



Capability Statement

NR Engineering Consultants Pty Ltd

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About Us

NR Engineering Consultants Pty Ltd is an Australian-owned, multidisciplinary engineering consultancy delivering integrated geotechnical, structural, civil and environmental engineering services across New South Wales and interstate.

The firm provides services to support local councils, developers and contractors, with demonstrated capability in delivering projects in accordance with statutory requirements, Australian Standards and recognised industry guidelines.

NR Engineering Consultants adopts a risk-based, quality-driven approach to project delivery, providing independent, technically defensible and auditable engineering advice from project inception through to construction and completion.

Acknowledgement of Country

NR Engineering Consultants acknowledges the Traditional Custodians of the land on which we live and work and pays our respects to their Elders past and present. We recognise the enduring connection of Aboriginal and Torres Strait Islander peoples to land, waters and culture, and acknowledge their continuing contribution to the management and care of Country. We are committed to working respectfully and collaboratively with Aboriginal and Torres Strait Islander peoples and communities.

Our Vision

NR Engineering Consultants' vision is to provide the cost effective, sustainable and practical engineering solutions which are tailor-made for the in-situ conditions as per individual requirements of our clients that distinguish NR Engineering in the industry.

Our attributes are:

- Understanding our client's goals.
- Prioritize Client's project timelines.
- Cost effectiveness.
- Sustainability.
- Maintaining and implementing quality standards

Our Mission

NR Engineering Consultants' mission is to help our clients to achieve their milestones by helping them in achieving regulatory approval, effectively managing project resources, optimization of project finances to a successful product delivery with a thorough understanding of geotechnical, environmental, structural and civil engineering hazards.

Our Values

NR Engineering Consultants effectively deliver value projects through:

- Certified Professionals which are well known in civil construction.
- Delivery of service at reduced costs with quality documentations.
- Innovative and sustainable solutions

Core Service Areas

NR Engineering Consultants provides the following professional engineering services in accordance with council, State and Federal Government requirements, relevant Australian Standards and authority-specific technical guidelines.

- Geotechnical Engineering
- Structural Engineering
- Environmental Engineering
- Civil and Stormwater Engineering

Professional Credentials and Registrations

NR Engineering Consultants is made up of vastly experienced professionals from diverse backgrounds, with local and international practical experience of dealing with significantly variable terrains. Our highly experienced professionals are well known in the industry and accredited with the following:

- Institute of Engineers Australia
- Australian Geomechanics Society
- Board of Professional Engineers Queensland
- NSW Government Fair-trading – Design Practitioner Scheme Class 2, 3 & 9c

Geotechnical Engineering

NR Engineering Consultants specialize in providing geotechnical consulting services for residential, commercial and infrastructure developments.

Our team is experienced in dealing with a wide range of challenging projects, including geotechnical investigation, slope stability assessment, deep excavations in soil and rock, groundwater management, ground improvement, and geotechnical instrumentation and monitoring.

Our team is motivated to provide economical and sustainable advice to our clients to avoid unnecessary spending on projects of all scope and scale.

Range of Geotechnical Engineering Services

NR Engineering Consultants provide Geotechnical Engineering services and professional support in the following areas:

- Geotechnical investigation and reporting
- Specialist Engineering Assessment for Sydney Water
- Landslide risk assessment in accordance with the methods of the Australian Geomechanics Society (Landslide Risk Management, AGS Subcommittee, May 2002 and March 2007).
- Lot classification in accordance with applicable Councils requirements
- Shoring design for excavations in variable ground conditions
- Foundation design for variable ground conditions
- Existing pavement assessment, and rigid and flexible pavement design
- Soil slope stability analysis and remedial measures design
- Rock face stability assessments and stabilization measures design
- Groundwater infiltration and groundwater management
- Salinity, thermal resistivity, soil aggressivity assessments
- Finite Element Analysis (FEA) for impact assessment of proposed developments on neighbouring infrastructures, using software such as PLAXIS 2D & 3D, Seep/W and Slope/W
- Vibration, settlement, groundwater, and lateral earth movement monitoring
- Construction related QA/QC services, including inspections and certifications
- Construction aggregate, quarries and borrow areas studies.
- Geotechnical laboratory testing services including physical and chemical testing.
- Level 1 and Level 2 supervision of Earthworks

Geotechnical Investigations

The objective of an intrusive geotechnical site investigation is to establish the subsurface conditions for a proposed development to assist in the civil and structural design. Each site investigation is specifically designed to suit the Client's requirements and incorporates appropriate investigation techniques for the anticipated, site-specific geology and hydrogeology. Field investigation findings and laboratory test results are analysed to develop a site-specific Geotechnical Profile. Geotechnical design parameters are then developed for commercial and



residential buildings, roadways, bridges, utilities and sewage lagoons. NR Engineering Consultants carry out preliminary and detailed Geotechnical Investigations in accordance with AS1726-2017 Geotechnical Site Investigations.

Specialist Engineering Assessment

NR Engineering Consultants can provide services to prepare a complete Specialist Engineering Assessment Reports to comply with Sydney Water requirements. Our professional (Geotechnical, Civil and Structural Engineers) are qualified and have appropriate skillset to sign off the SEA assessment reports and checklists.

Foundation Design

NR Engineering Consultants can provide foundation designs which are cost effective, sustainable and detailed for developments ranging from single-storey residential dwellings to multi-storey buildings.

Our geotechnical team provides recommendation on the design of shallow footings, deep footings, ground retention systems requirements based on in-situ ground conditions, assessing soil, rock, groundwater, and settlement risks to provide safe, sustainable and cost-effective solutions.

Slope Stability Assessment

NR Engineering Consultants' Geotechnical Team includes trained and chartered Professional Engineers with vast experience in the Australian Geomechanics Society (AGS) Slope Risk Assessment methodology and international practice.

After a detailed site inspection, NR Engineering Consultants conduct computer aided analysis for assessing sloping ground to propose remedial measures suitable for in-situ ground conditions. We can additionally provide advice on the monitoring of ground deformation such as the potential movement on deep retaining structures.

Drilling Services

NR Engineering Consultants provides full range of drilling services to complete various intrusive investigative drilling. Our drilling rigs utilize various drilling methodologies such as auger drilling, rotary mud and air drilling, diamond rock coring and concrete coring methods. Further capabilities include in-situ testing such as Standard Penetration Testing (SPT), Dynamic Cone Penetration (DCP) Testing, groundwater monitoring well and inclinometer installation.

Structural Engineering

NR design professionals have extensive experience in the design and supervision of a wide range of structures including multi-storey residential apartments, retail, commercial, office, industrial and factory workshop developments as well as water retaining structures. Our structural engineers and draftspersons are able to provide investigation, analysis and engineering design services to clients on both large and small projects.

Design is the principal focus of the structural team, working collaboratively with architects, other disciplines and stakeholders to explore, analyse and develop structural solutions for each project. An ideal structural solution takes into account material quantities, economics, functionality, aesthetics and long-term sustainability of the project.

Our reputation for sound and practical engineering services extends to high quality documentation with technical staff proficient in a suite of modern design and drafting software.

Range of Structural Engineering Services

Our structural engineering services include:

- Finite element modelling Structural steel
- Shoring and underpinning Piling design
- Post-tensioning design
- Reinforced concrete design
- Timber structure design
- Temporary works design
- Facade design
- Formwork design and inspections
- Tilt-up precast concrete panel construction Propping design for tilt-up panels
- Vibration control of wind-sensitive tall buildings
- Dilapidation surveys of properties and structures prior to development on neighbouring properties. These are increasingly requested by Councils to be done by geotechnical and or structural engineers to ensure the integrity and independence of the surveys

Foundation Design

NR Engineering Consultants can provide detailed foundation designs for developments ranging from single-storey residential dwellings to multi-storey buildings.

Our structural engineers design foundations to support the building loads, optimising materials, structural integrity and long-term performance for residential, commercial and industrial projects. Our structural engineering team provide design for shallow foundation options including Strip and Pad footings, Rafts; and Piled Rafts and deep foundation including Bored piers, Continuous Flight Auger (CFA) piles, Screw piles, and Driven piles.

Shoring & Retention Systems

NR Engineering Consultants are regularly involved in development projects with multiple level basements, which require retaining structures to support the deep excavations. We have experience in providing design options for various retaining structures suitable for excavations through variable ground conditions, including:

- Reinforced concrete cantilever walls
- Anchored retaining walls, Contiguous and Secant pile walls
- Jet grout options
- Post and plank
- Gravity walls – gabions, crib-walls
- Reinforced Earth /Soil Structures (RSS)
- Diaphragm Walls and Shafts
- Steel sheet pile walls

Environmental Engineering

NR Engineering Consultants partnered with leading environmental consultants in the industry. The team consists of a range of scientists and engineers, certified environmental practitioners and licensed asbestos assessors.

Our team specialises in the Contaminated Land Management of soil, groundwater, surface water, vapour and hazardous ground gases.

Range of Environmental Engineering Services

Our environmental services include:

- Preliminary Site Investigation (PSI) and Detailed Site Investigation (DSI)
- Contaminated Site Specialists
- Soil analysis
- Groundwater analysis
- Air and gas monitoring
- Asbestos and hazardous materials (HAZMAT) analysis
- Environmental Consulting
- Remediation Action Plans (RAP)
- Waste classification
- Environmental Management Plans (EMP)
- Construction Environmental Management Plan (CEMP)
- Environmental monitoring of landfills, soil gas, surface water, groundwater and air quality

Acid Sulfate Soil Remediation & Management

Acid Sulfate Soils (ASS) are typically situated in wet, anaerobic (low oxygen or ‘reducing’) environments and are present along much of the NSW coast and within inland river or swamp systems. ASS can become disturbed during excavation and broad-scale drainage works or as a result of groundwater dewatering. These activities expose the sulfide minerals to air, which cause oxidation of the sulphide minerals, leading to the formation of sulfuric acid.

ASS occur all around the country and if left unmanaged the sulfide oxidation process can make the groundwater acidic, causing naturally occurring heavy metals (such as iron, aluminium, arsenic and copper), to be leached from the soil and transported to surface water bodies. This can lead to adverse impacts on vegetation, aquatic organisms (including ‘fish kills’), as well as causing damage to steel and concrete structures (corrosion) such as pipes, culverts, bridge piers or retaining walls.

NR Engineering Consultants provides the following acid sulfate soils services:

- Field assessment of potential and actual acid sulfate soils (PASS and AASS)
- Advice on the handling, treatment and disposal of acid sulfate spoil
- Assessment and management of water quality impacts
- Management of areas affected by acid sulfate soils, including remediation of impacted sites
- Development of Acid Sulfate Soil Management Plan (ASSMP).

Civil Engineering

NR Engineering Consultants is dedicated to providing a broad range of tailored Civil Engineering services for residential, commercial, and infrastructure development projects. Our focus on excellence and innovation ensures that we deliver solutions that meet both regulatory requirements and the specific needs of each client. Our expertise in stormwater management involves developing customized management plans that comply with council regulations, effectively controlling stormwater runoff and minimizing environmental impacts. We also specialize in flood modelling and overland flow studies to assess potential risks and ensure compliance with local regulations. By understanding water movement across sites, we can implement effective mitigation measures that protect both the development and surrounding areas.

Range of Civil Engineering Services

Our tailored civil engineering services include:

- Preparation of Development Applications (DA), Construction Certificates (CC), and Complying Development Certificates (CDC) to facilitate approvals with local councils,
- Conducting detailed hydraulic and hydrologic assessments to evaluate site-specific water management conditions
- Design and analyses of detention and retention basins using advanced modelling software including DRAINS and MUSIC for council compliance to ensure efficient water management systems
- Flood modelling & overland flow studies for council compliance
- Roads and Pavement design, as well as public domain works

Pavement Design

Pavement analyses and design is often carried out for the construction of new roads within new residential and industrial subdivisions which may include, roundabouts, car parks, industrial hard stand areas and bus stations. These may include flexible and rigid (concrete) pavements. NR Engineering Consultants can carry out pavement evaluation of existing pavements for assessment of road, pavement material and subgrade conditions and for the design of asphalt overlay. Our experienced, professional team provides options, applicable to new pavement configurations, making it possible for you to select a design that is economical and practical for your purpose.

Commitment to Quality, Safety and Sustainability

NR Engineering Consultants operates under structured quality management principles to ensure consistency, accuracy and traceability of deliverables. Our systems are aligned with the local regulations and safety requirements.

Quality Assurance

- Independent technical review of deliverables
- Compliance checks against relevant standards and authority requirements
- Document control and version management
- Clear audit trails suitable for council and government review

Work Health and Safety (WHS)

NR Engineering Consultants is committed to providing a safe working environment for staff, clients and stakeholders. Site activities are undertaken in accordance with WHS legislation, Safe Work Method Statements (SWMS) and client-specific safety requirements.

Environmental Responsibility

Environmental considerations are integrated into project delivery to minimise impacts on land, water and surrounding assets. Sustainable design options are considered where practicable and aligned with authority guidance.



AUSTRALIAN
GEOMECHANICS
SOCIETY



BOARD OF
PROFESSIONAL
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