



CGC

**CIVIL GEOTECHNICAL
CONSULTANTS**

CAPABILITY STATEMENT

Creating stronger foundations

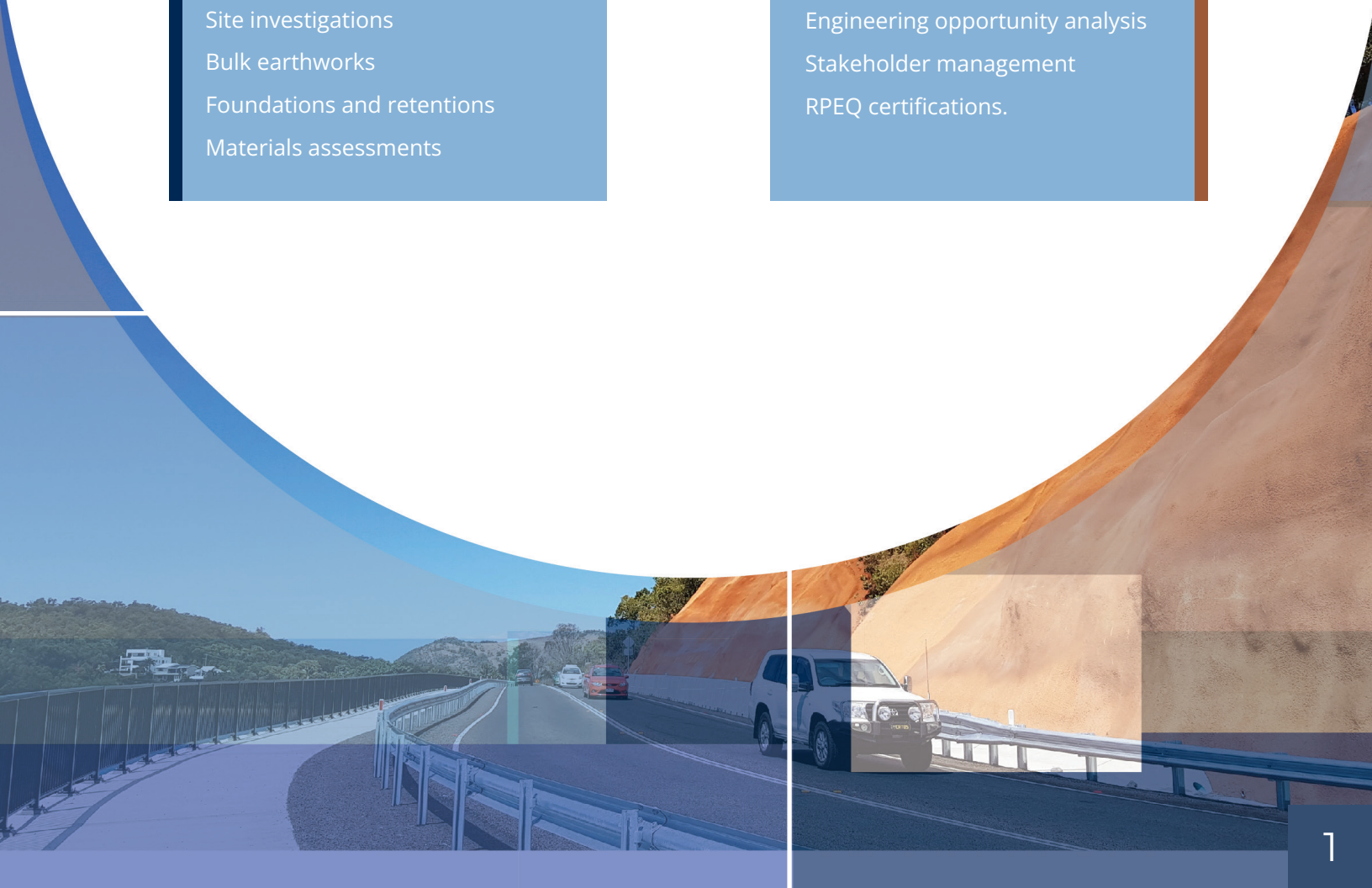
Our extensive experience, deep transport sector knowledge, and highest possible geotechnical accreditation equips us to deliver smart, practical, and cost-effective engineering solutions .

- recognised professionals in transport and civil geotechnics
- industry leader in geotechnical UAV applications and slope risk management solutions
- delivered services to projects worth more than \$20 billion
- provided geotechnical expertise to more than 65 nation-building projects
- invest half our profits in positive social change
- locally-owned in South East Queensland.

Smart, practical
and cost-effective
engineering
solutions

Transport geotechnics
Detailed design
Design management
Construction support
Temporary works
Site investigations
Bulk earthworks
Foundations and retentions
Materials assessments

Slope risk assessments
UAV aerial mapping
Geotechnical risk modelling systems
3D photogrammetric mapping
Geotechnical interpretation
Engineering opportunity analysis
Stakeholder management
RPEQ certifications.





WHY CHOOSE CGC?

We are specialists in transport and civil geotechnics

Our proven specialist skills and delivery are the reason we've been selected as partners on many of South East Queensland's most important transport infrastructure projects.

We are geotechnical aerial mapping specialists

To achieve the smartest engineering solutions, you need the best possible information. Using our aerial mapping technology, we can provide 3D imagery, data modelling, and expert analysis to inform the successful delivery of even the most challenging project.

We have the highest-level accreditations

People trust us. They know from experience that we get the job done to the highest possible engineering standards.

- Qld Dept of Transport and Main Roads GE3 – Geotechnical Engineering
- Qld Dept of Transport and Main Roads Specialist Services Panel – Geotechnical / Geology
- Queensland Government Engineering Consultants Scheme – Geotechnical
- Quality Management Systems ISO9001:2015 certified
- Environmental Management Systems ISO14001:2015 certified
- Occupational Health & Safety Management Systems ISO45001:2018 certified
- CASA Remote Operations Certificate (ReOC) holder.

We are Australia's only certified engineering social enterprise

We are proud to be Australia's only certified social enterprise, delivering smart, practical and cost-effective engineering solutions alongside positive social change.



Design and Analysis

Our experience in geotechnical design and analysis spans major nation-building infrastructure to smaller ground improvement designs. Our project portfolio comprises more than 200 bridges and retaining walls, tunnels, culverts, cuttings, embankments, foundations, pavements and earthworks. We offer specialist skills in geotechnical interpretation, parameter derivation, soft-ground engineering, and numerical and analytical design methods. Our work is underpinned by our detailed knowledge and application of TMR, RMS and relevant Australian standards.

- detailed design
- design management
- temporary works design
- soft soils
- ground improvements
- foundations
- pavements
- retaining structures
- earthworks, levees and cuttings
- geotechnical interpretation
- numerical methods.



Construction Services

We are always looking for opportunities to give our clients more than they expect. This mindset, coupled with our experience in construction support for civil and transport infrastructure projects, means we can find smart solutions and cost savings within hard-dollar environments. Our team has supported a range of major development and infrastructure projects, including numerous upgrades of the Bruce Highway and Gateway Motorway.

- RPEQ certifications
- temporary works
- working platform design and certification
- pile inspections and certifications
- foundation design and inspections
- earthworks and materials management
- slope and batter assessments
- ground treatment, back analysis and preload release
- instrumentation and monitoring.



Site Investigations

Our geotechnical engineers and geologists have extensive experience in the planning and execution of geotechnical investigations to support feasibility studies, business cases, tenders, and the detailed design and operational phases of transport, civil, disaster recovery and urban infrastructure projects. Our experience extends to field geomorphology, terrain, tunnel, shaft and cut mapping, geotechnical interpretation, ground characterisation, and supervision of construction validation tests for geotechnical elements.

- earthworks
- scoping
- mapping
- slope risk assessments
- CPTs
- embankments
- ground characterisation
- site supervision and management
- construction validation
- procurement.

OUR SERVICES



Advisory and Value Engineering

We want our clients to enjoy the peace of mind that comes from knowing that our geotechnical expertise equips us to deliver smart, practical and cost-effective solutions. Our team has a track record of finding unrealised value in hard-dollar contracts through opportunity reviews and risk assessments.

- tenders
- feasibility studies
- root cause analysis
- risk assessments
- opportunity reviews
- constructability reviews
- forensic geotechnical investigations
- supporting submissions for disaster relief
- team leadership and integration.



Aerial Mapping

Our recognised in-house aerial mapping capability means we can identify geotechnical risks early, recommend practical solutions, and work alongside clients to help them deliver the best possible outcomes for their projects.

Using the latest software, our in-house licensed pilots and drone capability, we can provide 3D imagery, data modelling, and expert analysis to deliver detailed and accurate mapping and modelling to meet even the most difficult geotechnical challenges. We use mobile-mapping systems to collect high-resolution data from areas previously considered inaccessible, giving our clients the data they need to identify risks and opportunities within the site domain.

- 3D design and modelling
- risk assessments
- slope hazards
- terrain and surface mapping
- volumetric analysis
- UAV mobile mapping systems.

OUR COMMITMENT TO POSITIVE SOCIAL CHANGE

We believe it's important for us to be more than an excellent engineering firm. We also want to make a positive social impact because we know that when everyone does their bit, we can change things for the better.

That's why we invest half our profits into programs designed to improve learning opportunities for young people.

So when clients work with us, they not only benefit from smart, practical and cost-effective engineering solutions, they also contribute to lasting and positive change in our community.

Our commitment in practice

Our commitment is so much more than words. Here's how we make a practical difference in the lives of young people:

- We partner with the Pyjama Foundation and local high schools.
- We provide weekly mentoring services to more than 30 young people.
- We offer work experience and career pathways for young people.
- We invest in infrastructure, programs and technologies to improve learning opportunities.
- We've delivered interactive STEM-based workshops to more than 300 students.
- We've funded 66 iPads and laptops for students who were unable to access online learning.
- We sponsored the development of a 'Time and Money' game delivered to 1400 foster children across Australia.



Business for good

SELECTED PROJECTS

PROJECTS	CLIENT	SERVICES DELIVERED	HIGHLIGHTS
Tambourine Mountain landslide remediation \$12m, South East Qld 2021 - 2022	SEE Civil Qld Dept of Transport and Main Roads (TMR)	<ul style="list-style-type: none"> • Geotechnical design • Options assessments • Slope risk assessments • Aerial (UAV) mapping • Stakeholder management • Construction certification 	<p>Developed in-house UAV photogrammetry platform to fast-track design</p> <p>Multi-criteria analysis to optimise design</p>
NSW Great Artesian Basin bores \$25m, Western NSW 2021 - 2022	NSW Dept of Planning, Industry and Environment	<ul style="list-style-type: none"> • Hydrogeological and geotechnical advice • Construction advisor using GC21 contract • Certification of construction works 	Key technical advisor for nationally significant ground water bore cap and pipe program to improve water efficiency and pressures within the Great Artesian Basin
Bruce Highway: Caboolture to Steve Irwin Way (package 2) \$150m, Sunshine Coast, Qld 2021 - 2022	Fulton Hogan TMR	<ul style="list-style-type: none"> • Tender advice • Construction support • Geotechnical certification • Temporary works design • Pile certification to MRTS63 • Geotechnical investigation and laboratory testing • Earthworks and materials management advice 	Collaborative partnership providing geotechnical advice for successful tender through to ongoing investigation and construction services
Brisbane River slope mapping Brisbane, Qld Ongoing	Brisbane City Council	<ul style="list-style-type: none"> • Slope hazard assessments • Aerial (UAV) mapping • Asset management • Advisory 	<p>Established cloud-based platform to facilitate ongoing cliff monitoring, modelling and assessment of rock slopes</p> <p>Produced photogrammetric mapping outputs, reports and orthoimage imagery</p>
Bruce Highway: Maroochydore to Mons Rd \$200m, Sunshine Coast, Qld 2020 - 2021	John Holland - Seymour Whyte JV TMR	<ul style="list-style-type: none"> • Advisory • Tender support • Geotechnical design • Construction support • Subgrade inspections • Temporary works design • Earthworks and materials management advice • Instrumentation and monitoring 	Identified cost savings through preload assessments, creating opportunity for early preload release of 6 weeks from planned date
Slope risk assessments Regional Qld Ongoing	TMR	<ul style="list-style-type: none"> • Slope risk assessments • Aerial (UAV) mapping • Advisory • Concept design • Asset management 	<p>Assessment and designs for 400+ slopes across regional Queensland</p> <p>Aerial mapping optimised slope stability assessments, improving understanding of construction risk</p>

Cross River Rail \$4.5b, Brisbane 2018 - 2020	Arcadis Cross River Rail Delivery Authority	<ul style="list-style-type: none"> • Geotechnical certification 	Independent verification of the design for the tunnelling, deep excavations settlement assessments, retention and deep foundations
Bruce Highway: Caloundra to Sunshine Motorway \$812m, Sunshine Coast, Qld 2018 - 2020	Fulton Hogan - Seymour Whyte JV TMR	<ul style="list-style-type: none"> • Advisory • Value engineering • Construction support • Subgrade inspections • Temporary works design • Earthworks and materials management advice 	Geotechnical design advisory for the permanent design Realised significant cost and sustainability improvements by optimising the subgrade design, increasing materials reuse, reducing imported material, and optimising the project risk profile
Beaudesert bridges reconstruction \$15m, Regional Qld 2019	Hazell Bros Scenic Rim Council	<ul style="list-style-type: none"> • Geotechnical design • Construction support • Pile certification • Temporary works design 	Provided geotechnical design and construction support for the three multi-span bridges across a flowing river and steep terrain
Toowoomba Second Range Crossing \$1.6b, Toowoomba 2017 - 2019	Arcadis TMR Nexus Infrastructure	<ul style="list-style-type: none"> • Advisory • Verification • Construction support • Stakeholder management 	Geotechnical advisor and project design and construction verifier of this four-lane carriageway through mountainous terrain with over 40 bridges, cuttings and embankments up to 50m
Gateway Motorway north upgrade \$1.1b, Brisbane 2017 - 2019	Lend Lease TMR	<ul style="list-style-type: none"> • Geotechnical design management • Site investigation • Value engineering • Construction certification • Temporary works • Stakeholder management 	Geotechnical and pavements design manager Managed drilling program, instrumentation and monitoring and temporary works design Stakeholder interface between the client, TMR, BCC, Transurban and the IV
Bruce Highway: Tinana interchange \$40m, Sunshine Coast, Qld 2017	Georgiou TMR	<ul style="list-style-type: none"> • Geotechnical interpretation • Detailed geotechnical design • Slope stability 	Optimisation of reinforced earth retaining wall resulting in significant reduction in strap length and materials savings
Statue Bay disaster recovery \$20m, Capricorn Coast, Qld 2015 - 2016	Arcadis Livingstone Shire Council	<ul style="list-style-type: none"> • Advisory • Feasibility • Tender design • Detailed design • Construction services • Slope risk assessments • Geotechnical investigation • Instrumentation and monitoring 	Geotechnical advisor and designer across all phases from feasibility to construction for this disaster recovery project Provided technical expertise to secure additional \$2m in betterment funding

OUR CLIENTS



OUR ACCREDITATIONS AND AFFILIATIONS

TMR GE3 Prequalification
TMR Specialist Services Panel



OUR PRINCIPALS



David Carson

Principal Geotechnical Engineer
Experience: 22 years +
Qualifications: CPEng | FIEAust |
RPEQ | NER | RMS Slope Risk Assessor |
TMR Pile Assessor | MAICD
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David has extensive experience in roads, rail and tunnelling across NSW, Queensland and Sri Lanka. He is a Fellow of Engineers Australia, an accredited slope risk assessor and is on the Individual Expert Panel with TMR (Geotechnical Engineering and Engineering Geology). David's in-depth knowledge of geotechnical design, along with his track record in analysing risk and identifying opportunities, has resulted in project cost savings and helped him build trusted client relationships.



Barry Land

Principal Geotechnical Engineer /
Engineering Geologist
Experience: 25 years +
Qualifications: CPEng | MIEAust | RPEQ |
NER | RMS Slope Risk Assessor |
TMR Pile Assessor
barry.land@cgc.net.au
0403 304 263

Barry's expertise in managing projects and delivering geotechnical content across feasibility, design and construction has resulted in CGC's involvement in many of Queensland's nation-building projects. Barry is on the Individual Expert Panel with TMR (Geotechnical Engineering and Engineering Geology) and has led large, complex teams, bringing an intimate understanding and robust knowledge of geotechnical investigation, design and construction requirements to the delivery of his projects.



Ian Thompson

Principal Geotechnical Engineer
Experience: 18 years +
Qualifications: CPEng | MIEAust |
RPEQ | NER | RMS Slope Risk Assessor |
RePL | Chief Remote Pilot |
TMR Pile Assessor
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Ian manages CGC's Sunshine Coast office and is an industry leader in UAV (drone) applications. Ian has proven capability for developing practical and cost-effective engineering solutions across geotechnical site investigations, design and construction in Australia, Asia and the Pacific. Ian has developed bespoke design and risk management monitoring portals to manage high-risk slopes for clients such as Brisbane City Council and the Qld Dept of Transport and Main Roads.

OUR CONTACTS

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