



people+



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# Who is Fulton Hogan?



Fulton Hogan is a major resourced based civil contracting company, providing a broad range of products and services to customers in the roading, quarrying, civil construction, infrastructure maintenance and land development sectors.

Fulton Hogan employs over 4,800 staff across New Zealand, Australia and the Pacific Islands, and continues to grow and diversify. Over our 70 year history, we have worked on many groundbreaking construction and engineering projects in these regions.

These experiences have shaped a company that prides itself on pioneering new engineering and construction techniques, while ensuring it completes all projects on time, no matter how complex or challenging.

“Fulton Hogan’s history has always been about doing the best for our customers. We’ll always “keep delivering” for them: on projects with tight deadlines and budgets; with dynamic engineering techniques that solve their construction challenges; and above all, by delivering real value in everything we do.”

Dave Faulkner – Managing Director



## Growth, growth and more growth

Fulton Hogan was formed in 1933, when Jules Fulton and Bob Hogan entered into a partnership in Dunedin, New Zealand. From an initial start in the quarrying and asphalt businesses, Fulton Hogan's operations soon included road construction activities, bitumen supply, construction and contracting, and general engineering.

Over the next 60 years the company grew to become New Zealand's largest construction and contracting company. In 2002, it expanded its operations in Australia with the purchase of Standard Roads and Astec, two well established and respected Australian contracting companies. The Australian operations were renamed FRH Group, in tribute to the founding owners.

Today, Fulton Hogan draws on its Australasian expertise to provide a range of integrated solutions to customers in all its locations. Alongside our existing construction markets we are also extending into new areas, such as water, rail and infrastructure developments.

"FRH operated under a separate management structure from its New Zealand parent, but shared many things, including a common board. Staff, skills and knowledge flowed freely between the two businesses – so much so that, in November 2007, FRH Group was renamed Fulton Hogan to unite the Australia and New Zealand operations."

Nick Miller – Chief Executive (Australia)



# Our People

Our people's attitude  
to others - that's what  
makes the difference

At Fulton Hogan, we firmly believe that our long term success depends on attracting and retaining quality people, who believe in the value of their work and who enjoy producing great results.

We have a very diverse workforce, but no matter what our roles and backgrounds, success at Fulton Hogan is based on sharing common values. These include:

- an emphasis on honest relationships, mutual respect and a collaborative approach between ourselves, our customers and suppliers.
- recognising the importance of teamwork and working together to achieve common goals in all our work activities.
- a focus on achieving the highest level of quality and safety in the work we do, at all times and with no compromises.
- encouraging a straightforward and informal way of working, with an 'open door' policy between employees and managers.
- leading by example and being responsible for our actions

“There are two outstanding groups of people that make Fulton Hogan the company it is today – our customers and our staff. Without them, we simply wouldn't be around to tell our story. “

Nick Miller – Chief Executive (Australia)

our

These values were first encouraged by the founders of the various companies that now make up Fulton Hogan in Australia and New Zealand. They reflect our 'hands on' management style and, above all, they embody the personality and character of our company as it grows in size and scope across Australasia.

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At Fulton Hogan, we truly 'live' our values – this is what makes us different from others. They are demonstrated in our work and form the backbone of many of our employee initiatives. And, if you asked our people why they worked for us, chances are that they could point to some real examples of these values in action.

people

Here are some of the many things that make Fulton Hogan a great company to work for:

**Teams within teams:** our work teams are deliberately composed of small groups of people, to encourage ownership and pride in their work. At the same time, these individual teams are part of the broader Fulton Hogan 'team' and can draw upon the company's wider resources.

**Personal career development:** we work with each individual to develop their potential through personal career development plans. This investment helps our people grow and increases their long term success within our company.

**Graduate program:** our 12-month graduate program "fast tracks" our new graduates by providing rotations into several different aspects of the civil contracting industry. This first year exposes them to wide variety of experiences and challenges, making them ready to move quickly to higher levels of responsibility in the area of their choice.

**Fair dealings with our 'other customers':** we believe that our subcontractors and our suppliers are our other customers. We consciously work towards collaborative partnerships that deliver healthy, long term relationships. This has resulted in high levels of trust and loyalty, and much easier day to day relationships.

**Respect for all:** we genuinely value our people and their work, and believe that with goodwill, honesty and positive communication, conflicts can be resolved. As a testament to this, we have only had one day of industrial dispute in Australia since 1961.

**Positive customer relationships:** we treat our customers with the respect they deserve, given their vital contribution to our success. Our non-litigious approach is well known and appreciated. We value our long term positive relationships with our customers, an approach that is supported by our record of never once having gone to court to settle customer disagreements, in our entire history.

Respect, good communication, and doing what we say: these three values makes it easy for us to get on with people – which in turn makes Fulton Hogan a great place to work.





# Operations

Bringing all our products  
and services together,  
from across Australia

Committed to sharing experiences, knowledge, resources and people, Fulton Hogan offers our customers a range of integrated products, services and construction solutions in Australia, New Zealand and around the Pacific.

Unlike many other contractors, Fulton Hogan offers clients a vertically integrated business structure which includes resource and construction capabilities. Our quarries are positioned in close proximity to the company's asphalt plants to ensure a continual supply of high quality material.

Additionally, our quarry and asphalt products are incorporated into our construction projects providing clients with a true "one stop shop". This high level of integration reduces Fulton Hogan's reliance on other suppliers and ensures we can manage our projects on time and to the highest standards.

"Where else can one company have its own quarries supply directly to its own asphalt plants and civil projects, and its asphalt plants and precast businesses supply directly to its construction projects? Our holistic approach to business makes Fulton Hogan a unique and diverse place to work."

Bruce Rowell – General Manager – Major Projects



Fulton Hogan's operations include:

- Quarrying and aggregate production
- Asphalt production and placement
- Emulsion manufacturing and spraying
- Precast concrete manufacturing
- Road construction and surfacing
- Pavement recycling
- Highway maintenance
- Drainage and pipeline construction
- Excavation and earthworks
- Pipeline construction
- Pumping stations and flow control facilities
- Land development
- Commercial site works
- Landscape construction works
- Structural works

- Heavy duty pavement construction
- Airport runway construction and upgrades
- Port development works
- Water and waste treatment plants construction and augmentation
- Reservoir and dam construction and upgrades
- Total facilities and asset maintenance
- Parks and garden maintenance
- Street sweeping
- Traffic control
- Ultra high pressure water cutting pavement rehabilitation
- Water blasting and cleaning pavement rehabilitation
- Variable transverse spray sealing - Multispray
- Laboratory and technical services
- Land reclamation works
- Non-destructive underground services detection and location service.

# operations





# Safety

Safety: the number one priority at Fulton Hogan, with no compromises

At Fulton Hogan, we know that every job can be done safely and without injury. Our Board, senior executives and managers are regularly out in the field “walking the talk” to make sure we have the highest safety standards in place for our people, our subcontractors and our customers.

This pervasive culture of safety, backed by the latest safety equipment, leadership, training and support, helps us create an environment that encourages safety at all times and across all levels of the company.

Our national safety system is assessed by regular safety audits. The results of these - supported by our excellent safety record, accreditation by the Federal Safety Commissioner and certification to AS/NZ4801 - are clear signs of Fulton Hogan’s leadership on this issue in both Australia and New Zealand.

Within Fulton Hogan, safety doesn’t just stop with our responsibility towards our employees. We apply our safety-driven culture and systems to all our subcontractors and suppliers. We listen to our employees and consult with them regularly on safety matters. Their input and feedback into how we manage our business makes us stand out in the industry.

“We have a simple view on safety at Fulton Hogan – it is our responsibility to make sure that our staff, and all those working on Fulton Hogan sites, can come home every night to their families. If an operation isn’t safe, we won’t do it.”

Ed Johnson – Chairman



Training, both formally and out on the job, is an essential part of creating a safe workplace. A number of Fulton Hogan employees have been trained as workplace instructors, to mentor and teach our employees safer ways of working. Our company-wide induction program, together with site-based inductions, toolbox and pre-start meetings, are all key safety initiatives.

Ensuring life balance and “taking it home” behaviours are other common elements in Fulton Hogan’s safety messages. Many of our employees participate in health and well being programs like Healthy Hearts, Quit Smoking and work balance initiatives. We also actively encourage our staff to think ‘safety’ in everything they do - at home, at work, while driving or when with friends.

Several of our large project sites have instigated reward and recognition programs to encourage our staff to display positive safety attitudes. Whether it is wearing the correct personal protective gear or being sun smart, our people are rewarded for their positive behaviors. Our no-blame philosophy and open communication channels allows our staff and managers to create safe working environments.

We also work with our customers to eliminate safety risks through smart design and construction processes. Our managers play a key role in monitoring and reinforcing positive safety behaviors through a series of task observations activities. This helps take our systems beyond compliance to practical application, ensuring we really are the “safe pair of hands” on any project we do.

safety



# Quality

Doing it right first  
time, to deliver  
quality from start  
to finish

Fulton Hogan is serious about providing our customers with the highest standards of products and services, to exceed expectations wherever possible. Our certification with the AS/NZS ISO 9001 standard across our operations make process improvements part of every employee's job, with standards and practices reviewed on a regular basis.

All our products undergo vigorous testing to Australian and international standards by our accredited and independent laboratories. And, as well as independent ISO reviews, our expert staff also undertake their own internal audits to incorporate continuous improvements into all our operations.

We have the flexibility to adjust and refine our own operations to meet customer needs, whatever the level of requirement. We work closely with our customers to determine quality requirements and improve on these where possible. We also plan for factors like finish requirements, longevity of materials, quality and standard of raw materials, time and project key performance indicators, and safety and environmental considerations.

quality

At all times, we take a collaborative approach to quality, ensuring both sides understand and agree to quality standards. Our recent Moorabool Bridges project near Geelong is an excellent example of how we used this collaborative approach to achieve quality on several levels. The result saw revolutionary construction techniques developed that incorporated improved quality and safety outcomes, which we will use again on other similar projects.

A testament to Fulton Hogan's commitment to quality is our long list of industry recognised awards for delivering excellence in all aspects of project delivery. These awards include;

**Masters Builders Association, Excellence in Construction, Sport Facilities Project over \$25 million, 2007** Ian Thorpe Aquatic Centre

**Nikau Compliance Award, 2007** Wellington City Bypass Project

**Civil Contractors Federation Earth Award for Excellence, 2007, Category 3 (Australia)**  
Murray River Bridge - Cobram/Barooga

**Civil Contractors Federation Earth Award for Environmental Excellence 2006, Category 2 (Australia)** Flinders Street Overpass Removal Project.

**MIMICO Environmental Excellence Award 2006 (NZ)** Environmental Excellence in the quarrying and rehabilitation of the Reliable Way Quarry in Auckland

**Civil Contractors Federation Earth Award for Environmental Excellence 2004 (Australia)**  
Eastern Freeway Project

**Green Ribbon Award 2004 & Hawke's Bay Environmental Business Award 2003 (NZ)**  
Napier Expressway Partnering Group (Fulton Hogan, Opus and Transit)

**Christchurch City Council Target Zero Commendation 2004 (NZ)** Fulton Hogan Canterbury

**Civil Contractors Federation Earth Award for Construction Excellence 2003/04 (Australia)**  
Monash Freeway, Hallam Bypass and Eastern Freeway- Springvale Road to Park Road Projects

**IPENZ Environment Award 2003 (NZ)** Ultra High Pressure Watercutter

"Delivering quality? We do it by achieving excellent finishes on jobs like the Ian Thorpe Aquatic Centre. Or by planning a project like the Moorabool Bridges, to ensure quality through safety of design and construction. But however we do it, making sure that we exceed quality expectations is an absolute 'must do' in our company, at all times."

Bill Perry – General Manager – Corporate Services





# Environmental Sustainability

Environmental excellence  
in everything we do

At Fulton Hogan, achieving environmental sustainability through good management is, and always will be, a core part of our business.

Sustainable development is critical to Fulton Hogan's strategic direction and is implemented across all levels of our company. Our Board is committed to managing our environmental impact and requires our managers to provide regular reporting and monitoring.

Working closely with authorities, experts and the community, we carefully plan our operations to reduce environmental impacts, while still achieving quality results for customers. Our teams work closely with government agencies and public groups from the outset of their projects to ensure that sustainable environmental management is planned, implemented and maintained from start to finish.

We have also undergone a rigorous process to identify substantial environmental risk areas in our business operations. We have developed mitigation strategies, consistent with our Environmental Management System, to ensure the best possible outcomes are achieved.

sustainability

On the ground and out in the field, all Fulton Hogan's operations are certified to AS/NZS ISO 14001, ensuring we manage all projects in a sustainable manner, subject to regular audits by an external third party. Our other environmental initiatives include:

**Environmental training:** Fulton Hogan carries out extensive staff training in environmental management, including topics such as spill control and compliance with environmental legislation in different jurisdictions. We regularly hold these courses for new employees and refresher courses for long-serving employees.

**Environmental auditing:** Fulton Hogan undertakes regular environmental audits of all our sites and projects. We audit in accordance with environmental best practice and, as well as ISO audits, we often include external verification from local authorities.

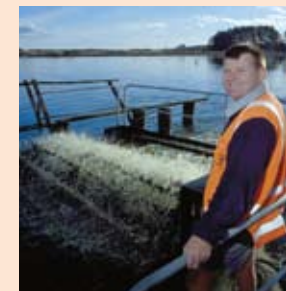
**Neighbours and community:** Fulton Hogan is committed to working together with the community to ensure we minimise the effects of our activities and we meet all environmental expectations. Community liaison groups operate at many of our project sites.

**Sustainable development:** Fulton Hogan has implemented cleaner production initiatives to reduce waste and atmospheric emissions and increase energy efficiency. A significant portion of our investment into research and development is targeted at issues of sustainability. The Group is committed to a policy of carbon neutrality, which we achieve through our forestry developments and technical research initiative such as:

- construction of 100% recycled roads
- OTTA Seal - environmentally friendly dust suppression for unsealed roads
- development of our unique Ultra High Pressure Watercutter and Multispray®
- use of in situ pavement recycling
- development and use of bitumen emulsion technologies
- use of recycled glass in asphalt mix designs
- developing our Recycled Asphalt Pavement (RAP) applications.
- development of Warm Asphalt

“Our asphalt plant in Dandenong uses state of the art emission control systems, full asphalt recycling capability and a double drum facility to capture and re-use heat from the manufacturing process over and over again. Clever technology like this enables us to produce quality products with minimal environmental impact.”

Paul DeBritt – National Asphalt Manager





# Technical Excellence

## R&D for the edge in technical excellence

Fulton Hogan embraces excellence in technical developments. In New Zealand and Australia our formal and informal research and development (R&D) activities deliver technical advances and innovations across all our areas of operation.

Fulton Hogan's R&D effort harnesses a number of initiatives. There are our laboratories – five NATA-accredited facilities in Australia and six IANZ-registered operations in New Zealand. Stocked with the very latest testing equipment, these facilities test a range of properties, materials and solutions. They also assess the applicability of new ideas and solutions developed 'at the coal face' on Fulton Hogan's project sites.

Our R&D also provides a platform to develop and introduce state of the art technology into New Zealand and Australia. Examples include:

- Fulton Hogan's high production asphalt plant in Dandenong, Victoria, using world-leading technology to calibrate asphalt mixes within minutes and deliver customers a superior product across all stages of a project.

“Our R&D effort embraces best practice and continuous improvement. But it's also driven by our regard for environment sustainability, our focus on safety and employee development and, most critically, achieving the highest quality for our customers.”

Dr Bryan Pidwerbesky – General Manager – Technical



- our Ultra High Pressure Watercutter, designed in New Zealand and improved for Australian conditions. We use it in both countries to deliver superior removal of excess bitumen and restoration of the microtexture of polished aggregates and chips in road surfacing.
- our Multispray® unit, which sprays bitumen at different application rates across the width of a road, to eliminate road flushing, reduce wear and improve skid resistance.
- our asphalt grooving units, which improve skid resistance on high risk areas such as intersections, roundabouts and airport runways.

Fulton Hogan also encourages our R&D staff to share ideas and perspectives back and forth across the Tasman. Our people continually research and test new technology and international developments, here and overseas, to evaluate their effectiveness and applicability to Australasian situations. Often, they will move between Australia and New Zealand, or across different Fulton Hogan operations, bringing with them ideas, best practices and new technologies.

And we ensure we take the results of our R&D efforts outside the laboratory regularly, through intensive staff training, one to one client presentations and industry sessions with customers, suppliers and subcontractors. In particular, we frequently work with roading authorities in New Zealand and Australia, to ensure that our applications and products meet their varying technical and environmental requirements, in whatever region or location they are used.

technical





# Project Management

Managing major projects – what we do best

Over the years, Fulton Hogan has been involved in many of Australasia's significant infrastructure projects, ranging from major freeway, bridges, buildings, reservoirs, to water and waste water treatment plants.

Many of these projects are 'stand alone' design-build construction jobs; others are joint ventures or alliances with other industry organisations. But all provide real and lasting benefits to our customers and communities. Some of our latest high profile construction projects include:

In Australia:

- \$153 million Calder Freeway in Victoria
- \$113 million Pakenham Bypass in Victoria
- \$771 million Weakleys Drive Interchange in New South Wales
- \$69 million Coloundra Road in the Sunshine Coast, Queensland
- \$61 million Hume Highway- Sheahan Bridge duplication in New South Wales
- \$54 million Maroochydore Road Upgrade in Queensland
- \$33 million Kingscliff Sewage Treatment Plant in northern New South Wales
- \$31 million Brisbane/Beenleigh Road Upgrade in Queensland
- \$31 million Prince Hwy- Oaks Flat to Dunmore in New South Wales
- \$28 million Hamilton Road Upgrade in Brisbane.

project mana

In New Zealand

· \$292 million ALPURT B2 project – the Northern Gateway Alliance - north of Auckland · \$125 million State Highway 20 Mt Roskill extension in Auckland · \$33 million Wellington Inner City Bypass project.

Fulton Hogan operates at the forefront of project management practices. We actively promote these across industry associations and ensure that our technical teams incorporate industry best practice into all our operations. We learn from all our projects, applying these lessons to deliver tangible benefits to our customers.

Our success is recognised by our history of awards for excellence in project management. It is also embodied in the many successful projects we have worked on over the years.

**Project snapshot:** \$153 million Calder Freeway development, Malmsbury to Faraday, Victoria for client VicRoads.

**Challenge:** to design and build a new 22 kilometre freeway, mobilising a team of 100+ staff in a busy construction market and secure earthmoving equipment capable of moving over three million cubic metres of earthworks, on time and within budget.

**Solution:** sub-alliance established with Emeco (earthmoving subcontractor) that specified a financial 'pain and gain' arrangement for all parties. Establishment of an onsite quarry to manufacture select sub-grade. Recruitment and training of local labour for the project.

**Result:** working cooperatively with VicRoads, Fulton Hogan proactively solved issues as they arose, enabling the project to be completed within budget. Emeco sub-alliance supplied sufficient earthmoving machinery and personnel for project completion approximately 10 months ahead of time.

**Project snapshot:** Northern Gateway Alliance (NGA) - \$292 million alliance between Transit NZ, Fulton Hogan and five other parties to deliver the ALPURT B2 motorway extension around the Waiwera region of North Auckland, New Zealand.

**Challenge:** to complete a 7.5km, four lane motorway extension through difficult geotechnical location and achieve a project result that conforms to the Alliance vision of creating "a Northern Gateway that is a visual showcase of environmental and engineering excellence".

**Solution:** : to harness Fulton Hogan and the five other Alliance participants in a close partnership with Transit NZ, to ensure common team approach to safety, community relations and working practices. NGA activities overseen by a combined team of senior managers from individual NGA partners, supported by consultative advice from various environmental and technical advisers. Recruitment and training of local labour for the project.

**Result:** project as at October 2007 almost 70 per cent complete, with projected stages scheduled for completion within desired project timeframe. NGA awarded supreme award for Environmental Excellence by NZ Contractors Federation, August 2007.



gement



# Collaborative Relationships

Genuine, collaborative relationships with our customers.

Promoting honest and friendly dealings between our staff and our customers simply makes good business sense. It delivers outstanding performance by providing solutions that exceed requirements and allows for ongoing relationships rather than once-off engagements.

From management downwards, we work hard to understand our customers' businesses, their ways of working and their often unique and complex construction requirements. We are also flexible, providing design and construct solutions alongside construct-only projects, relationship contracting, alliancing and private partnerships.

We focus hard on working with customers as a project unfolds to solve common problems and issues together, and ensure mutually acceptable solutions. Often we will suggest alternative approaches to a project's design or construction, if we feel it is in the best interests of the customer or the wider community.

We do not compromise on our responsibilities to our customers or the wider community: we are committed to being a good corporate citizen in all our projects.

**Project snapshot:** Goulburn Campaspe Link Pipeline Project ('Goulburn Campaspe Alliance'), Colbinabbin to Lake Eppalock, Central Victoria for client Coliban Water.

**Challenge:** to secure Bendigo's water future by building a \$30 million, 46km, 1050mm diameter pipeline and two 6Mw pump stations in just nine months with a 'drop dead' timeframe and significant delays to client-supplied items.

**Solution:** construct-only, "hard dollar" contract transitioned into an alliance with Coliban Water to improve collaboration and management of project. This included land access, design and development considerations and pipe deliveries. Fulton Hogan took over managing the supply of pipes and pump stations.

**Result:** project delivered on time and on budget, with 40 megalitres of water a day delivered to Bendigo from 1st September 2007 onwards. Success means Fulton Hogan and water authorities likely to use alliance agreements on future projects of this type.

**Project snapshot:** Southern Roads Services (formerly Road Care), \$300 million joint venture between FRH Group and Pioneer Road Services, in partnership with Main Roads, Western Australia.

**Challenge:** to combine international skills and resources of joint venture parties to manage road maintenance contracts being offered by Main Roads over a ten year lifespan (2000 – 2010) in the South West, Wheatbelt South and Great Southern regions of Western Australia.

**Solution:** in 2005, existing contract converted from outcome based lump sum contract to alliance relationship, with aligned common goals and stretch targets. This has improved communication and efficiency between all parties. Close communication and co-location ensures services are provided on time, efficiently and where needed the most. These include asset management, pavement applications, drainage and shoulder maintenance, vegetation control for roadsides and verges, line marking and signage maintenance and emergency repair facilities on a 24/7 basis.

**Result:** strong client relationships allows "ground breaking" delivery arrangements; excellent dialogue with key stakeholders and the community ensures two way communication of any maintenance needs and activities.

relationships



# Road & Pavement Construction

Roading expertise  
that's second to none

Fulton Hogan constructs roads that are safe, reliable and consider whole of life costs. Using the latest equipment coupled with extensive expertise, our highly trained asphalt laying crews place over 400,000 tonnes of asphalt each year.

Our range of roading and pavement services includes:

- earthworks and siteworks
- drainage and soil stabilisation
- road construction, surfacing and road marking
- kerb and channeling construction.

Our high tech equipment – such as our Ultra High Pressure Watercutter, water blasting (Frimokar) and Multispray® units – achieves accurate, cost effective and environmentally sensitive solutions for rehabilitating bituminous pavements. And, with the help of our registered laboratories, our bitumen products can be adapted to meet a range of customer requirements.

Our projects showcase our expertise and high quality results. They include the \$113 million Pakenham Bypass in Victoria, the \$68 million Maroochydore Road upgrade and duplication in Queensland, and many other complex roading and pavement projects.



We are also leaders at delivering projects ahead of deadlines and budgets. Two examples of our work include the Hallam Bypass in Victoria, which was opened 17 months early without a single claim or dispute; and the Calder Freeway project, which will be completed more than 10 months ahead of schedule.

**Project snapshot:** \$18 million Linkfield Connection Road, Brendale, Queensland for client Main Roads Queensland, including road, bridge, drainage structures and signalised intersections.

**Challenge:** redesign to cater for high voltage power lines near bridge construction site. Installation of significant box culvert within floodplain, incorporating large sedimentation ponds filled continuously with discharge from adjacent concrete plant.

**Solution:** Fulton Hogan worked closely with client to redesign bridge to incorporate reinforced earth walls and segmental piles. Constructability reviews undertaken concurrently with design phase, along with pricing reviews and ordering long lead time materials. Extensive consultation with concrete plant to enable “shut down” during box culvert installations.

**Result:** collaborative approach between all parties resolved all design issues. Project completed more than two months ahead of deadline.

**Project snapshot:** \$113 million Pakenham Bypass project (Sections Two and Three) in Victoria.

**Challenge:** design and construction of new 14 kilometre freeway on a floodway, over poor ground conditions and with the potential for significant environmental impact. Over 1 million cubic metres of fill imported for project.

**Solution:** major focus on managing project’s environmental impacts including dust, water quality, noise and flora and fauna protection. Tried and introduced innovative techniques such as poly aluminium chloride (PAC) flocculent, synthetic sediment filters, gravel sausages and EcoBerm to complement traditional environmental management approaches. Directly managed the supply of earthworks from Fulton Hogan’s quarry to minimise project timeframe and impact on the community. Use of lime stabilisation and drainage blankets to improve ground conditions.

**Result:** project completed on time and to budget. Excellent relationship maintained with VicRoads, community and environmental groups throughout. Vertically integrated business structure provided aggregate, precast beams and asphalt.

road



# Structures

Built to last,  
works well and  
looks good too

Fulton Hogan has been active as a builder of bridges, buildings and other major structures for over 70 years in New Zealand and Australia.

Over this time, we have refined our services to deliver customers the very best outcomes on their structural projects. We train our staff rigorously in best practice construction techniques, to ensure they employ the very best building processes in their work.

Our structural teams are renowned industry-wide for delivering the highest quality products, produced according to strict time, budgetary and design requirements.

Our projects can range from large scale, incremental-launched bridges and significant reservoir intake structures, all the way through to unique constructions such as the Harry Seidler-designed Ian Thorpe Aquatic Centre in Sydney. This wide range of projects, coupled with our years of experience, makes it easy for us to meet a diverse range of customer needs.

Other recent major structures developed by Fulton Hogan include the \$40 million Australian Technology Park Building in Sydney's western suburbs; the \$15 million twin bridges over the Moorabool River near Geelong, Victoria; and the \$10 million Murray River bridge crossing at Cobram, Victoria.



structures





**Project snapshot:** construction of \$15 million twin 200 metre bridges spanning the Moorabool River near Geelong, Victoria, for client VicRoads.

**Challenge:** to construct twin bridges at a height of 20 plus metres above river, ensuring worker safety while also achieving efficient and cost effective construction techniques.

**Solution:** Fulton Hogan designed a revolutionary construction technique, with bridge components precast offsite, then delivered to site for assembly in a 'lego block' style exercise. This process greatly reduced safety hazards on site and also minimised construction impact on surrounding environment.

**Result:** this process has demonstrated significant injury risk reduction on elevated construction work and will be used again for similar projects with hazard potentials.

**Project snapshot:** \$33 million Ian Thorpe Aquatic Centre, Ultimo, New South Wales, for client Sydney City Council. Construction of a distinctive wave-form building, designed by Harry Seidler, including a heated 50 metre pool, leisure pool complete with spa, sauna and steam room, fitness centre and carparking for 99 vehicles.

**Challenge:** to achieve the potential of Seidler's unique design while still working within the constraints of the site topography, environmental requirements and end user needs.

**Solution:** building constructed over three levels to cater for the site topography. Structure incorporates unique wave shaped aluminium roof, supported by 60 metre span trusses and piloti concrete columns to provide a column free space. All pools fully suspended concrete structures incorporating waterproof membranes. 650m<sup>2</sup> of single glazed U profile glass, imported from Germany, used for the north and south walls of the structure as façade glazing. Other materials include approximately 4,000m<sup>3</sup> of concrete, 160 tonnes of steel and 200,000 tiles. Design also includes 'green' initiatives for water conservation and noise control.

**Result:** officially opened to the public on August 26, 2007, on time and budget. Recipient of the 2007 Master Builders Excellence in Construction Award, Sports Facilities Project in excess of \$25 million.



# Water Infrastructure

## Securing Australia's water future

In Australia, water availability is a top priority for the community and for Fulton Hogan. Our recent work on the Snowy Hydro scheme, one of the civil engineering wonders of the modern world, is an example how we can deliver on any size of water infrastructure project within Australia's water grid.

We build dams, water treatment plants and pipelines in some of Australia's and New Zealand's most remote and challenging locations. Our customers include a wide variety of water authorities and regional councils. We can work across greenfield or brownfield developments, to manage all facets of a project.

Frequently, our work involves complete design and construct solutions that include structures, buildings, pipeworks, tunnels, spillways, mechanical and electrical control systems. We also carry out complex pipeline projects across many applications, including large diameter reticulation sewers, live sewers, outfall and trunk sewers, rising mains, trunk water mains, storm water drainage, pumping stations and sewer remediation works.

All our projects comply with the strictest environmental licence conditions, to deliver award winning results that wherever possible incorporate innovative environmental designs.

**Project snapshot:** the \$70 million spillway and dam upgrade on Jindabyne Reservoir, an integral part of the Snowy Hydro Scheme, for client Snowy Hydro in New South Wales.

**Challenge:** major upgrades required to dam and spillway to increase environmental flows into the Snowy River. Extensive modifications to existing spillway, along with construction of a new auxiliary spillway and new release tunnel. Remote location, with considerable resourcing challenges. Some redesign required to original concept to meet client objectives.

**Solution:** provide an integrated construction programme involving structures, buildings, roads, bridges, pipes, bulk earthworks and tunnel works occurring concurrently. Resourcing involved team of 24 professional staff and 50 trade staff working together over two years to deliver the project for Snowy Hydro.

**Result:** project completed on time and budget. Exceptional quality in build and construction finishes. Excellent customer relationship during project.

**Project snapshot:** \$33 million Kingscliff sewage treatment plant for client Tweed Shire in northern New South Wales.

**Challenge:** to manage a construct-only project in a high rainfall location, with a high water table and subterranean creek bed under some of the structures.

**Solution:** partnering relationship formalised with Tweed Shire; Fulton Hogan experts worked closely with Shire representatives during the project to resolve technical issues and refine solutions along the way. Services supplied included bulk earthworks, concreting, building and pipe works, water management, electrical services and instrumentation. Extensive landscaping completed around site. Redesign to main oxidation tank to avoid differential settlement. Excess water with high iron content removed from water table and treated before discharge into Tweed River.

**Result:** high quality project that exceeded client expectations. Excellent safety record on site. Project reached finals of the NSW Civil Contractors Federation Earth Awards for 2007.

water





# Transport Infrastructure

Getting from A to B relies on great construction

Fulton Hogan's technical expertise and capabilities has enabled us to deliver a broad range of airport, port and railway infrastructure projects to transport-related customers in Australia and overseas.

We apply the best practices used on all our construction operations to ensure careful planning and management of these projects. This is particularly critical given the nature of these transport hubs and their particular focus on safety, quality and the environment.

We also carry out extensive stakeholder consultation processes, across all project stages. Where necessary, we will use new techniques – for example, non destructive excavation – to ensure we meet stakeholder concerns, whatever these might be.

In Australia, we have worked on a number of recent transport-related projects, including the RAAF's Amberley Air Base, Australia's largest operational air force base; the recent major extensions to Gold Coast Airport's runway facilities; the Flinders Street overpass realignment in relation to its tram routes; and the Port of Brisbane's Terminal 1 – 3 paving refurbishment.

Our experience of working in remote locations has also enabled us to successfully deliver large and complex airport and port works overseas.

transport



**Project snapshot:** \$20 million upgrade to Gold Coast Airport's facilities, Queensland.

**Challenge:** major upgrades to runway, taxiway and apron facilities within a very tight nine month timeframe while the airport remained operational.

**Solution:** establishment of a new 900 metre long taxiway, plus extension of existing apron by 12,000m<sup>2</sup> and existing runway by 485 metres. Works included removal of existing surfaces, stabilising, reshaping, overlay, lighting and associated drainage works. Ongoing stakeholder consultation to manage environmental concerns. Accelerated work schedule involved three and a half months of night shifts. Night works used rapid construction method to prevent flight disruptions during the day and ensure CASA regulations could be upheld. Over 122,000 tonnes of FCR pavement material and 15,000 tonnes of asphalt supplied and laid.

**Result:** Fulton Hogan met all revised target dates and achieved all quality standards. All environmental issues managed successfully and no Lost Time Injuries incurred in over 97,575 man hours.

**Project snapshot:** \$95 million design and construction of Flinders St roadworks, including realignment of tramway, for client VicRoads in Melbourne, Victoria.

**Challenge:** to design and construct tram works around the Flinders Street realignment in accordance with VicRoads and Yarra Trams specifications. Minimise disruption to existing traffic flows, commercial and residential inhabitants and associated infrastructure (power, water, telephone).

**Solution:** project involved demolishing Flinders St overpass and replacing with an at grade intersection, new tram tracks, overhead power supplies and tram platforms. Careful planning of demolition process ensured minimal traffic and residential disruptions, minimal noise and dust effects. Extensive stakeholder consultation and environmental monitoring. Innovative construction methods included non destructive excavation methods.

**Result:** project completed on time and under budget by Christmas 2005. Awarded the 2006 National Civil Contractors Federation Award for Excellence.



# Subdivisions

## Urban development with style

Fulton Hogan's subdivision and landscaping businesses play an integral role in creating land developments designed for Australia's varied terrains and climates.

### **Subdivision services**

Our civil construction departments undertake a range of major construction services for a variety of residential and industrial land development customers. Projects can range from small residential subdivisions, right up to major multi-stage developments.

Our teams carry out major earthworks and pavement constructions, and will also work on specialised constructions such as feature retaining walls, bridges and drainage systems.

### **Landscaping services**

In Victoria, Fulton Hogan also provides customers with a range of landscape solutions, often matched with our asset management services to ensure short or long term maintenance of these sites.

Our solutions can involve us delivering 'one stop shop' services or using the broader resources of Fulton Hogan. Our in-house workshop can construct large steel structures; our quarry can provide high quality granite; and our parks and gardens department can provide maintenance services if required.

We have completed projects for many different customers, including the Royal Botanical Gardens, land developers and local governments. Key projects include the Towerhill Estate Parklands, the Australian Garden Project and numerous other land development projects involving estate entrances, parks, wetlands and play areas.

**Project snapshot:** Fallingwaters Estate, Pakenham, Victoria for client Gillon Group.

**Challenge:** Ongoing subdivision construction of over 500 residential lots, delivering a range of services in a location involving Aboriginal heritage sites.

**Solution:** Monitoring provided by Aboriginal heritage staff to allow artifact identification and management. Work included infrastructure development, road paving, landscaping, retaining walls and water infrastructure.

**Result:** High quality result delivered to customer; healthy customer relationship has extended work on this project into future stages.

**Project snapshot:** Caloundra Rise Retirement Village (Stage 5), Sunshine Coast, Queensland for Southern Cross Care (Qld) Inc.

**Challenge:** Construction of all infrastructure works for retirement village, including 9500m<sup>3</sup> of cut to fill bulk earthworks and negotiation of very narrow road design (making underground services installation a very precise operation).

**Solution:** increased quality assurance audits and site supervision and management enabled efficient completion of earthworks, stormwater, drainage, water reticulation, pavement and kerb/ channel construction.

**Result:** strong relationship developed with the customer; leading to work continuing onto Stages 6 – 10.

subdivisions





# Asset Management

## Keeping community assets up to scratch

From making sure local parks look great to maintaining the road network in Australia's diverse communities, Fulton Hogan works closely with local governments and state authorities to provide real solutions for their changing asset management needs.

We offer customers a complete range of asset management services, including:

- asset surveillance and condition rating
- road, footpath and drainage maintenance
- sign and furniture maintenance and rehabilitation
- street sweeping
- bridge maintenance and rehabilitation
- open space maintenance
- preventative program delivery.

Our asset management programs are designed for each situation and location – safe, reliable and accurate – to address all customer risks and exceed community expectations wherever possible.

asset





The backbone of our asset management service is our e-asset management system. This uses portable mapping and GPS data capturing technology to systematically record asset conditions, report asset defects and log any necessary repairs or replacements. It can be fully integrated into customer information systems, or Fulton Hogan databases, to provide a transparent, real time picture of assets under management.

**Project snapshot:** ongoing supply of civil infrastructure maintenance and construction services to the City of Port Phillip (COPP), Melbourne, Victoria.

**Challenge:** to ensure Port Phillip community has a single supplier of all maintenance and construction services, by taking ownership of COPP assets. Act as custodians of the asset data collected in the field and support requirements for transferring future data collection across to COPP's internal information systems.

**Solution:** extend existing close relationship between Fulton Hogan project staff and COPP representatives (including access to council staff, intranet and information management systems, other planning tools). Deliver high quality maintenance program and asset replacements, with key performance indicators met on a continuous basis. Partnering charter entered into outside contract which aligns with key result indicators and assists in benchmarking and driving whole of life decision making.

Use of staff with extensive knowledge of the area. Integration of Fulton Hogan technology with COPP's implementation of Hansen Asset Management IT system as support infrastructure for Fulton Hogan data collection.

**Result:** all key performance indicators met or exceeded (less than five outstanding reinstatement requests per month); excellent relationship maintained over more than a decade; effective working relationship between Fulton Hogan and technology developers Hansen resulting in increased data transfer efficiencies.

management

# Quarrying

## Quality materials for quality projects



Fulton Hogan is a major supplier of quarry products to the construction industry. Our quarries deliver a long term supply of bulk fill, road base and aggregate products to road and construction projects around Australia.

We have four quarries in Australia: Stapylton and Cedar Creek in Queensland; and Tylden and Tynong in Victoria. These facilities have significant raw assets and their quarrying and crushing capacities are being upgraded continuously, to keep pace with market demands.

As an example, our Tynong quarry is currently supplying over 500,000 tonnes of aggregate for the pavements manufacturing on Victoria largest infrastructure development, the EastLink Tollway project. Our Tylden quarry was recently purchased to fulfill the material requirements for the Calder Freeway project, literally up the road. And our Queensland quarries are being expanded to meet the growing demands of the Queensland market.

Fulton Hogan has also made a substantial investment in mobile crushing plants. These plants are able to work at remote locations around Australasia and the Pacific, to provide superior road base materials.

quarrying



Our quarry managers and technical staff provide customer with detailed technical advice to ensure their material requirements are met, whatever the project. Our Australian NATA accredited laboratories continually monitor our quarrying products to ensure the highest quality is achieved and maintained.

Our quarry staff are also highly skilled at extracting and processing raw materials. All staff are trained in a range of skills, including the handling of explosives, drills and crushers, to ensure safe work standards while consistently meeting product specifications and completion deadlines.

Our quarries are long term developments and all their operations are carried out with the highest levels of environmental consideration. This ensures that all decision making is focused on the future and in the best interest of nearby residents, the community and the environment.

**Project snapshot:** provision of roading material to the \$153 million Calder Freeway development, Malmsbury to Faraday, Victoria.

**Challenge:** VicRoads' source rock approval required before newly purchased Tylden Quarry could become the principal source of roading material supplied to the project.

**Solution:** Fulton Hogan completed a comprehensive core drilling program and undertook rigorous testing of materials and systems to ensure materials and production processes met the customer's rigorous standards (higher than standard ISO certifications).

**Result:** Tylden facility certified in 2007 and will supply a projected total of 300,000 tonnes of aggregate to the Calder Freeway project. Subsequent extension of certification means that Tylden quarry can now supply to all other future VicRoads projects.





# Asphalt & Emulsion Production

Laying down the hot stuff

Fulton Hogan is one of Australasia's leading asphalt production and laying specialists, capable of producing a range of high quality asphalt and emulsion products. These are designed for customers' specific needs and rigorously tested to NATA standards by our trained technical staff.

We have four asphalt plants around Australia: in Minto, NSW, Yatala in Queensland, and two in Dandenong in Victoria. We also operate an emulsion facility at Bacchus Marsh, just west of Melbourne. The output and location of these plants means we are well positioned to meet our customers' needs up and down Australia's eastern seaboard, or further afield. We can also offer customers access to remote asphalt production and laying services.

Our new, state of the art asphalt plant in Dandenong, Victoria, has been commissioned especially for the state's Eastlink Tollway project, the largest paving project in Australia to date and the largest asphalt contract ever tendered in this country. This high tech, energy efficient plant will produce approximately 700,000 tonnes of asphalt for the project in less than two years.

asphalt &

We have also developed a variety of pavement rehabilitation processes and innovations. These include the patented ultra-high pressure watercutter and our Multispray® facility that are featured in our Technical section together with our water blasting and cleaning machines (Frimokar). These operations and their crews work on projects all around Australia, refurbishing surfaces or spraying new surfaces onto roads and other locations such as airports and motor racing tracks as required.

**Project snapshot:** Eastlink Tollway, Dandenong – Mitcham, Victoria.

**Challenge:** to manage the largest Australian paving project and largest asphalt contract ever let. Fulton Hogan also required to overcome industry resource shortages and climate challenges. Short timeframe and reasonably tight budgets.

**Solution:** responsiveness of the Fulton Hogan Board allowed the establishment of a dedicated Astec Double Barrel Hot Mix Asphalt plant within six months to produce 770,000 tonnes of asphalt for the project – the largest single asphalt production facility in Australia. Commissioning of mobile asphalt plant and specialised pavers, material transfer vehicles, compactors and associated trucks and trailers for on-site work. Recruitment of new crews from a range of former occupations, to be trained from scratch in 'on the job' asphaltting.

**Result:** new plant operation comfortably producing the asphalt volumes required on a daily basis. New crews are laying an average of double the normal asphalt laying volume per day, with one crew setting a record for most asphalt laid in a 12 hour shift (over 4,119 tonnes).

emulsion





# Precast Concrete

## Breaking the mould with precasts

Fulton Hogan is committed to providing a consistent and high quality supply of precast building products – no job is too big or too small for our precast operations.

In many cases, the use of precast components on major construction projects improves quality and safety levels, and can be a major factor in meeting - and beating - project deadlines.

In Australia, Fulton Hogan operates a significant precast facility in central Victoria, supplying a broad range of bridging and general building products to our own operations and to external customers in Victoria, New South Wales and South Australia. We also operate mobile precasting facilities, for producing precast components on major project sites.

We work closely with our customers, to ensure we incorporate their individual project requirements into our design and manufacture processes. Over the years, our experienced team has supplied some of Australia's largest contractors with a diverse range of precast products, including prestressed planks, t-roff beams, parapets and abutments.

precast



Our precast yard features two stressing beds, a precast bed and a pre-stress plant mould bed, to produce up to 700 tonnes of precast product per week. It also has one of Victoria's largest storage facilities for finished precast products.

Our operations fully certified with all the quality, safety and environmental requirements specified by ISO standards 9001, 1401 and 4801. We have also invested significantly in technologies such as steam curing and multi-strand stressing facilities, to further improve consistency and quality of supply.

Check out the stats:

Fulton Hogan's precast facilities are able to supply major volumes of precast materials to Australia's infrastructure projects:

- over 110 bridge beams for the Calder Freeway, Kyneton to Faraday stage, Victoria
- over 70 bridge beams for the Pakenham Bypass Stage Z and 3 north of Melbourne, Victoria
- over 70 bridge beams for the Moorabool twin bridges in Geelong, Victoria.

concrete



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