

Cannery Creek, Australia

A wide-angle photograph of a landscaped waterway. In the foreground, a concrete path curves along a bed of tall green grasses. A body of water is in the middle ground, with a small bridge crossing it. The background features a line of trees and a clear blue sky with light clouds.

Resilient Futures

Real impact,
made together.

Climate Resilience Starts with SJ Group

We deliver resilient, intelligent water solutions for a changing climate, helping communities, cities and utilities adapt and thrive.

Our specialists partner with clients to advance integrated solutions across water, coastal and ecological systems. We combine engineering, digital and nature-based design to enhance performance, sustainability and liveability.

Backed by our global network, we deliver tailored solutions across the lifecycle of complex water systems—transforming infrastructure into resilient, connected and regenerative networks.

Consultancy service across

Climate Resilience

Water Security

Coastal Management

Digital Transformation

Ecological Health

Nature-Based Solutions



ENR Top 10
#10 globally in water (2025)



16k+
employees

48+
countries

100+
nationalities

Our Approach



Resilient Futures

Designing for what's next

From managing risk to enabling confidence in an uncertain climate.

We help communities, cities and utilities anticipate change, adapt faster, and thrive in the face of climate uncertainty. Protecting what matters most, today and for future generations.



Intelligent Systems

Smarter insights, stronger decisions

From data to decisive action.

We unlock the power of digital, analytics and AI to transform complex water systems into intelligent, connected networks. Driving better decisions, performance and outcomes at every scale.



Regenerative by Design

Working with nature

From minimising harm to restoring balance.

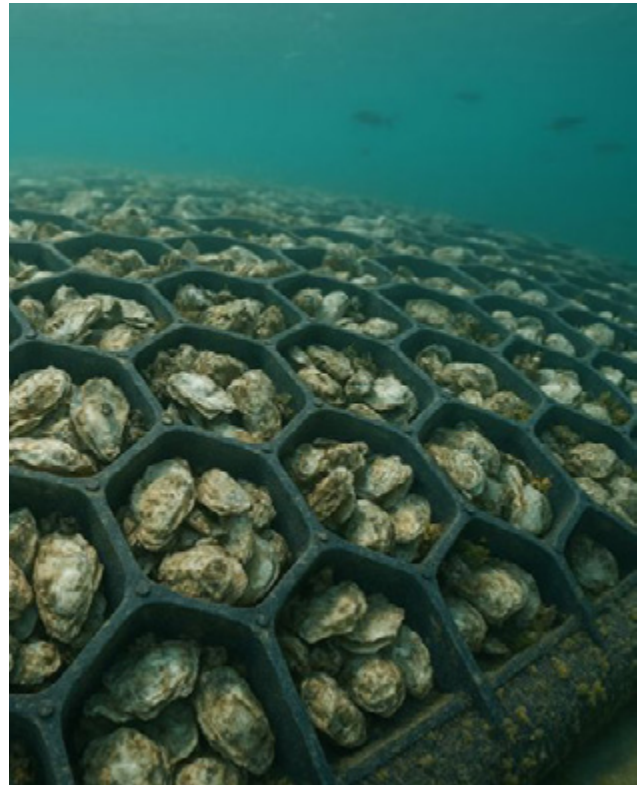
We work with nature to regenerate ecosystems, enhance liveability and deliver long-term value. Creating water systems that restore environments, strengthen communities and leave a positive legacy.

Harnessing Nature's Defence

ABSORBS Project, Singapore

ABSORBS is the short for nAture-BaSed infrastructure cOastal pRotection System with submerged Bund integrated with shell-filled grids, is one of the projects awarded by PUB, Singapore's National Water Agency under the Coastal Protection and Flood Management Research Programme (CFRP)'s first Applied Research grant call. SJ, working with TCOMS - Technology Centre for Offshore and Marine, Singapore and NUS Tropical Marine Science Institute to deliver a scalable, adaptive and nature-based solution, contributing our expertise to help shape solutions for Singapore and across the region, transforming hard infrastructure into habitats that support thriving marine life.

It is a shoreline where shells, soil and waves work together to protect the coast. The system dissipates wave energy and restores beaches by encouraging sediment build-up. The shell layers also provide habitats for marine life while upcycling food waste and reducing reliance on conventional rock armours. Early signs of marine colonisation are already emerging, proving how innovation, science and coordinated execution can protect coastlines and its marine life.



Combating Sea Level Rise

Pulau Tekong Polder Development, Singapore

The Pulau Tekong Polder Development is Singapore's first project of its kind, introducing an innovative approach to coastal land creation. Drawing on Dutch expertise, the project reclaims 810 hectares of land located below sea level using the polder concept.

At the heart of this development is a carefully designed system of dikes, drainage canals, water control structures, pumps, and retention ponds. Together, these elements work to regulate water levels and safeguard the reclaimed area.

As Singapore's first application of the empoldering method, the project represents a landmark in sustainable reclamation. It sets a new benchmark for how the nation can expand its coastline while addressing long-term resilience against rising sea levels.

Powering Smarter Systems

Malabar System Investment Program, Australia

As ACCIONA's design partner in the Malabar System Alliance (MSA), we're working with Sydney Water to deliver the Malabar System Investment Program—a ten-year initiative to expand and modernise wastewater treatment capacity across Sydney's south and west.

The first scheme focuses on upgrades to the Liverpool and Glenfield Water Resource Recovery Facilities, enhancing the region's wastewater network, improving system resilience, and ensuring sustainable resource management into the future.

Our innovative design maximises future opportunities for purified recycled water production and controlled river release, while optimising investment across the system. By harnessing state-of-the-art processes, the design is expected to deliver up to a 60 per cent improvement in energy efficiency and significantly improve long-term operational performance through consolidation of treatment into a single secondary facility.



Rebuilding for Resilience

Northern Wastewater Treatment Plant, South Africa

The Northern Wastewater Treatment Works, a vital part of Durban's sanitation system processing both domestic and industrial effluent, sustained extensive damage, compromising essential services for thousands of residents.

This ambitious project is a response to the catastrophic flooding that struck KwaZulu-Natal in April 2022, particularly impacting Durban and its surrounding areas (eThekweni Metropolitan). The prolonged heavy rainfall caused significant loss of life and extensive damage to infrastructure, including homes, roads, and bridges. The project aims to increase the facility's capacity to 70 million liters per day by December 2025, nearly doubling its current output to ensure long-term reliability. By incorporating advanced 3D Twin Technology, the team is enhancing operational efficiency and strengthening the plant's resilience against climate-related risks.

The twin model is pivotal for the current restoration and serves as a foundation for long-term infrastructure management. With virtual access to every component of the plant, future interventions can be executed more efficiently, ensuring the facility's resilience and functionality for years to come.

Nurturing Marine Habitats

BioBoss Eco Tiles, Singapore

When engineering expertise meets ecological purpose, infrastructure becomes the driver of nature-positive outcomes. The successful installation of 1,500 BioBoss2 eco-engineering tiles along Singapore's seawalls is a powerful example of how collaboration, innovation and shared ownership can deliver meaningful environmental outcomes at scale.

Developed by the Experimental Marine Ecology Lab at the National University of Singapore (NUS), the BioBoss2 tile is the latest advancement in eco engineering design. Its distinctive hexagonal form incorporates complex topographical features ranging from 4 - 56 mm, scientifically shown to increase species richness and improve marine colonisation on hard coastal structures.

This initiative builds on years of ecological research demonstrating that conventional seawalls — while structurally sound — often lack the microhabitats needed to support diverse intertidal life. Features such as pits, crevices, overhangs and shaded pockets are essential for marine species to settle and thrive. Retrofitting existing seawalls with textured tiles like BioBoss2 remains one of the most effective strategies for enhancing biodiversity along Singapore's heavily engineered coastline.



Restoring Balance with Nature

Cannery Creek Nature Based Solution, Australia

As design partner, SMEC worked with Fulton Hogan to help Urban Utilities reimagine wet weather overflow management for Brisbane's north-east suburbs. This \$72 million project marks the first time a nature-based solution of this scale has been delivered in South East Queensland. The system diverts mixed wastewater and stormwater through a 2 km underground pipeline to a 5,100 m² constructed wetland and two 2,800 m² bioretention basins. Natural treatment processes remove sediment and nutrients before discharge to Kedron Brook and Moreton Bay.

The results demonstrate what's possible when engineering works with nature: a proposed 96% reduction in wet weather overflows, 60,000 m² of creek restoration, and more than 14,000 native trees, shrubs and grasses planted. Our design helped secure Queensland's first combined wastewater and stormwater offset discharge licence—recognised by the State Assessment and Referral Agency as one of the most unique, complex and innovative applications assessed.

Working closely with a passionate 23-person Community Planning Team, we delivered a solution that saved \$20 million compared to conventional approaches while transforming neglected "mud and mozzie" areas into usable open space. It's proof that nature-based design can deliver better outcomes for utilities, communities and the environment.

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Real impact,
made together.

