

# WORK THAT LASTS.



SPECIALIST SLOPE STABILISATION & REMEDIATION FOR DRFA WORKS





# GROUND STRENGTH

SEE Group is a leading, family-built, Australian civil construction and engineering business with proven capability in delivering complex Disaster Recovery Funding Arrangements (DRFA) projects for local State governments and authorities (LGA's) across Queensland and New South Wales.

We specialise in slope stabilisation, geotechnical remediation, and restoration of essential public infrastructure following natural disaster events. Through our in-house delivery teams and long-term partnerships with specialist subcontractors, we bring together the technical, logistical, and community expertise needed to deliver efficient, safe, and sustainable outcomes in challenging terrain.

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# WHY SEE GROUP



## FULLY INTEGRATED DELIVERY MODEL

In-house civil, piling, and ground stabilisation teams.



## COMMITMENT TO LOCAL OUTCOMES

Local employment, training and supply chain engagement.



## PROVEN DRFA TRACK RECORD

Trusted by State and LGA's across multiple districts.



## SAFETY AND ENVIRONMENTAL EXCELLENCE

Zero LTI performance and strong compliance culture.



## AGILE RESPONSE CAPABILITY

Rapid mobilisation and adaptive work sequencing.



## FIRST RESPONSE EMERGENCY WORKS

Rapid response to damaged or potentially damaged infrastructure during emergency situations.



# OUR CAPABILITIES

SEE Group delivers a full suite of slope stabilisation and remediation works across both emergency response and reconstruction phases.



## SOIL NAILING AND ANCHORING SYSTEMS

Design and installation of self-drilling soil nails and anchors, shotcrete application, and structural facing systems.



## SHEET PILING

Installation and extraction of sheet piles using our in-house piling setup and equipment fleet, ensuring rapid mobilisation and control of program and cost.



## GABION BASKET RETAINING STRUCTURES

Design and construction of gabion and terramesh walls, integrated with subsoil drainage and erosion protection.



## ROCKFALL MITIGATION

Mechanical and manual scaling, installation of mesh drapes, rockfall barriers, and attenuator systems.



## GEOTECHNICAL DRILLING AND GROUND IMPROVEMENT

Bored piles, passive dowels, grouting and subsoil drainage for slope remediation.



## ENVIRONMENTAL AND COMMUNITY MANAGEMENT

Works in constrained and environmentally sensitive corridors, supported by tailored environmental management systems and cultural heritage engagement.



SHEET PILING WORKS FOR CURRUMBIN CREEK ROAD RESTORATION



# OUR TECHNICAL STRENGTHS

- 
**IN-HOUSE PILING AND GROUND SUPPORT CAPABILITY**  
 Enabling flexible and efficient delivery across remote or access-restricted locations.
- 
**EXPERIENCE IN HIGHLY CONSTRAINED AND GEOTECHNICALLY COMPLEX SITES**  
 Including live traffic environments and steep terrain.
- 
**SPECIALIST GEOTECHNICAL EXPERTISE**  
 Including rope access and temporary works design for complex slope stabilisation.
- 
**COLLABORATIVE DELIVERY WITH STATE GOVERNMENTS AND LOCAL COUNCILS**  
 Target Price, ITC and cost-reimbursable frameworks.
- 
**PROVEN PERFORMANCE UNDER DRFA FRAMEWORKS**  
 Including compliance with road authority specifications, environmental approvals, and open-book governance.





# RESTORATION OF MAJOR LANDSLIPS

- ▶ CLIENT: TWEED SHIRE COUNCIL
- ▶ LOCATION: RESERVE CREEK ROAD, TYALGUM ROAD
- ▶ TIMING: 2023 - 2025

## PROJECT SUMMARY

The Tweed Shire LGA experienced significant landslips following the extreme weather events of early 2022. SEE Civil was engaged to deliver emergency stabilisation and permanent restoration across multiple road corridors, reinstating critical access routes and enhancing long-term resilience in line with DRFA recovery objectives.



## SCOPE OF WORKS

SEE Civil delivered a full design-and-construct solution, developing temporary and permanent stabilisation systems to restore safe road access. Works included:

- Progressive design development from 30% to 100% for all sites.
- Implementation of temporary slope retention systems and traffic management to maintain through-access.
- Coordination and engagement of specialist subcontractors for soil nailing, sheet piling, bored piling, rope access, and shotcrete works.
- Pavement reinstatement, drainage, guardrail installation, and landscaping.
- Collaboration with Council and utility providers to assess and protect existing services.



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## SITE-SPECIFIC SCOPE HIGHLIGHTS

- Reserve Creek Road: Temporary and permanent retention, soil nailing and shotcrete, reinstatement of downslope and upslopes and road pavement, landscaping, and barrier systems.
- Tyalgum Road: Large-diameter bored piles, soil nailing, slope rectification, temporary lane management, and reinstatement of private property and services.
- Limpinwood Road (A & B): Local slope failure rectification, single-lane contraflow management, pavement reinstatement, and safety improvements.

## CHALLENGES

- Unstable ground conditions and continued rainfall during recovery period.
- Restricted site access on narrow rural roads.
- Need to maintain traffic flow during all stages of construction.
- Coordination of multiple high-risk geotechnical techniques across concurrent sites.
- Accelerated delivery schedule under DRFA funding deadlines.



## SOLUTIONS AND DELIVERABLES

Fast-tracked temporary design to enable immediate slope retention and safe traffic passage.

Integrated design development from preliminary to final stage within tight timeframes.

Deployment of specialist teams (soil nailing, bored piling, shotcreting) to address varying ground conditions.

Close stakeholder engagement with Tweed Shire Council and DRFA auditors to ensure compliance and transparent reporting.

Delivery of long-term, low-maintenance solutions with 100-year design life.

## OUTCOMES

- Full restoration of essential road links following severe weather events.
- Improved slope stability and public safety across all sites.
- Compliance with DRFA recovery and resilience standards.
- Successful delivery under challenging conditions with minimal disruption to local communities.
- Enhanced resilience of transport infrastructure against future events.

## PROJECT HIGHLIGHTS

- Seamless integration of civil and geotechnical disciplines.
- Rapid mobilisation following natural disaster events.
- Innovative use of temporary retention systems to maintain safety and access.
- Positive stakeholder and community feedback.





- ▶ CLIENT: TRANSPORT AND MAIN ROADS (TMR)
- ▶ LOCATION: CURRUMBIN CREEK ROAD, GOLD COAST, QUEENSLAND
- ▶ TIMING: 2023 - 2025

#### PROJECT SUMMARY

Following the extreme weather events of early 2022, Currumbin Creek Road experienced downstream embankment failures that threatened road safety and local access. SEE Civil, as Principal Contractor for Transport and Main Roads, was engaged to deliver restoration works across four key creek-side sites. These works required a highly sensitive environmental approach to protect the waterway, local flora and fauna, and the surrounding community while reinstating road embankments and pavement infrastructure.



#### SCOPE OF WORKS

SEE Civil delivered a full design-and-construct solution, developing temporary and permanent stabilisation systems to restore safe road access. Works included:

- Progressive design development and implementation of tiered gabion cages baskets to stabilise creek embankments.
- Temporary sheet pile cofferdams to provide access below low tide levels while protecting the creek.
- Excavation of embankments with management of acid sulphate soils and dewatering of construction areas.
- Installation of water treatment systems to manage turbidity and meet strict discharge criteria.
- Construction of lower and upper gabion walls, scour protection, and reinstatement of embankment and pavement.
- Implementation of revegetation zones between gabions and road verge using native plantings.
- Reconstruction of road pavement, guardrails, line marking, and signage.
- Traffic management to maintain access for vehicles, cyclists, and pedestrians during construction.



## SITE-SPECIFIC SCOPE HIGHLIGHTS

- Site 1 – Radar ID 74665 (Ch. 4.545–4.590): Batter and verge reconstruction, lower gabion wall in tidal zone, upper gabion-reinforced embankment.
- Site 2 – Radar ID 84002 (Ch. 4.890–4.925): Rockfill capping and coir matting for soil stabilisation, full embankment and pavement reinstatement.
- Site 3 – Radar ID 77571 (Ch. 5.950–5.967): Gabion and pavement reconstruction, revegetation zones, and scour protection.
- Site 4 – Radar ID 77572 (Ch. 6.070–6.100): Reinforced gabion walls, embankment reconstruction, water treatment and dewatering systems.

## CHALLENGES

- Construction below the creek's low tide level requiring temporary cofferdams.
- Management of acid sulphate soils and prevention of contamination to the waterway.
- Need to maintain traffic flow during all stages of construction.
- Restricted site access and heavy road, pedestrian, and cyclist traffic.
- Delivery of environmentally sensitive works with strict flora and fauna protection requirements.
- Compliance with DRFA scheduling deadlines and environmental approvals from Gold Coast City Council.

## SOLUTIONS AND DELIVERABLES

Installed sheet pile cofferdams (9–12m lengths) using 26-tonne excavators with vibrating heads to enable safe works below low tide.

Reinstated road embankments, pavement, guardrails, line marking, and signage.

Developed a water treatment system to manage turbidity and meet discharge objectives (TSS  $\leq 50$  mg/L at 2 L/s capacity).

Maintained traffic flow using temporary traffic control measures while ensuring worker and public safety.

Excavated and exported acid sulphate soils to certified disposal facilities.

Coordinated closely with TMR, Gold Coast City Council, and supervising specialist subcontractors for environmental compliance.

Constructed tiered gabion walls to stabilise embankments, incorporating scour protection and revegetation zones.

## OUTCOMES

- Full restoration of creek-side road embankments and pavements, ensuring long-term structural stability.
- Environmental protection measures minimised impacts on Currumbin Creek and surrounding habitat.
- Successful construction within a high-risk tidal environment, demonstrating innovation in temporary access and water management.
- Compliance with DRFA funding and environmental approvals.
- Positive stakeholder and community engagement with minimal disruption during peak traffic periods.

## PROJECT HIGHLIGHTS

- Innovative use of tiered gabion cages baskets in a tidal creek environment.
- Effective management of acid sulphate soils and water quality.
- Seamless integration of civil, geotechnical, and environmental disciplines.
- Safe and efficient traffic management in a high-use corridor.
- Implementation of revegetation zones to enhance post-construction environmental outcomes.





- ▶ CLIENT: TRANSPORT AND MAIN ROADS (TMR)
- ▶ LOCATION: KENNEDY HIGHWAY, KURANDA RANGE, CAIRNS, QUEENSLAND.
- ▶ TIMING: 2024 - 2025



#### PROJECT SUMMARY

In December 2023, Tropical Cyclone Jasper caused widespread damage across Far North Queensland, with the Kennedy Highway sustaining significant landslips and infrastructure failures along the Kuranda Range. SEE Civil was engaged by Transport and Main Roads (TMR) to restore this critical transport link under the DRFA program.

Spanning approximately 44 kilometres between Smithfield and Mareeba, the project encompasses 36 geotechnical slip sites, primarily concentrated between Smithfield and Kuranda. The Kuranda Range Road is heritage-listed and traverses the Wet Tropics World Heritage Area, requiring careful management of environmental, cultural, and operational sensitivities.

Delivered under a Target Price Contract (TPC) model, the project emphasised collaboration between SEE Civil, TMR, and the design partner. Interdisciplinary design and construction workshops ensured that complex designs translated into safe, buildable, and efficient construction outcomes.

#### SCOPE OF WORKS

SEE Civil delivered multidisciplinary civil and restoration works across 36 separate sites, including:

- Geotechnical stabilisation of slips through scaling (manual and mechanical) to remove unstable material.
- Earthworks and haulage of slip debris to approved disposal locations.
- Subgrade recompaction and reconstruction of unbound base and subbase layers.
- Asphalt surfacing and pavement tie-ins with existing road assets.
- Drainage reinstatement and upgrades, including surface, subsurface, cross-drainage, and wall drainage systems (gabion, terramesh, and geofabric integration).
- Localised pavement reconstruction and slope protection.
- Full traffic control and coordination on a live highway carrying over 10,000 vehicles daily.
- Environmental and cultural heritage compliance within a World Heritage-listed rainforest corridor.



## CHALLENGES

1. **WORKER SAFETY DURING SHOTCRETE APPLICATION**  
Manual shotcrete application by rope access teams on steep slopes presented significant safety risks, including working at height, manual handling, and heat exposure in North Queensland's tropical climate.
2. **SAFE ACCESS FOR DRILLING OPERATIONS**  
Rope access workers manually manoeuvring wagon wheel drill rigs on steep slopes faced risks associated with handling heavy equipment on unstable terrain.
3. **ENVIRONMENTALLY AND CULTURALLY SENSITIVE SETTING**  
Construction activities were undertaken within a World Heritage-listed area featuring protected flora and fauna, steep erosion-prone slopes, and high rainfall. Safeguarding water quality and biodiversity while maintaining project efficiency was paramount.

## SOLUTIONS AND DELIVERABLES

**Innovation in Shotcrete Application:** A robotic spray nozzle mounted on a mobile boom pump truck replaced manual shotcrete application. This eliminated the need for suspended rope access spraying, significantly improving worker safety, reducing manual handling, and accelerating delivery.

**Targeted Environmental Management:** Site-specific erosion and sediment controls contained impacts within the work footprint. Custom stormwater and rehabilitation plans incorporated drainage controls, sediment basins, and revegetation measures to stabilise soils and protect waterways. Where disturbance to protected species was unavoidable, TMR and SEE Civil coordinated translocation procedures to mitigate long-term ecological impacts.

**Enhanced Access and Drilling Safety:** Temporary working pads were designed and constructed to extend the reach of Manitou drill rigs, removing the need for manual winching of rigs on steep slopes. This approach was supported by detailed reach analysis and FSG-approved Temporary Works designs, setting a new benchmark for safety and efficiency on similar TPC projects.

**Collaborative Design and Construction Integration:** Regular workshops between design engineers and field crews allowed real-time design refinement, risk mitigation, and value engineering. Lessons learned from active sites informed design adjustments across other locations, improving consistency and outcomes.



## OUTCOMES

- Restoration of 36 damaged sites across 44km of critical highway within a World Heritage corridor.
- Improved safety outcomes through automation of high-risk tasks.
- Environmentally responsible restoration that safeguarded heritage, biodiversity, and water quality.
- Effective delivery under live traffic conditions with minimal disruption to over 10,000 daily road users.
- Strong collaboration between TMR, design partners, and SEE Civil under the Target Price Contract framework, promoting innovation and continuous improvement.

## PROJECT HIGHLIGHTS

- Seamless integration of design, construction, and environmental disciplines under TPC delivery.
- Industry-leading use of robotic shotcrete technology to enhance safety and productivity.
- Tailored erosion, sediment, and water management strategies in a World Heritage environment.
- Proven methodology for safe drilling operations on steep terrain.
- Exemplary collaboration between SEE Civil, TMR, and design partners, delivering resilient outcomes for Queensland's critical transport network.





# EMBANKMENT RECONSTRUCTION

- ▶ CLIENT: RICHMOND VALLEY COUNCIL
- ▶ LOCATION: RICHMOND RIVER, WOODBURN, NSW
- ▶ TIMING: AUG 2024 - FEB 2025

## PROJECT SUMMARY

The Richmond River project involves reconstructing embankments to restore stability and protect nearby infrastructure. SEE Civil delivered design and construction works, including survey, earthworks, and rock protection installation. The project strengthens riverbank resilience through engineered stabilisation, scour protection, and environmental rehabilitation for long-term performance and minimal impact.



## SCOPE OF WORKS

SEE Civil's scope includes both design and construction deliverables:

- Detailed survey of the sites with sufficient data to support design of reconstruction and stabilisation options.
- Preparation of engineering plans outlining detailed options for rock retaining systems and scour protection measures.
- Bulk excavation and removal of sediment materials to expose firm foundation base.
- Supply and installation of geotechnical matting along the embankment.
- Supply and placement of bulk fill and crushed rock protection at the designed slope.
- Reinstatement of roadside table drains to restore surface water management.
- Site clean-up and rehabilitation of all disturbed areas.

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## CHALLENGES

- **Riverbank Stability and Access Constraints**  
Working along an active river system required careful planning to maintain embankment stability during excavation and reconstruction while managing access for heavy machinery in constrained areas.
- **Scour and Erosion Risks**  
Ongoing river flow and fluctuating water levels posed a risk of scour during and after construction, requiring durable design solutions and robust material selection.
- **Environmental Sensitivities**  
Works were undertaken in proximity to waterways, requiring strict controls to prevent sediment runoff and protect downstream water quality.

## SOLUTIONS AND DELIVERABLES

### Comprehensive Site Survey and Design Integration

Detailed topographic and condition surveys informed the design of stabilisation options, ensuring construction methods were tailored to on-ground conditions.

### Engineered Rock Protection and Matting Installation

Layered systems of geotech matting and rock armouring were applied to reinforce slopes and mitigate future erosion, delivering long-term riverbank stability.

### Environmental and Water Management Controls

Sediment barriers, staged excavation, and drainage reinstatement minimised turbidity and maintained natural water flows throughout the works.

### Rehabilitation and Restoration

Disturbed areas were reshaped, stabilised, and rehabilitated to blend with the natural landscape and prevent post-construction erosion.

## OUTCOMES

- Restored stability and resilience of the Richmond River embankments.
- Enhanced protection against scour and erosion through engineered rock systems.
- Environmentally responsible construction with effective sediment and water controls.
- Delivery of durable, low-maintenance embankment structures supporting local infrastructure.

## PROJECT HIGHLIGHTS

- Integrated design and construction approach delivering practical stabilisation outcomes.
- Durable rock protection and geotechnical systems ensuring long-term riverbank stability.
- Environmental compliance and careful management of waterway impacts.
- Successful rehabilitation and reinstatement of disturbed areas following construction.

**SEE SOLUTIONS.  
NOT PROBLEMS.**

WE SPECIALISE IN SOLUTIONS  
THAT STREAMLINE THE SITE  
BUT DON'T COST ON QUALITY







- ▶ CLIENT: DENNING TWEED HEADS PTY LTD
- ▶ LOCATION: TRINGA ST, TWEED HEADS WEST, NSW
- ▶ TIMING: AUG 2024 - LATE 2025

#### PROJECT SUMMARY

The Tringa Street project involves safely excavating and remediating asbestos-containing material (ACM) to prepare the site for development. Works are delivered in a series of dewatered excavation bays up to 6 metres deep. The project combines strict environmental controls, dewatering management, and regulated material handling to ensure safe, compliant, and environmentally responsible outcomes.



#### SCOPE OF WORKS

SEE Civil is undertaking environmental remediation and civil works including:

- Site preparation: prestart planning, mobilisation of equipment, and establishment of haul routes and exclusion zones.
- Implementation of safety measures such as the use of appropriate personal protective equipment (PPE) and contamination controls, noise and vibration monitors.
- Excavation of ACM from identified in situ locations across the site.
- Establishment of dewatered excavation bays using sheet piles and dewatering spears (approximately 25 m x 12 m x 6 m).
- Collection, treatment, and monitoring of groundwater through a holding tank and dosing system prior to discharge into the stormwater network.
- On-site transport of ACM using articulated trucks and safe burial beneath future road alignments in accordance with waste management regulations.
- Reuse of existing clean fill material to backfill the upper layers of the remediated bays.
- Import and placement of preload fill for future construction.



## CHALLENGES

- **Management of Asbestos-Containing Material**  
Strict handling, transport, and burial requirements necessitate rigorous adherence to environmental and safety regulations. Preventing airborne contamination and ensuring correct disposal are critical to project success.
- **Groundwater Control During Excavation**  
Maintaining dry excavation bays in variable groundwater conditions requires precise dewatering design and continuous water quality monitoring to meet discharge standards.
- **Operational Safety and Site Logistics**  
Coordinating plant movement and excavation activities within defined exclusion zones presents logistical challenges, requiring careful planning to ensure personnel safety and operational efficiency.

## SOLUTIONS AND DELIVERABLES

### Controlled Dewatering and Water Treatment

Sheet piles and dewatering spears were implemented to isolate excavation bays. Collected groundwater was treated in a dosing tank and tested to confirm compliance with environmental standards before controlled discharge.

### Safe Asbestos Remediation Practices

All ACM excavation and transport activities were undertaken in accordance with regulatory and environmental management plans. Material was safely relocated and encapsulated beneath the future roadway to ensure long-term containment.

### Integrated Safety and Environmental Management

Dedicated exclusion zones, continuous air and water quality monitoring, and strict PPE protocols ensured worker safety and compliance throughout all phases of excavation and backfilling.

### Sustainable Material Reuse

Existing clean fill was reused wherever feasible, reducing the need for imported material and supporting environmentally responsible site rehabilitation.



## OUTCOMES

- Safe and compliant excavation and containment of asbestos-affected material.
- Successful implementation of dewatering and water treatment systems meeting environmental discharge standards.
- Enhanced site stability through structured backfilling and preloading.
- Effective coordination of environmental, safety, and civil disciplines to deliver a ready-to-build development platform.

## PROJECT HIGHLIGHTS

- Rigorous environmental and safety compliance in ACM management.
- Effective groundwater treatment and discharge monitoring system.
- Strategic reuse of on-site materials to minimise waste and environmental impact.
- Structured preload and remediation works preparing the site for future development.





# CONSTRUCTING THE FUTURE ON THE STRENGTH OF OUR PAST

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