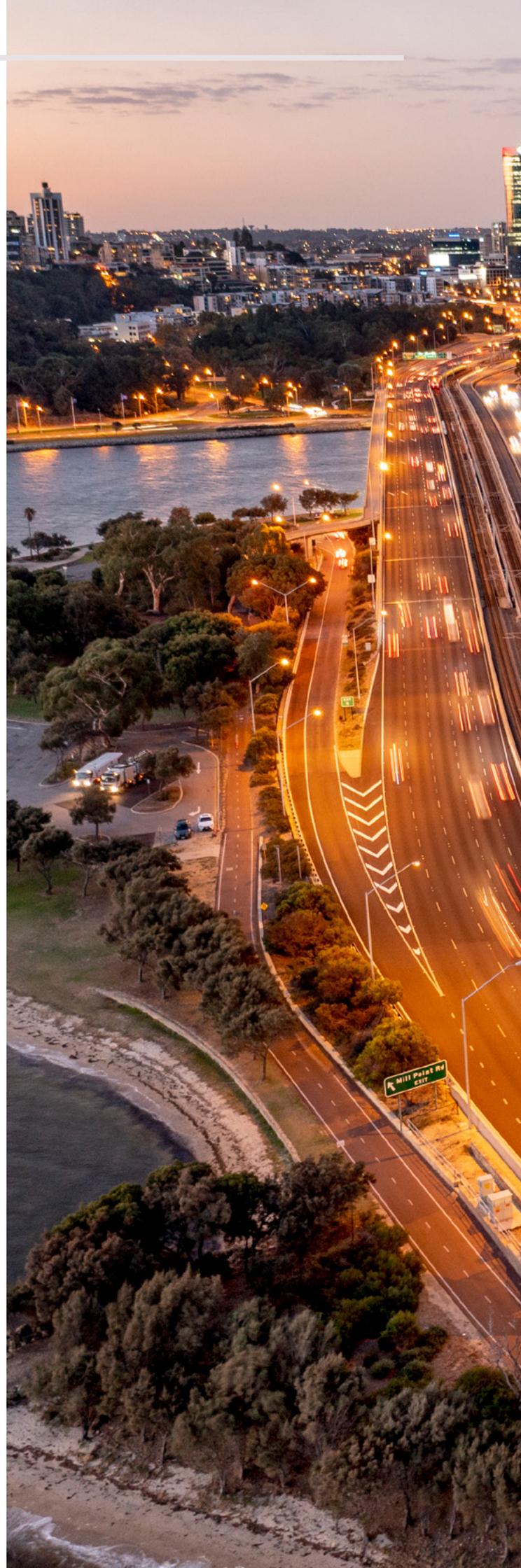
IN TRANSFORMATIVE FREEWAY CONSTRUCTION

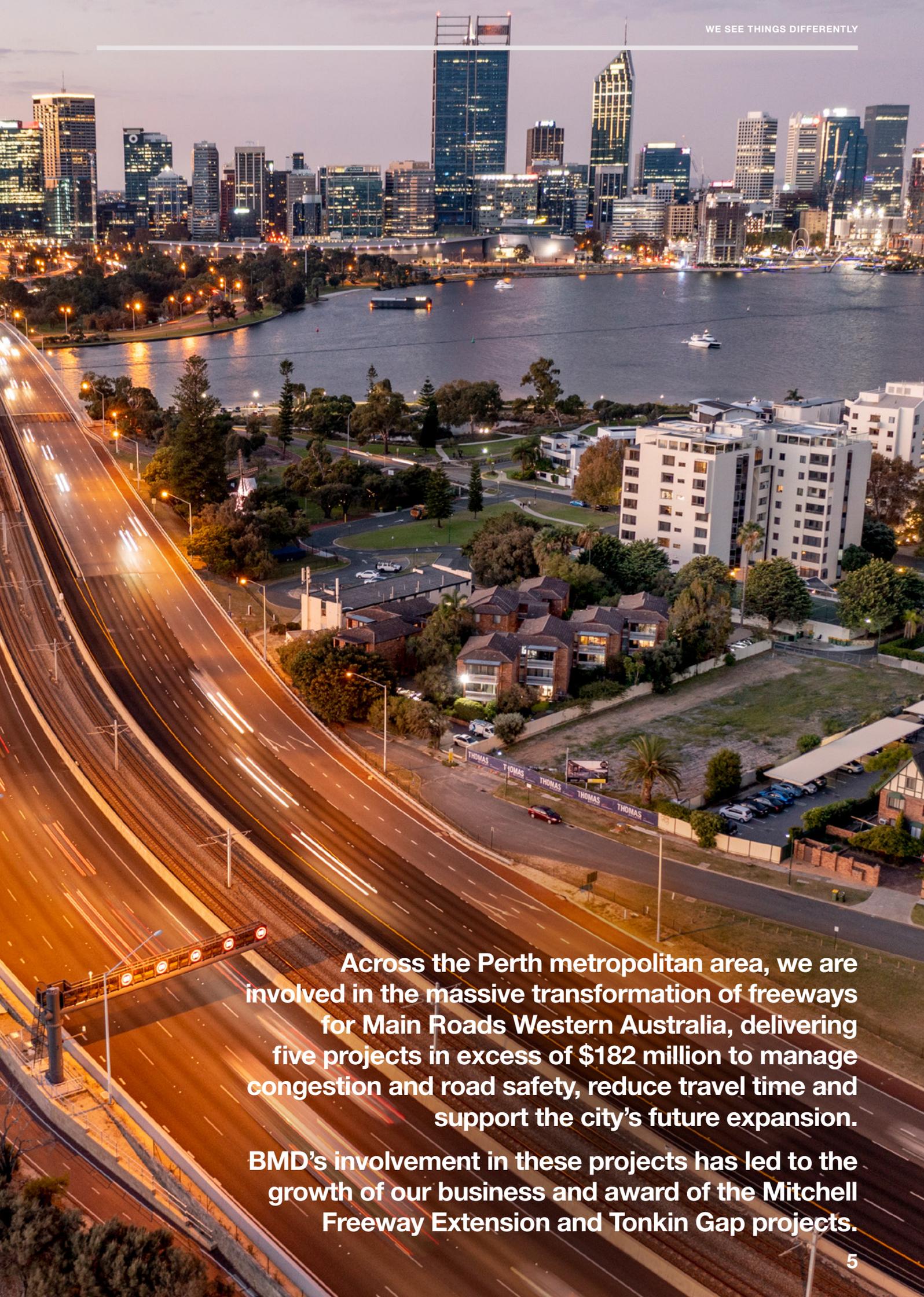
BMD delivers complex transport infrastructure projects, ranging in value and contractual arrangement. We are experts in engineering, intelligent transportation system (ITS) technology, roads and highways, bridges, structures and tunnelling works to deliver solutions which connect communities.

We harness the expertise of our people and use technology to minimise environmental impacts and recycle materials to achieve sustainability targets, and deliver to current construction requirements. Our tireless efforts in communicating with stakeholders keeps residents and businesses fully informed and connected during our essential construction works.

Our people provide comprehensive and innovative solutions to improve congestion, reduce travel time and support future expansion. With our project portfolio including metropolitan and regional roadworks, complex highways, motorway interchanges and duplications, we are experienced in pavements of all specifications including roads, highways, carriageway construction, surfacing, drainage and public utility plant, car parks, pathways, intersections, and both soft and hard landscaping.

We hold the highest level of road and bridgework prequalification and third-party accredited management systems in safety, environment and quality. Through highly experienced personnel, strong management systems and an uncompromised commitment to excellence, we deliver quality and engineered transport projects safely and on time, no matter their size or scope.





Across the Perth metropolitan area, we are involved in the massive transformation of freeways for Main Roads Western Australia, delivering five projects in excess of \$182 million to manage congestion and road safety, reduce travel time and support the city's future expansion. BMD's involvement in these projects has led to the growth of our business and award of the Mitchell Freeway Extension and Tonkin Gap projects.



Mitchell Freeway Southbound Widening



Mitchell Freeway Northbound Widening



Smart Freeway Kwinana Northbound



Kwinana Freeway Southbound



Kwinana Freeway Northbound Widening

Cedric Street to Vincent Street
(7 kilometres of new lane and principal shared path, and complete freeway upgrade)

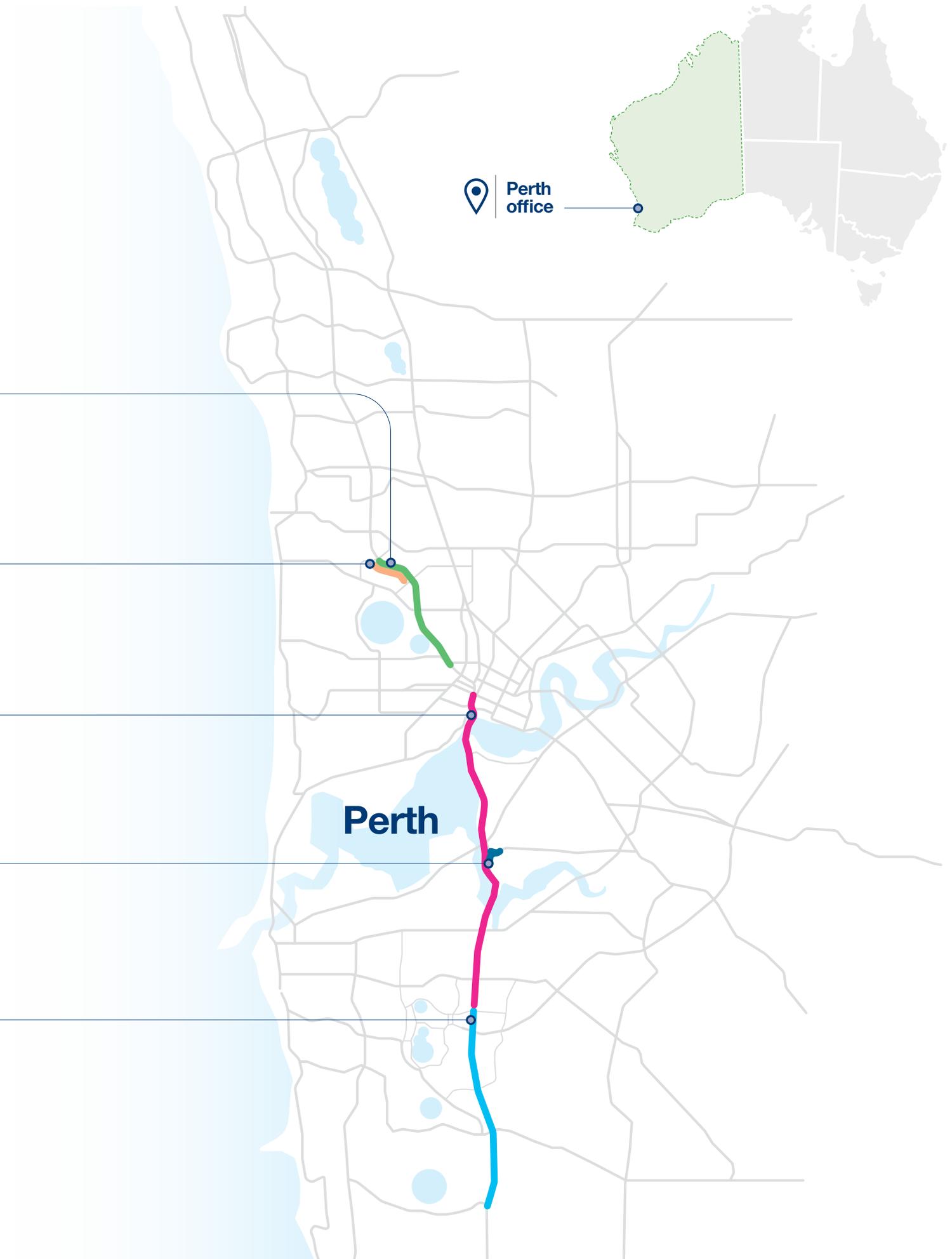
Hutton Street to Cedric Street
(2 kilometres of widening works and median barrier upgrade)

Farrington Road to Narrows Bridge
(12 kilometre stretch of Kwinana Freeway converted to a Smart Freeway)

On-ramp from Manning Road

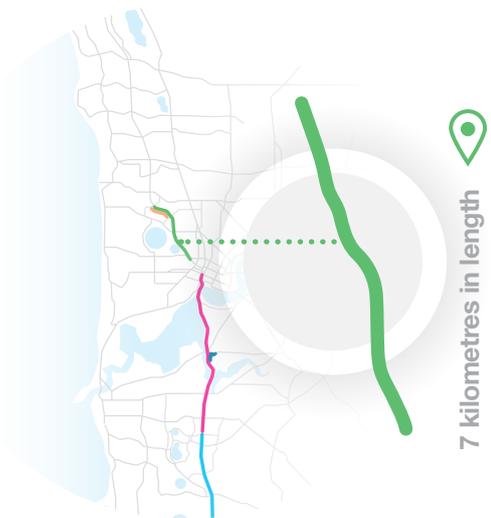
Russell Road to Roe Highway
(6.2 kilometres of principal shared path and freeway upgrade widening works)





MITCHELL FREEWAY SOUTHBOUND WIDENING

CEDRIC STREET TO VINCENT STREET



CONTRACT VALUE

\$50 million

PROJECT DATES

July 2018 – December 2020

CONTRACT TYPE

Design and construct

AREA TYPE

Highly urbanised, metropolitan

KEY DELIVERABLES

- 7 kilometres of additional lane on Mitchell Freeway southbound
- two underpass structures under Hutton Street
- steel bridge over Scarborough Beach Road
- shared path including a 7-metre-wide pavement and wearing course
- road and rail separation with concrete barrier
- concrete noise walls to reduce freeway noise for adjacent properties

BMD was awarded the design and construct contract for the transformation of the Mitchell Freeway. The widening works to one of Perth’s most critical corridors involved the construction of an additional lane for 7 kilometres between Cedric Street and Vincent Street to better connect Perth’s northern suburbs to the CBD.

The project also included improvements to five adjoining ramps, and the construction of two underpasses and a single span bridge over Scarborough Beach Road. With the Mitchell Freeway carrying some of the highest traffic demands in Perth at up to 180,000 vehicles per day, this project was vital to reducing congestion and bottlenecks for southbound traffic.

ACHIEVEMENTS

- Safety first culture implemented to achieve 139,256 hours without a total recordable incident.
- Achieved Aboriginal employment of 14%, exceeding the project’s 10% target.
- Improved visual amenity and increased floral biodiversity through an environmentally sensitive landscaping plan which includes Australian native plants with consideration to aesthetics, safety and survivability in Perth’s hot and dry climate.
- Achieved an Infrastructure Sustainability Council of Australia self-assessed *Excellent* ‘As Built’ v1.2 IS rating.

CHALLENGES AND SOLUTIONS

- Managed a significant number of unknown services and poor ground conditions by working closely with the design consultant and service owners.
- Complex traffic staging was managed through use of temporary ITS devices, temporary line marking, truck mounted attenuators (TMAs), BG800 barriers and community notifications.

INNOVATION AND VALUE ENGINEERING



SUSTAINABLE SOLUTION

With environmental protection a priority, alternative designs and construction methodologies were utilised to limit the amount of required vegetation clearing. By collaborating with the client and designer, retaining walls were implemented, pavement designs were adjusted, and embankments were steepened to maintain as much vegetation on the project as possible.



MITCHELL FREEWAY NORTHBOUND WIDENING

HUTTON STREET TO CEDRIC STREET



2 kilometres in length

CONTRACT VALUE

\$20 million

PROJECT DATES

November 2019 – September 2020

CONTRACT TYPE

Construct only

AREA TYPE

Highly urbanised, metropolitan

KEY DELIVERABLES

- 2 kilometres of widening works
- 5.3 kilometres of concrete barrier installation along rail reserve
- added a double exit lane
- upgraded street lighting
- median barrier upgrade
- three new emergency stopping bays

BMD has added a fourth lane to the Mitchell Freeway northbound carriageway from Hutton Street to Cedric Street by delivering two kilometres of widening works on a route that was previously heavily congested. The completed project has cut travel time between Cedric and Hutton streets from eight minutes to six.

ACHIEVEMENTS

- ➔ Created and supported local jobs with 100% of the project’s subcontractors and labourers locally sourced.
- ➔ Exceeded the Aboriginal hours requirement by 10%, demonstrating BMD’s commitment to Indigenous engagement and reconciliation.

CHALLENGES AND SOLUTIONS

- ➔ Involved complex staging due to interface with Public Transport Authority (PTA)’s road traffic barrier and access points along the rail corridor. Seven major traffic switches were delivered without incident as a result of detailed planning.
- ➔ Through proactive identification of design clashes and by providing solutions to the client, potential delays to the construction program were minimised.

INNOVATION AND VALUE ENGINEERING



SUSTAINABLE SOLUTION

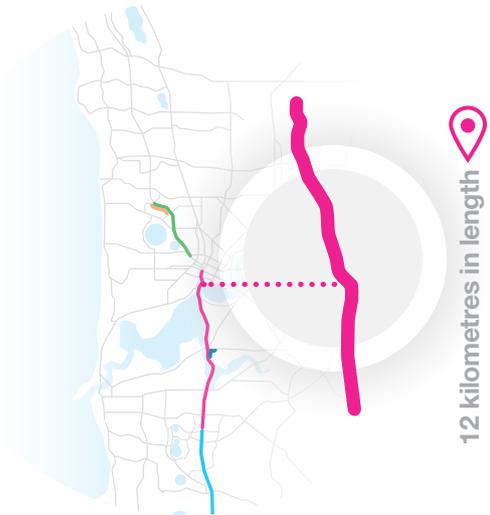
Existing pavement (which would normally be spoiled) was repurposed as restraint detail for the extruded concrete barrier. This provided an excellent sustainability outcome by reducing the use of non-renewable materials, namely crushed limestone.



SMART FREEWAY

KWINANA NORTHBOUND

FARRINGTON ROAD TO NARROWS BRIDGE



CONTRACT VALUE

\$75 million

PROJECT DATES

July 2018 – December 2020

CONTRACT TYPE

Design and construct

AREA TYPE

Highly urbanised, metropolitan

KEY DELIVERABLES

- extensive drainage network upgrades
- conversion to Smart Freeway using ITS technology, as well as introduction of full-colour, full-matrix Lane Use Management Signs (LUMS) and Variable Messaging Signs (VMS)
- emergency bay and pavement construction
- concrete traffic barriers
- 13 cantilever gantries
- freeway on-ramp metering
- upgrades to freeway lighting
- asphalt resurfacing

As part of the SmartWays Alliance, BMD upgraded 12 kilometres of the Kwinana Freeway to a smart freeway system. This central section of Perth's major freeway is the first stretch of the 'smart' road network in Western Australia, delivering a safer driving experience, reducing congestion and making better use of existing road infrastructure.

Utilising intelligent transport systems (ITS), the project aimed to increase the reliability of travel times for road users who previously experienced severe congestion and stop-start conditions. Since completion, travel times have already been reduced by up to 10 minutes.

ACHIEVEMENTS

- Managed work activities in an extremely narrow project site which was bordered by a rail corridor, the freeway and the Swan River, through stringent coordination.
- Managed work activities while protecting significant communication assets which ran for the length of the project alignment.
- Successfully delivered over 326,000 hours with zero lost time injuries, as well as nil class 1 and 2 environmental events due to rigorous environmental controls to protect the waterway.
- Achieved an Infrastructure Sustainability Council of Australia self-assessed *Excellent* 'As Built' IS rating.

CHALLENGES AND SOLUTIONS

- ➔ Relocated backbone optic fibre services while the services remained live by excavating a trench beside the existing conduits, then sliding the conduits into the required location. This method successfully eliminated the potential need for service outages, reliance on redundancies, and avoided impact to commercial customers and road users.
- ➔ Challenges arose during the installation of stormwater drainage as a result of the project's location alongside the Swan River and low pipe invert levels, with excavation resulting in large volumes of water. The excess water was managed through ground re-infiltration where possible, trucking and disposal to an approved off-site soak away site, and disposal to an approved Water Corporation sewer system.
- ➔ Traffic interface with the installation of the overhead cantilever gantries was resolved by implementing a full detour of the Northbound Kwinana Freeway over night shift. BMD utilised the detour to complete asphalt resurfacing which resulted in a shorter duration of impact to road users and a better quality finish.
- ➔ A latent condition was discovered late in the project with an existing, critical service duct crossing under the freeway found to be blocked and unusable. With the conduit a key link for the energisation of the ITS network, BMD utilised relationships gained through previous trenchless installations to fast track approvals for installation of a new under bore under the freeway and Public Transport Authority's (PTA) rail corridor.

INNOVATION AND VALUE ENGINEERING



FIRST SMART ROAD NETWORK

This central part of Perth's major freeway is the first section of 'smart' road network in Western Australia, with BMD utilising state of the art intelligent transport system technology to manage traffic flow and congestion. New technology and world best practice was also implemented to manage traffic during construction using the latest technology for temporary ITS.





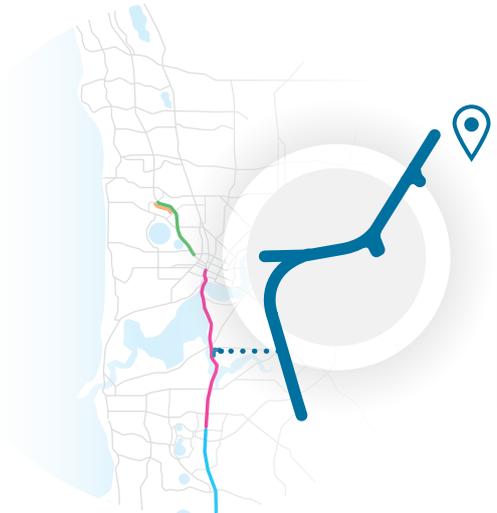
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“It was a pleasure to work with the BMD team on the Kwinana Freeway Southbound On-ramp from Manning Road project. The team have been proactive in problem solving, identifying design issues and offering solutions before they effect the construction program. The team has maintained a positive attitude throughout the project, focussing on delivering a quality product and progressing with the works.”

PETER JACOBS
Project Director
Main Roads Western Australia

KWINANA FREEWAY SOUTHBOUND

ON-RAMP FROM MANNING ROAD



CONTRACT VALUE

\$15 million

PROJECT DATES

October 2020 – July 2021

CONTRACT TYPE

Construct only

AREA TYPE

Highly urbanised, metropolitan

KEY DELIVERABLES

- clearing and vegetation
- new on-ramp between a noise and retaining wall
- widening and modifications to Manning Road
- additional lane on Kwinana Freeway
- new lighting
- noisewall construction
- drainage upgrades
- new retention basin

BMD was engaged to construct the Kwinana Freeway Southbound On-ramp from Manning Road and an additional lane on Kwinana Freeway from Canning Highway Southbound. The works included the widening of Manning Road within the City of South Perth between Ley Street and Kwinana Freeway, and reconstructing the curve at Edgumbe Street to provide direct access to the freeway lanes for road users from Como, Manning, Salter Point and Waterford.

The project was the first new southbound entry added to Kwinana Freeway in over 40 years, improving travel times by up to five minutes during peak hours for the approximately 7000 vehicles using the on-ramp each day.

ACHIEVEMENTS

- A high performing safety culture was implemented to achieve 53,000 hours with zero lost time injuries and a total recordable injury frequency rate of zero. Almost half of the project's Activity Based Conversations (ABCs) stopped at risk acts while in progress, successfully fielding the potential to become an incident.
- Spent 5% of the total project spend with Aboriginal companies and achieved Aboriginal employment of 11%, far exceeding the 2.5% target.

CHALLENGES AND SOLUTIONS

- Manning Road is a main feeder road adjoining the Kwinana Freeway with high traffic volumes. The reconfiguration of Manning Road and the connection onto Kwinana Freeway provided challenges to maintain traffic flows while undertaking the works, mitigated by careful staging and proactive planning.
- Significant amount of known and unknown live services within the project footprint. Engaged a service locating company before commencing excavations within specific zones.

INNOVATION AND VALUE ENGINEERING



Significant investigation and temporary works designs were completed for the underpinning works below the existing five-metre-high limestone retaining wall. Microfine grout was injected below the wall, and the excavation works in front of the wall were successfully completed without incident or movement of the existing wall above.

KWINANA FREEWAY NORTHBOUND WIDENING

RUSSELL ROAD TO ROE HIGHWAY



CONTRACT VALUE

\$50 million

PROJECT DATES

May 2018 – June 2020

CONTRACT TYPE

Design and construct

AREA TYPE

Highly urbanised, metropolitan

KEY DELIVERABLES

- full depth asphalt pavement (55,000 tonnes)
- bulk earthworks (using 130,000 cubic metres of sand)
- 4.3 kilometres of precast concrete noise wall
- 4.5 kilometres of stormwater
- street lighting
- intelligent transport systems (ITS)

With Kwinana Freeway a vital link between Perth’s southern suburbs and the CBD, BMD was contracted to design and construct a 6.2 kilometre section of freeway between Russell Road and Roe Highway to accommodate increased traffic volumes. The project involved construction of additional lanes and the modification of existing ramps.

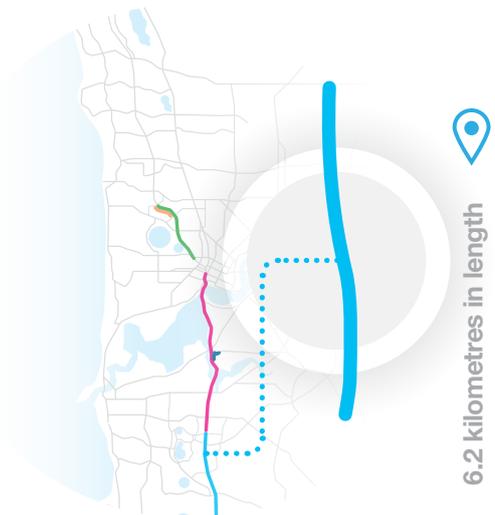
ACHIEVEMENTS

- Commitment to local community engagement with over \$1 million spent with Aboriginal businesses and five Aboriginal people employed full-time to deliver 18% of the project’s hours, far exceeding the 2% contract requirement.
- Completed works behind temporary barriers and anti-gawk screens to ensure minimal disruption to the 65,000 vehicles utilising the Kwinana Freeway each day. Planned works to ensure deployment and modifications were conducted outside of peak times and connectivity along the existing principal shared path was maintained through staged detours, to further reduce disruption.

- Safety first culture achieved 155,000 hours lost time injury free.
- Preserved 60 native grass trees by relocating them to the North Lake Road reserve area.
- Used a lightweight silent piler as a more compact machine to minimise the working space requirement, and retained approximately 1400m² of vegetation, including 30 mature trees.

CHALLENGES AND SOLUTIONS

- Employed smart design and early engagement during major inground service relocations by collaboratively engaging with water, telecommunications, internet and gas utility providers.
- Complex traffic management and planning was critical to the project’s success due to works being adjacent to, and on, a live freeway environment with high traffic flow.
- Significant project interface work with adjoining project to ensure seamless connections.



INNOVATION AND VALUE ENGINEERING



AUSTRALIAN FIRST

In a first for a Main Roads Western Australia project, BMD innovatively used **ECOCREAM** (50% recycled materials) and **ECOGREY** (100% recycled materials) blocks as a replacement of limestone blocks for the retaining walls. The ECO-blocks consist of crushed and screened high quality construction materials and waste concrete.



PROGRESSIVE IN LEADING SUSTAINABLE CONSTRUCTION PRACTICES

In a first for a major road in Western Australia, BMD used recycled materials in line with the client's sustainability commitment. With the most effective way to increase sustainability being to reduce the amount of waste in the first place, BMD maximised the lifespan of the road through use of durable materials and using 15,000 tonnes of crushed recycled concrete (CRC) and demolition waste as road sub-base under full-depth asphalt.

The construction methodology involved laying a 150-millimetre-thick layer of the CRC, which formed the stiff support layer, under approximately 250 millimetres of asphalt. The material is a granular mixture of fine-grained and coarse soils and crushed aggregate up to 20 millimetres in size, which were placed by grader (like conventional quarry crushed rock-base material). The method required less water for compaction and less work to achieve compaction than usual methods of using limestone.

Aside from the environmental benefits, the material makes an excellent sub-base under full-depth asphalt pavements, providing a stiff underlying layer that will help extend the life of the pavement, and provide positive engineering properties, including strength and longevity. The residual cement in the CRC is partially reactivated and begins to re-cement over time. This is beneficial under full-depth asphalt because of the increased stiffness and strength.

OUR HSEQ CULTURE

HEALTH AND SAFETY



At BMD, our business is our people. Ensuring our people, our families, and everyone who comes into our care is not harmed at work is our priority. We believe all incidents are preventable and we provide our people with the skills and training they need to be able to work safely.

Our approach is centred around a no blame culture where we empower everyone to be safety leaders. We implement safety management systems focussed on upfront and early identification of hazards and proactive implementation of controls. We expect our management to lead by example and their visibility on our project sites is imperative to our approach.

ENVIRONMENT



No matter where we are, our people are committed to preventing environmental harm and sustaining the local environment. We develop tailored environmental strategies in the planning and tendering phases of our projects, and enact and update them throughout the project to ensure we are continuously doing our part to protect and preserve the environment for future generations.

We ensure compliance with all relevant environmental management legislation, regulations and codes of practice. We have developed, and will continue to sustain a culture of environmental awareness, supporting all employees in the implementation of environmental procedures and processes.

Our people lead by example, take responsibility for environmental management no matter their role, and look for ways to lessen our impact including recycling and re-using materials, protecting flora and fauna, testing and monitoring waterways, and revegetating areas. Our project teams are progressive, known for re-using material in construction, piloting the first recycled material as base on a major freeway project in Perth.

BMD promotes continual improvement in management of health, safety, environment and quality (HSEQ) with the ultimate objective to create a culture where we can fearlessly strive towards achieving HSEQ excellence.

QUALITY



We pride ourselves on the quality of our work. It is important to us that the infrastructure we build stands the test of time. Our quality system is the result of over 40 years of delivering a vast array of projects where we learn from each delivery. It is consistently improved and refined to meet today's ISO standards, where we hold the highest level of accreditations.

Our people are passionate about getting the job done right, the first time. We hire quality leaders who are experts in providing assurance across our projects, and we provide the tools, systems and training to ensure we are always delivering a quality product.

SUSTAINABILITY



Sustainability is about meeting the needs of today without compromising the future. We are committed to ensuring we play a part in building a more sustainable industry - environmentally, socially and economically. We are a proud member of the Infrastructure Sustainability Council of Australia (ISCA), and use our membership to achieve ISCA rated projects across the country, including setting the benchmark for sustainability performance, recognised as the first major infrastructure project in North Queensland to receive an ISCA rating.

The legacy we leave in communities is as important as the infrastructure we build. We act today, with the future in mind, to ensure a sustainable tomorrow.

THE BMD WAY

COMMUNITIES



Our values of family, empowering, determined, collaborative and striving to do better shape our approach to building relationships within our local communities.

The work we do and the projects we deliver have a real impact on people in terms of construction, but also in the skills, jobs and economic opportunities we create. In delivering our work, we employ locally through our relationship-based approach to contracting and work in partnership with organisations who embody our values to achieve long lasting benefits. Our collaborative contracting model and our highly experienced community engagement teams allow us to proactively communicate with all stakeholders ensuring we minimise the impacts of construction.

Each year we consistently commit up to \$1 million to community partnerships and organisations in the vicinity of our regional offices and operational projects. In 2020, we awarded more than \$160,000 in funding to 36 grassroots and not-for-profit organisations across Australia through our COVID-19 Recovery Community Assistance Program. We are proud to have played a small part in helping education and community organisations in Western Australia work through uncertain times and alleviate some of the negative impacts from the COVID-19 pandemic.

BALANCE AND BELONGING



At BMD, we recognise the positive impacts that a diverse organisation can have on our business and we respect and value people's differences. We continue to strive to increase the diversity of our people through a range of practical and forward-thinking initiatives. We provide employment and development opportunities to create high performing teams in a safe and equitable workplace that fosters an environment for our people to achieve to their full potential, no matter their background.

With construction identified as Australia's most male dominated industry, we recognise the necessity for businesses like ours to actively work towards increasing female representation by attracting and retaining women, and ultimately increasing gender equality. We are constantly evolving to provide flexibility and benefits that make BMD a great place to work, including our generous paid parental leave policy and flexible return to work options.

We are proud of our 40-year history of working with, and within, Aboriginal and Torres Strait Islander communities. We formalised our commitment to continuing to build strong, respectful and mutually beneficial relationships in these communities in 2017, through our first Reconciliation Action Plan (RAP). We are now in the innovate stage of the RAP framework which builds on our commitments, and integrates reconciliation into our values, purpose and business strategy which will further enable us to contribute to shaping Australia's future.

What makes BMD different is our value system, unique culture, and commitment to our people and the communities in which we live and work.

SOCIAL PROCUREMENT



We work closely with our clients and partners to create opportunities that deliver genuine benefits for communities and individuals through measured and responsive procurement practices.

As a national business, we recognise that the procurement decisions we make can help build a local organisation's capabilities, provide employment for disadvantaged individuals, and upskill workers that are both new and established within the industry. We recognise that while the delivery of infrastructure is our core business, it is our ability to create opportunities for local, social, and Aboriginal and Torres Strait Islander businesses that will unlock the greatest social and economic benefits for the communities in which we work.

Procurement decisions start early, and active communication with partner networks and intermediaries assists in supply chain identification, as well as direct engagement through relationships we have built.

TRAINING AND DEVELOPMENT



At BMD, the ongoing training and professional development of our employees is important to us so we can ensure our people are consistently growing.

We are proud to implement our own emerging leaders' programs for corporate, engineering and workforce staff. These programs are focused on strengthening the knowledge and skills of our people, and providing them with the tools to ensure they succeed in managing the challenges of leadership.

Providing our people with systems and processes to ensure they can perform at their best is vital. As BMD's lead delivery forum for information and technology advancement, DigiLead focuses on structuring business advancement beyond our current position within the digital sphere. DigiLead encompasses more than 20 major projects, including technological improvements with a self-service portal for contractor management, an invoice management system, and the advancement of artificial intelligence software for financial modelling.

OUR HERITAGE

At BMD, our business is our people.

Our value system, unique culture and commitment to our people is what makes us different.

We have grown from a small family owned company to become the leading Australian owned engineering, design, construction and land development contractor. Despite our growth, our unique Australian owned and family heritage has remained, and our business will always truly be about our people.

The private ownership of our business facilitates a speed of decision making that, when coupled with our financial strength and capability, provides outcomes of the highest possible mutual benefit. Over our history, we have enjoyed strong and consistent growth, and have an impressive track record of increasing revenue. We have turned over more than \$1 billion in revenue since 2012, achieving a record \$1.55 billion in the 2020-2021 financial year.

OUR VALUES

FAMILY

We are proud of our family company heritage. This heritage means we value each individual, we respect and encourage diversity and we create and promote a sense of belonging.

EMPOWERING

We empower our people to develop the self-belief that will enable them to realise their potential. The resulting flexibility, initiative and responsiveness sustain our business growth and success.

DETERMINED

We persist despite the obstacles. We celebrate effort as well as achievement and we are tenacious in our pursuit of the objective.

COLLABORATIVE

We work as a team in the belief that collaborative achievement results in creative relationships of long-term mutual benefit. Our no-blame culture focuses on finding what works best, sharing success and enjoying the experience.

STRIVING TO DO BETTER

We aspire to be the best at what we do through fresh thinking, hard work, continual learning and a shared sense of purpose. We take great pride in our achievements.





FAMILY
EMPOWERING
DETERMINED
COLLABORATIVE
STRIVING TO
DO BETTER

Offering part or complete integration of the entire project life cycle – engineering design, construction, land development, landscaping and property development



Experienced in all contract delivery models



Employs 1700 office and project staff



Annual turnover over \$1 billion since 2012



Over 40 years of doing things differently



WE SEE THINGS
DIFFERENTLY

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