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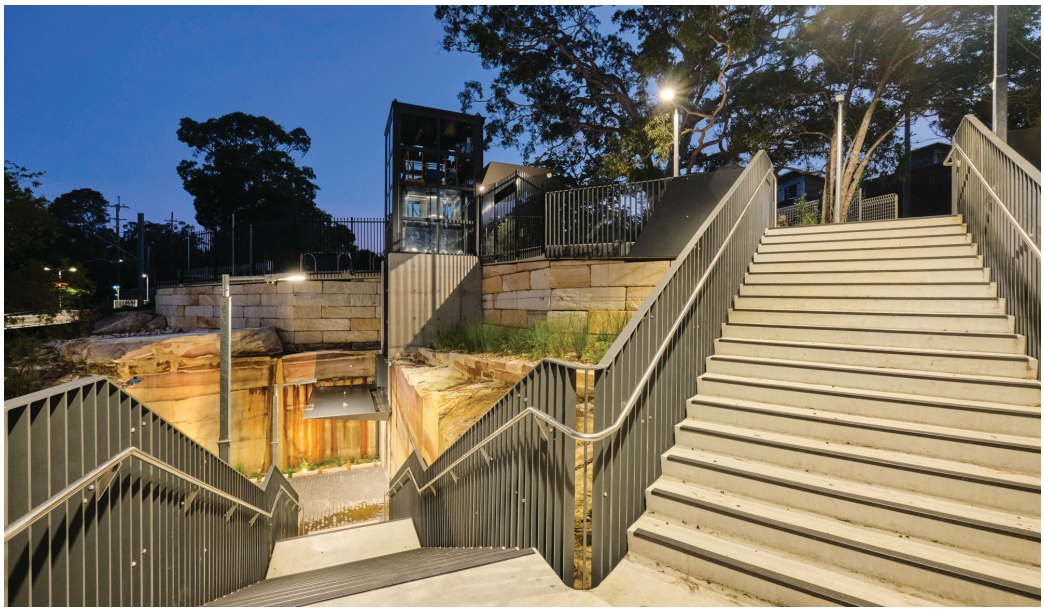
Building Sustainable Infrastructure | Transport Accessibility Program

Sustainability was at the core of Degnan's delivery of the Transport Access Program (TAP). By embedding environmentally conscious practices into every stage of the projects, planning to minimise environmental impacts, reduce carbon footprints, and deliver lasting societal benefits.



This commitment ensures that sustainable thinking and outcomes are integral to every project we undertake, making sustainability a standard part of our approach. TAP is a NSW Government initiative aimed at providing safe, modern, and accessible public transport infrastructure across the state. As part of the TAP 3 program, Degnan has completed station upgrades at locations including Fairy Meadow, Mittagong, Como, Unanderra, Towradgi, Bellambi, and Moss Vale.

An Integrated Approach

From the outset, Degnan committed to delivering projects using sustainable construction practices, minimising impacts on local environments and communities. Our vision extended beyond building infrastructure; we aimed to provide transport solutions with lower carbon footprints while delivering broader societal benefits. To achieve these goals, sustainability requirements were integrated into every stage of our processes, making sustainable thinking and outcomes "business as usual."

Reducing Energy, Water, and Waste

A key focus of our project delivery was reducing energy consumption and waste generation while maximising material efficiency. We prioritised low-energy, low-carbon design alternatives to traditional methods and trialled innovative materials and technologies. Recycled materials were incorporated into designs with deconstruction in mind, and waste minimised throughout project delivery.

By embracing circular economy principles, we repurposed waste materials generated during construction. Water consumption was reduced through methodologies such as using on-site captured rainwater instead of town water across all projects. Low-energy LED lighting, supported by on-site solar power, was employed on our sites, and green power was sourced during construction to further minimise our environmental impact.

TYPE OF PROJECT
Rail

LOCATION
Sydney & Illawarra NSW

CLIENT
Transport for NSW

PROJECT COMPLETION
2020- 2025

PROJECT VALUE
Combined value >$200M

DELIVERY MODEL
Design & Construct

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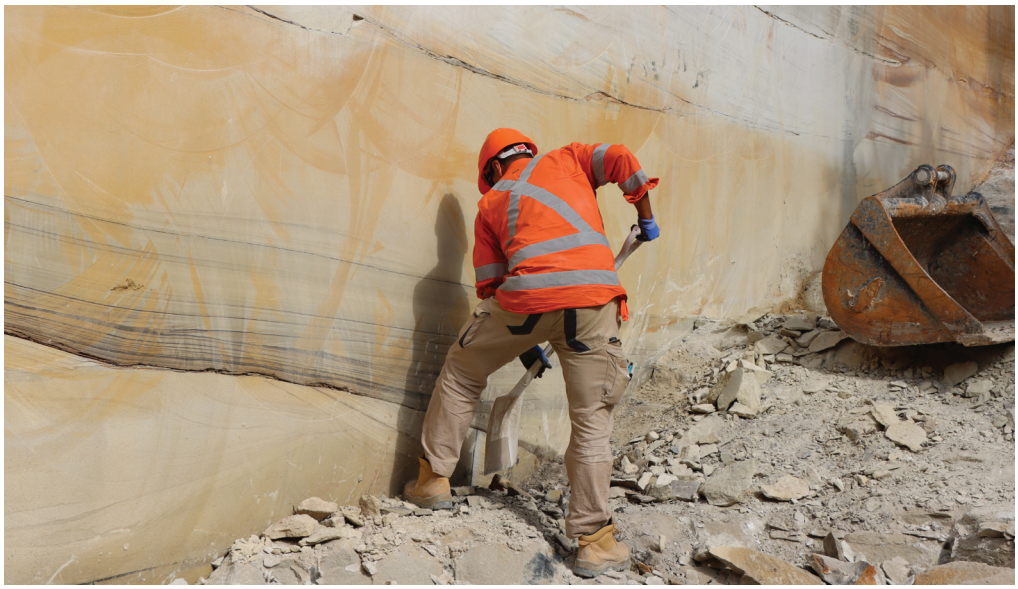
Sustainability Results

Our commitment to sustainability yielded outstanding results, consistently exceeding contract targets. We achieved an impressive 94% landfill diversion rate, far surpassing the industry average of 78%.

Through sustainable materials, designs, and construction methods, we avoided over 1,000 tonnes of CO2e, and reduced our construction footprints by an average of 22%.

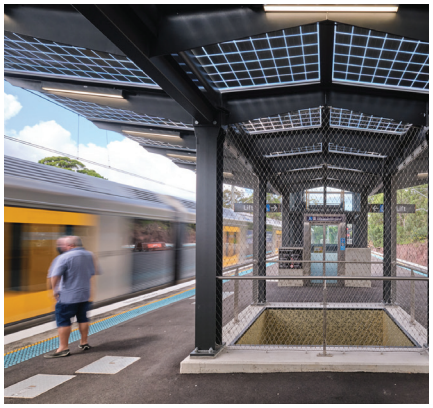


This focus on sustainability extended into the operational phase of our projects. Our designs prevented over 2,600 tonnes of CO2e emissions over their lifetimes with an average reduction of 50% in energy consumption. To put these achievements into perspective, the emissions saved could power a car for over 600 trips around the Earth or 32 journeys to the moon and back.

"Our commitment to sustainability frequently exceeds contract targets"

Innovation

Innovation is at the heart of sustainable thinking, pushing boundaries to improve environmental and community outcomes. Degnan achieved three Australian firsts on our TAP our station upgrades:

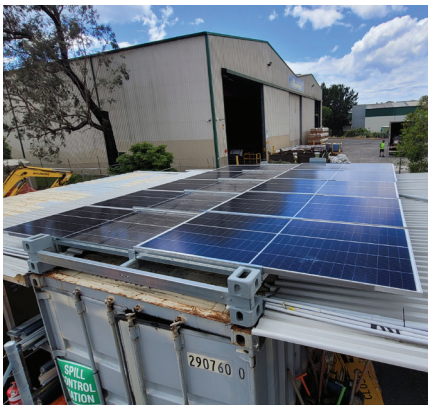


Solar Photovoltaic Glass Canopy at Como Station:

This Solar Glass generates enough electricity during daylight hours to power the station. It also enhances natural illumination and security in the underpass.

These panels are building-integrated photovoltaics (BIPV)- photovoltaic materials that are used to replace conventional building materials.

Lightweight Foamed Concrete Cladding at Towradgi Station: Developed with the University of Wollongong's Sustainable Building Research Centre, this aerated foam concrete mix is half the density of standard concrete. It incorporates recycled crushed glass and carbon fibre reinforcement, offering significant sustainability benefits.



Redeployable Container-Top Solar System at Unanderra Station: In collaboration with Makinex, we developed a solar system mounted on shipping containers to supplement grid energy on construction sites. Paired with battery storage, this innovation has since become a commercially available solution.

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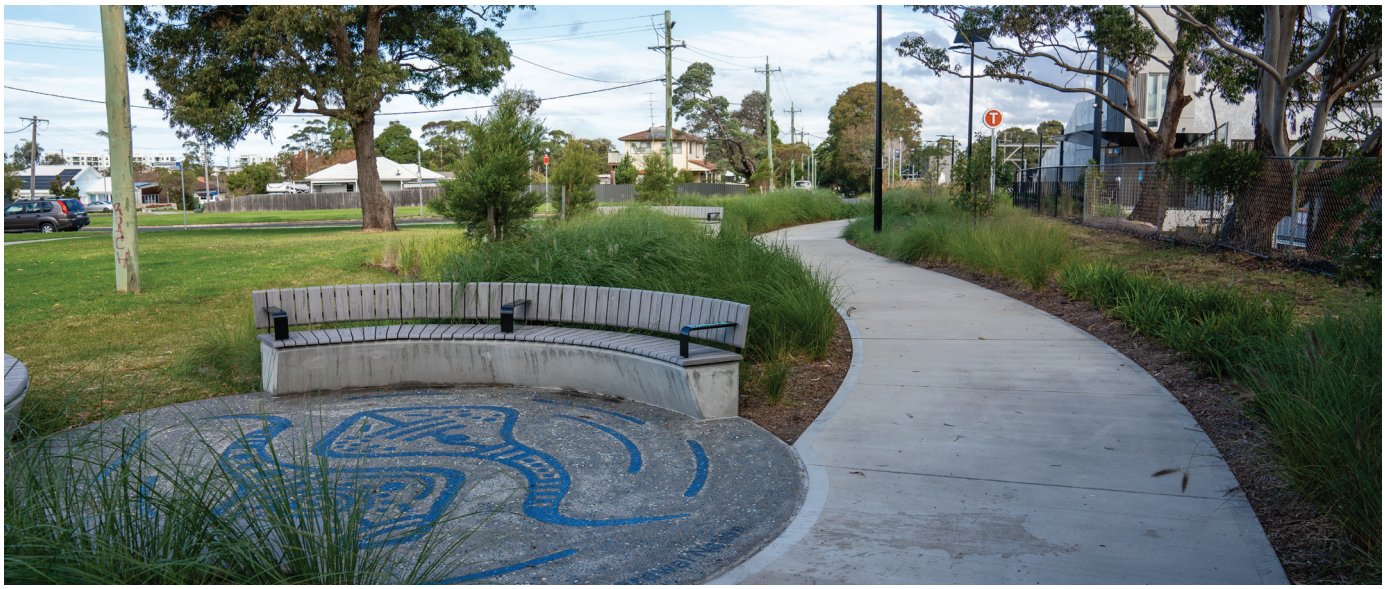
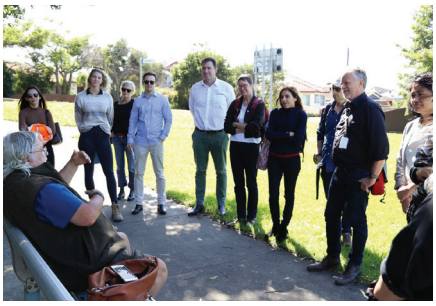
Community and Connecting with Country

Degnan prioritised understanding and connecting with the communities we served. Partnering with disability groups allowed us to reimagine ‘accessibility’ and identify design enhancements that improve station functionality. We also engaged these groups in skills development through woodworking workshops and initiatives like the ‘Little Italy’ pop-up café at Como.



Consultation with First Nations Peoples was integral to our approach. We sought to honour the Dharawal People, the Traditional Owners of the land, by integrating culturally significant imagery and biophilic designs into station landscapes. Indigenous artwork was incorporated as a form of storytelling, fostering a deeper connection between commuters and the rich cultural heritage of the land.



"We understand that sustainability means building for the communities of tomorrow while respecting current and past the communities of the past."