



CIVIL SCIENCES
&
ENGINEERING

CAPABILITY
STATEMENT
2024








COMPANY PROFILE

Civil Sciences & Engineering (CSE) was established in 2021, and is a local small business located in Perth, Western Australia. Our core mission revolves around delivering top-tier expertise in the domains of civil and mining industries, encompassing comprehensive services that span design, management, and maintenance.

At CSE, our unwavering commitment to progress and innovation, coupled with a dedicated focus on aligning with client needs, underscores our ability to consistently uphold the highest standards of project execution. We offer a comprehensive service spectrum, from feasibility studies and initial site surveying, progressing through concept and detailed design and documentation, and culminating in proficient project and contract management.

Our approach is characterised by its holistic and integrated nature, which simplifies and streamlines project complexities. This holistic approach not only enhances efficiency but also translates into tangible cost and time savings for our valued clients.

Civil Sciences & Engineering provide a wide range of engineering services including:

-  Civil Design
-  Surveying and Spatial Mapping
-  Geotechnical and Pavement Investigations
-  Laboratory Testing
-  Project Management
-  Infrastructure Asset Management
-  Research and Development

CORE CAPABILITIES

CIVIL DESIGN

Our area of expertise lies in the design of pavements and drainage systems, spanning both greenfield and brownfield sites. We have successfully executed an extensive array of projects, ranging from the rehabilitation of local government roads to detailed designs of intermodal facilities and mine haul roads, all while meeting rigorous and demanding specifications.

Our comprehensive capabilities encompass every facet of project development, commencing with initial planning and extending through feasibility studies, conceptual designs, and culminating in the production of detailed designs, tender documentation, construction drawings, and precise technical specifications. Drawing from over 50 years of collective experience in civil design, we offer highly sought-after knowledge and proficiency that enables us to devise solutions even for the most intricate and complex projects.

Civil design services we provide include, but are not limited to, the following:

Urban road rehabilitation

Rural road design

Site and survey workflows

Corridor modelling

Intersection design

Civil consulting

Stabilisation mix design

Hardstand design

Site classifications

Geotechnical consulting

Intermodal terminal design

Catchment analysis

Mine haul pavement design

Drainage design and analysis

Plan production and documentation

Geotechnical modelling

Materials and quantities

Spray seal design



SURVEYING AND SPATIAL MAPPING

We offer an array of professional surveying and mapping services that leverage cutting-edge GIS modelling and advanced analytical techniques. Our surveying expertise encompasses the utilization of state-of-the-art tools such as GPS, total stations, and 3D scanning, affording us the versatility to tailor our approach to the precise needs and constraints of each project.

The survey data we collect seamlessly integrates with our digital modelling processes, playing a pivotal role in the meticulous planning and development of projects, ensuring precision and efficiency throughout the project lifecycle.

Surveying and spatial mapping services we provide include, but are not limited to, the following:

Topographic survey	Feature survey
Construction survey	Road condition and assessment
Bulk earthworks	GIS and spatial data analysis
Drainage condition	Asset management
Water catchment assessment	Road safety audits



GEOTECHNICAL AND PAVEMENT INVESTIGATION

Our service portfolio encompasses an extensive array of offerings for geotechnical and pavement investigations, tailored to address diverse project demands. Leveraging strategic partnerships, we have the capacity to perform a comprehensive range of both destructive and non-destructive tests, ranging from test pits to falling weight deflectometer testing.

Our in-house traffic management accreditation positions us to conduct investigation activities with efficiency, eliminating the burden of excessive associated traffic management costs. Our profound knowledge and profound understanding of material and pavement properties, coupled with our expertise in performance assessment, enable us to undertake intrinsic analysis of site investigation findings. This meticulous approach allows us to accurately evaluate the existing site conditions and, as necessitated, present suitable design options to meet project requirements.

Geotechnical and pavement investigation services we provide include, but are not limited to, the following:

Test pits	Falling weight deflectometer
Boreholes	Cone penetration testing
Core testing	Clegg impact value
Dynamic cone penetrometer	Infiltration (permeability) testing
Perth sand penetrometer	Visual inspections
Light weight deflectometer	Ball embedment



LABORATORY TESTING

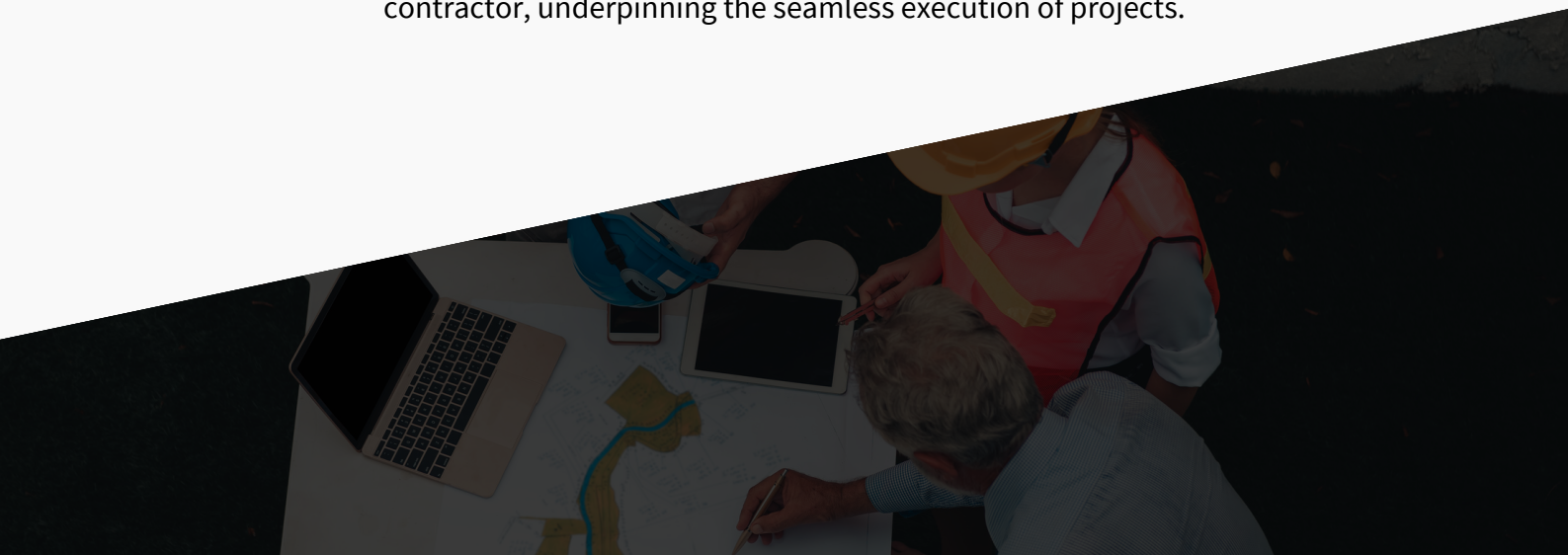
Our strong association with multiple NATA-accredited construction materials testing laboratories ensures the expeditious and cost-efficient execution of laboratory testing procedures. Our testing capabilities encompass an extensive spectrum of materials and methodologies, spanning soil, rock, bitumen, emulsion, asphalt, and concrete, all held to rigorous state and national standards.

The outcomes of these comprehensive tests are frequently integrated with field test data and visual inspection findings, facilitating the precise classification of geotechnical and pavement attributes and the evaluation of in-situ conditions. This synergy of data sources contributes to a holistic understanding of project requirements and conditions.

PROJECT AND CONTRACT MANAGEMENT

We have effectively overseen numerous road construction undertakings on behalf of local government authorities. Leveraging our four decades of experience in the Western Australian Local Government sector, we possess a profound grasp of state and national construction specifications, complemented by an intricate understanding of construction material testing and performance standards.

Our operational ethos emphasizes the critical significance of adhering to AS2124 - General Conditions of Contract, recognizing its pivotal role in ensuring project success. We appreciate the imperative nature of the superintendent's role in fostering a collaborative working relationship between the principal and the contractor, underpinning the seamless execution of projects.





INFRASTRUCTURE ASSET MANAGEMENT

At Civil Sciences & Engineering, we appreciate the paramount importance of infrastructure asset management. Consistent and comprehensive inspections are integral to upholding the functionality and longevity of assets. Our experience extends to conducting thorough road inspections and condition assessments, employing various techniques to precisely chart and document defects and hazards encountered within road networks.

Our profound expertise and comprehension of major condition classification systems empower us to confidently evaluate roads of all types and conditions. We offer a spectrum of options, ranging from manual data collection to automated processes, tailored to accommodate the specific nature and complexity of asset classification and management demands.

RESEARCH AND DEVELOPMENT

Our commitment to civil infrastructure is characterized by a dynamic and forward-thinking collective mindset. Our team comprises highly esteemed individuals in the civil industry, and we shoulder the responsibility of leading transformation and questioning conventional construction methods in favor of more sustainable practices.

At every available juncture, we advocate and facilitate environmentally responsible construction alternatives, including practices such as in-situ material recycling and the incorporation of carbon sequestration in pavement stabilization. Our close collaborations with enterprises dedicated to the development of eco-friendly construction materials and methodologies underscore our dedication to advancing sustainability in the construction sector.



OUR TEAM

DAVID GANGELL | DIRECTOR & CIVIL ENGINEER

David assumed the role of Founding Director at Civil Sciences & Engineering following his graduation from Curtin University in 2021, where he earned his Bachelor of Engineering Honours degree. Throughout his academic and professional journey, David has consistently demonstrated a keen passion for advancing sustainable pavement solutions, with a particular focus on the innovative application of Biochar, as evidenced by his extensive research background. David is highly regarded for his hands-on approach, frequently engaging in on-site activities such as geotechnical investigations and road surveys. These efforts ensure that our clients receive the most current and precise technical information available.

With over five years of experience in the construction and civil industry, David brings valuable insights to the table. Prior to establishing CSE, he worked in a materials testing laboratory, acquiring extensive knowledge of material characteristics and performance — a foundational component of civil engineering.

COLIN LEEK | PRINCIPLE ENGINEER & FOUNDING MEMBER

Colin, one of our founding members, holds the esteemed position of Principal Engineer at Civil Sciences & Engineering. With an impressive track record of over five decades in the field of engineering, he brings a wealth of experience to our organization. Colin actively contributes to civil engineering design projects, assumes superintendency responsibilities, and plays a pivotal role in nurturing the next generation of engineers within our firm. Colin's commitment to advancing a more sustainable future in engineering has earned him nationwide recognition among his peers in Australia. His dedication to ethical and effective engineering practices is a hallmark of his role as Principal Engineer, ensuring that all our clients benefit from the latest and most pertinent knowledge in the field of pavement engineering. Colin's leadership extends to his pioneering work in In-situ Foamed Bitumen Stabilisation research and development, a testament to his innovative approach. Additionally, he actively participates in various committees and research groups, further solidifying his position as a thought leader and influencer in the industry.

ANDREW CHILUFYA | GRADUATE CIVIL ENGINEER

Andrew, a recent graduate with a Bachelor of Engineering Honours from Curtin University in 2022, possesses a solid foundation in Pavement Performance research. His entry into the civil engineering domain has injected fresh knowledge and an unwavering commitment to sustainability. Andrew is a rising star in the field of Civil Engineering, consistently demonstrating his unwavering dedication to delivering exceptional experiences to our clients. He exhibits a meticulous attention to detail, upholds strong ethical principles, and is resolutely devoted to furnishing clients with precise and sustainable engineering expertise. Andrew's experience with Civil Sciences & Engineering encompasses a wide range of projects, including pavement investigation, design, mechanistic analysis, and empirical designs. His portfolio spans from robust heavy-duty hardstands to road rehabilitation initiatives for local government authorities, consistently showcasing his proficiency in addressing diverse engineering challenges.

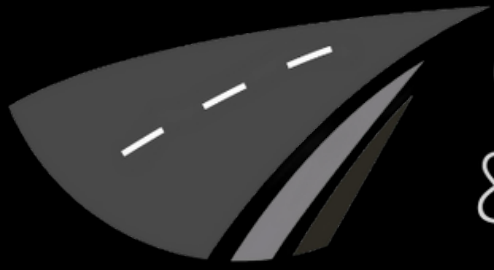
OUR TEAM

MARCOS MAGALHAES | CIVIL ENGINEER & DESIGNER

Marcos is a seasoned professional engineer boasting a comprehensive background encompassing more than six years of expertise in civil and structural engineering. Throughout his career, he has successfully executed a diverse portfolio of civil and structural ventures, catering to both private and public clients in Western Australia and Brazil. Marcos specializes in the meticulous design of intricate infrastructure projects, demonstrating a steadfast commitment to aligning his work with the rigorous standards of Australia and the specific requirements stipulated by relevant public authorities. His unwavering dedication shines through in every facet of his work, as he consistently delivers exceptional results for both our clients and projects. Marcos is a valued and highly dedicated member of the Civil Sciences & Engineering team, and he extends this same level of dedication to every client engagement. His proficiency extends to the utilization of various design software tools, including CAD, further enhancing his ability to deliver precise and cutting-edge design solutions.

KATE ROZMARNIEWICH | ENVIRONMENTAL SCIENTIST & OPERATIONS COORDINATOR

Kate, with a degree in Biochemistry and Molecular Biology from a renowned Canadian research institution, has charted a diverse career path spanning Medical and Biological Research, as well as Forestry and Natural Resource Management. Over the last six years, she has excelled in contract positions across Canada, the USA, and Thailand, serving as a Forestry Supervisor, Biological Researcher, and Conservation Biologist. With a unique skill set and a deep commitment to environmental sustainability, Kate brings a fresh perspective to Civil Sciences and Engineering. Her role is instrumental in steering our efforts towards environmentally conscious practices. As the Operations Coordinator, Kate plays a crucial role in ensuring the safety and efficiency of our fieldwork and sampling activities. She is adept at creating secure work environments, developing internal Standard Operating Procedures, conducting Risk Assessments, and formulating Company Policies. Kate takes charge of organizing and preparing field equipment, maps, and data collection systems, significantly contributing to our operational efficiency. Her leadership extends to guiding the team towards environmentally responsible practices. In addition to her extensive experience, Kate holds memberships in several professional organizations, including being a Professional Biologist with the College of Applied Biology in BC, Canada. She is also a Professional Member of the Geospatial Council of Australia, the Environmental Institute of Australia and New Zealand (EIANZ), and the Sustainable Engineering Society (SES). Furthermore, Kate is an Affiliate Member (AffillEAust) of Engineers Australia and an Associate Member (AMIEEnvSc) of the Institution of Environmental Sciences."



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