



Water Services & Projects

Capability Statement



Utilities

Enabling communities to thrive.

Downer is the leading provider of integrated infrastructure services across New Zealand and Australia. We are committed to building strong relationships with our customers, people, and communities.

Our Purpose, “Enabling communities to thrive”, outlines our commitment to shaping a connected and sustainable future – together. It guides us and gives us the courage to take on big things. It also drives and defines our commitment to create a sustained, positive impact on communities.

With more than 33,000 employees, our footprint covers every corner of New Zealand and Australia. We operate across four sector-focused trans-Tasman business units, leveraging our technical capability to ensure our customers’ success.



Why Water Services & Projects?

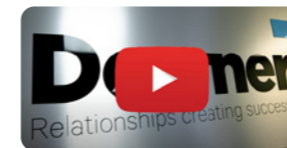
As the leading provider of complete water lifecycle solutions for water and wastewater networks, Downer supplies water and wastewater services to more than 14 million New Zealanders and Australians.

In New Zealand alone, we have around 500 experienced water industry experts, ensuring that three waters services continue to flow to homes, schools and businesses across both islands. In fact, we are Aotearoa’s largest Water Services & Projects provider, operating and maintaining more than 400 treatment plants nationally.

Our local expertise is backed by a large trans-Tasman presence that collectively offers a wide range of water services across the full asset lifecycle through our whole-of-life approach, from concept, through design development, construction, commissioning, operations and maintenance.

Our national team collaborates with clients and communities to protect Aotearoa’s wai (water). We provide safe drinking water to a quarter of New Zealand’s population, maintain safe swimming water for our local communities, and work around the clock to resume water services when a weather crisis hits. Partnering with cities, rural communities, tangata whenua and industry, our water experts collaborate to engineer fit-for-purpose and future-proofed solutions.

Learn more about how we collaborate with our customers to protect Aotearoa’s wai here.



Protecting Aotearoa’s Wai – Water & Automation

Our Pillars:



Safety & Sustainability

Safety is our first priority. Zero Harm to our people, communities and environment is embedded in our culture. We will leave a positive legacy for future generations.



Delivery

We build trust by delivering on our promises with excellence while focusing on sustainability, value for money and efficiency.



Relationships

We collaborate to build and sustain enduring relationships with our customers, our people and our communities, based on trust and integrity.



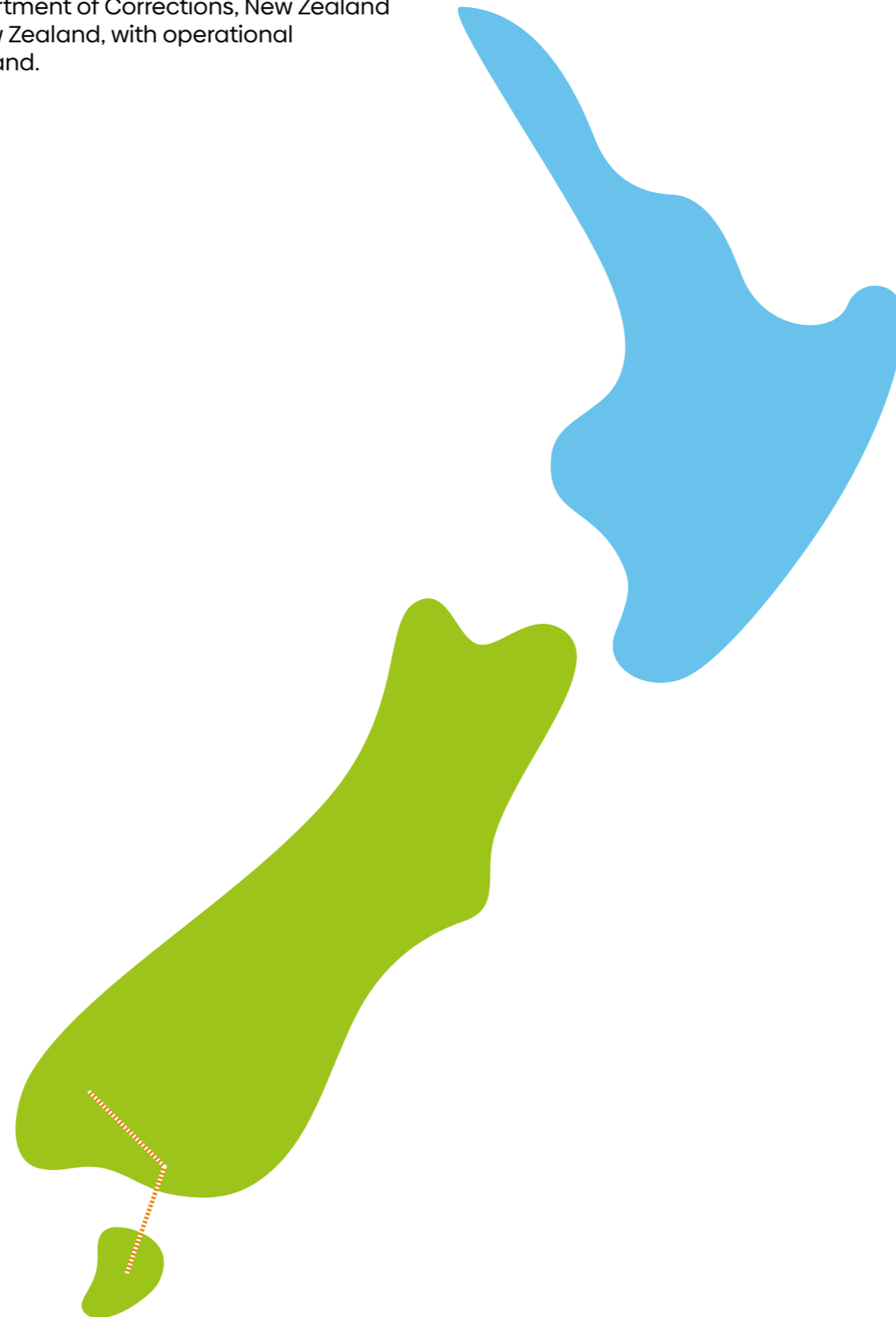
Thought Leadership

We remain at the forefront of our industry by employing the best people and having the courage to challenge the status quo.

A national footprint that spans multiple disciplines and specialist services

We offer trusted services and integrated solutions for a wide range of assets, from council-wide three waters networks, brownfield and greenfield treatment plant construction and maintenance, to pipeline renewals, design optioneering, and SCADA and Electrical systems. We hold contracts and provide services for major clients such as Watercare, Department of Corrections, New Zealand Defence Force, and regional and local councils throughout New Zealand, with operational coverage in 17 locations from the Far North, down to Stewart Island.

This map is interactive! Click on each location to see details of operations and contracts delivered in each region.



Our Tikanga

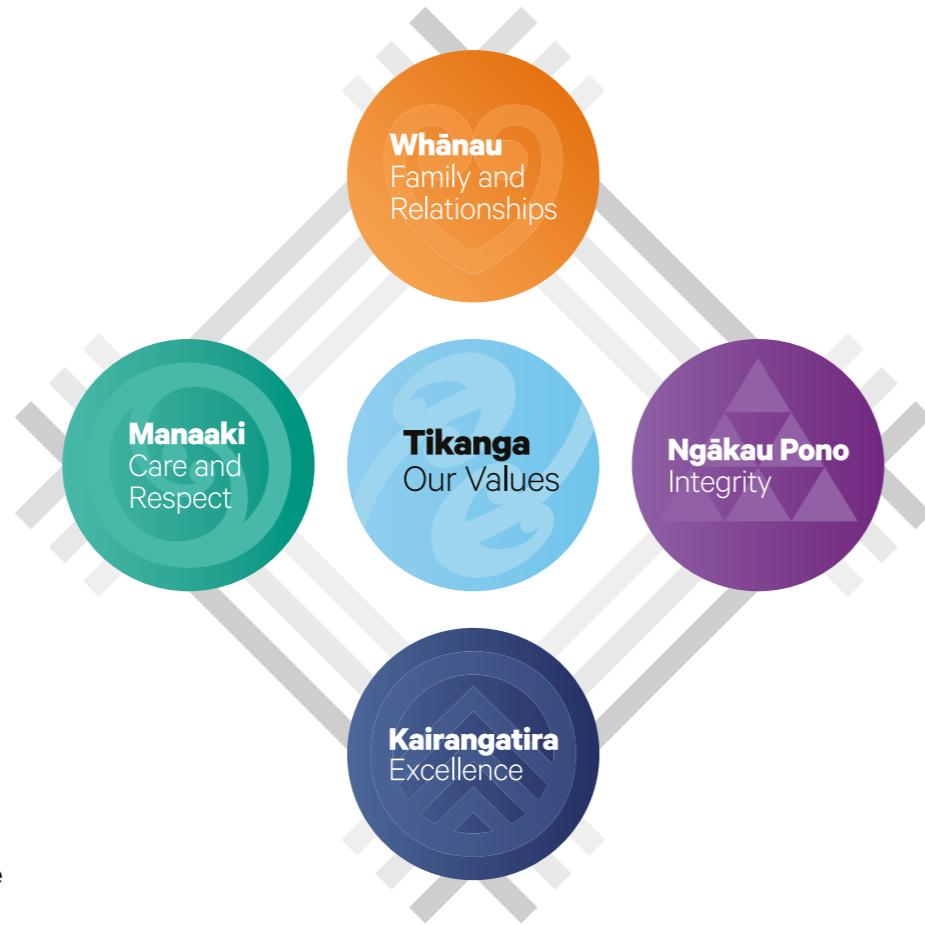
Our Tikanga (values) are an intrinsic part of the way we do business at Downer, and the behaviours we aspire to live by. In the Māori context, the word Tika means correct and so Tikanga means to do things right.

Our values centre around Whānau (Family and Relationships), Manaaki (Care and Respect), Kairangatira (Excellence) and Ngākau Pono (Integrity).

“Tuituia ngātahi mātou ki te mana o te Whānau, te Manaaki ki Kairangatira me te Ngākau Pono. Tuituia hei korowai tikanga tuku iho mō tātou.”

“Stitching us together as one are family and relationships, care & respect, excellence and integrity as our cloak of values.”

We pursue excellence through embracing our values and creating a diverse and inclusive environment – so our people can be their absolute best. We keep our promises and do what we say we will to deliver positive outcomes for all.



Our Promise: Our customers' success is our success

We help our customers succeed by bringing thought leadership to each stage of the asset lifecycle as we support our customers to design, build, maintain, and operate.

- Collaboration is key to building mutually successful relationships and we strongly encourage collaboration early on in any project, to drive value engineering and best-for-project outcomes. Our water teams do this in a variety of ways, from collaborative charters under traditional 3910/3917 contract models, through to full collaborative arrangements under NEC4 or in leading Early Contractor Involvement (ECI).
- The ECI approach is especially valuable for customers to gain early advice from a contractor on buildability and design optimisation. Suited to large, complex or high-risk projects, it affords an integrated team the time to gain early understanding on requirements, which enables robust risk management, innovation, cost certainty and value creation. Downer New Zealand has completed over 30 ECIs in the past 10 years and increasingly our customers are asking for our perspective on ECIs and the potential benefits to their upcoming projects.

Common areas of values sought by our customers include:

- Incorporating Hazard and Operability Safety in Design workshops to highlight and resolve any process, construction or operability issues that may represent risks to personnel or equipment, prior to construction. Experience shows us that there is a direct correlation between early involvement and the cost of managing health and safety across the lifecycle of an asset.
- Ensuring our customers will always have access to the right talent is essential to success. That's why we see it as our duty to invest in the water industry to raise up the next generation of water specialists through our apprenticeships and Māori leadership programmes.



Value through cost reduction and innovation



Improved speed and agility in delivery



Risk mitigation and change management



People and collaboration



Achieving sustainability outcomes

What we do: Engineering Services

As a leading provider of infrastructure services in Aotearoa, Downer is supported by its in-house Engineering Services team who provides a range of engineering solutions across the asset lifecycle to also include operational systems and technology.

Our in-house process and automation engineers add real value during the planning and design stages of a project.

Our services include:

- Value engineering
- Scoping and site investigations
- Preparation of technical drawings and specifications
- Process (including control), hydraulic, electrical, plc, RTU, HMI and SCADA platform design, as well as temporary works design
- Telemetry radio, cellular and Back Haul communication networks
- Facilitating HAZOP studies and Safety in Design reviews
- Digital engineering and modelling
- Network performance assessment, modelling and management
- Asset Management: Preparation of tactical maintenance plans to support local asset management strategies, economic lifecycle analysis

For complex designs, our design managers and mature management systems bring rigour to the design process ensuring that quality checks are carried out throughout the process.



Read our Engineering Services Case Studies [here](#).

What we do: Operations & Maintenance

Downer's Water Operations & Maintenance (O&M) teams operate and maintain three waters networks, treatment and reticulation systems for 15 councils in regions such as the Bay of Plenty, Taupo, Horowhenua, Tasman, Southland, Northland, Auckland and Central Otago. Our team helps our customers to keep water, waste and stormwater systems operational 24/7 for a quarter of New Zealand's population.

Our O&M team services

- Water, wastewater, stormwater reticulation maintenance
- Pump station mechanical and electrical maintenance
- Treatment plant operations and maintenance
- Leak detection, closed circuit television (CCTV), hydro jetting, sump cleaning, Sewer Line Rapid Assessment Tool (SLRat) acoustic wastewater assessment
- Stormwater network maintenance including tree clearing, channel clearing, inspection work, critical outfall inspection work, stormwater treatment device maintenance
- Reservoir cleaning, mains chlorination and commissioning
- Minor construction including mains renewals, deep excavation, pump replacement, pump station cabinet rebuilds, meter replacement programs, watermain and fire connections.

Downer invests heavily in innovative systems to meet the needs of modern infrastructure asset managers. Strong fiscal management, real-time tracking of network faults and systems integration ensure our customers are provided with a detailed overview of service requests, reactive works, planned maintenance and integrated levels of asset data which support long-term planning and the implementation of preventative maintenance strategies.



Read our Operations & Maintenance Case Studies [here](#).

What we do: Automation

Our Automation team is the Industrial Operational Technology delivery arm of Downer New Zealand and is Aotearoa's largest provider of Water Services, Electrical Instrument Control Automation (EICA), Telemetry, and Internet of Things (IoT) services. In a world that is becoming increasingly connected and automated, our team supports our customers to ensure that their assets are performing optimally through access to real-time information and customised solutions.

We use a full suite of products from certified partners including Schneider, Rockwell, Siemens, Cisco, Microsoft, and Motorola to create innovative solutions for customers including Tauranga, Dunedin, Christchurch, Western Bay of Plenty and Tasman Councils, Watercare, New Zealand Defence Force, Ministry of Justice (Corrections), Waka Kotahi NZ Transport Agency and the Department of Conservation.

Our services include:

- Design, installation, commissioning and maintenance of EICA Systems and Instrumentation
- Single to multi-layer network SCADA systems
- Programmable logic controllers and RTU
- VSD installations and control wiring
- Smart data-driven asset management
- Remote off-grid power and communications
- Telemetry and Radio Communications via NZ's largest VHF radio network
- GPS location services
- Microwave linking

- AI camera technology
- Internet of Things and AWS services
- Mechatronic engineering
- In-house software development and hosting services
- App development
- Data Analytics



What we do: Water Projects

Our national Water Projects team undertakes water, wastewater, stormwater and automation renewals and upgrades across the country. They implement infrastructure renewals and small-medium scale capital improvements and provide emergency response activities to major weather and natural disaster events to get critical services back up and running for our communities as soon as possible.

Working alongside our maintenance teams, the Water Projects team delivers capital works projects and upgrades for our customers.

Our services include:

- Three waters renewals and reticulation upgrades
- Pump station renewals
- Stormwater catchment enhancements
- Water and wastewater treatment facilities
- Reservoirs
- Mechanical and control system upgrades

The team has also been involved in some of the country's largest infrastructure projects and has helped to construct and commission new-to-New Zealand wastewater treatment technology, such as thermal dryers and bioreactors.

Given the innovative focus of today's major infrastructure projects, we are strong advocates of Early Contractor Involvement and collaborative working arrangements that allow us to share our expertise and bring value engineering while ensuring safety in design takes construction, operations, and maintenance activities into account. We also support Engineering, Procurement

and Construction contracts, as well as Joint Ventures and Alliances.

These collaborative models provide our customers with an elevated level of security and confidence that the delivery stage will be carried out to the required quality standards, programme, and budgetary provisions. It allows us to form a project team that is best for project, the community, and key stakeholders.



What we do: Gasification

The Issue

A by-product of wastewater treatment processes is biosolids that consist of treated and partially treated sewage sludge. Biosolids have traditionally been transported to regional areas for agricultural use as they are rich in nutrients that can improve soil conditions. However, increasing disposal costs and stricter environmental regulations regarding the use of biosolids has made this disposal management technique less attractive for authorities.

This was the case at the Loganholme Wastewater Treatment Plant (WWTP) where six trucks were making 300km-long round trips to transport biosolids to the Darling Downs region each day. This was costing Logan City Council and its community about \$1.8 million per year.

Our Solution

To address this issue, we collaborated with delivery partners Logan Water, WSP, Cardno now Stantec, and Pyrocal, to design and construct Australia's first biosolids gasification facility at the Loganholme WWTP.

The facility processes sewage sludge by dewatering it in a centrifuge, drying it in a paddle dryer, and treating it with high temperature in a low oxygen gasifier. This process produces biogas with recovered energy from the biogas used to power the drying and heating processes.

The gasification facility is energy neutral, with 70% of the energy in biosolids recovered and reused, and the remaining energy requirements met by a 1,000kW onsite solar array. The gasification facility produces a biochar that contains nitrogen, phosphorous, and potassium.

The Benefits

Biosolids gasification benefits water utility providers, customers, and communities by:

- recovering energy from waste
- reducing energy consumption
- removing carbon and binding heavy metals which reduces carbon emissions
- destroying persistent organic pollutants and micro and nano-plastics
- complying with environmental regulations
- reducing WWTP operating costs
- reducing community impacts associated with traditional biosolid disposal transportation
- producing environmentally friendly biochar for agricultural and household gardening use.

Cost

The \$28 million Loganholme Biosolids Gasification Facility was commissioned in April 2022. It was jointly funded by Logan City Council and a \$6.2 million grant contribution from the Australian Renewable Energy Agency (ARENA).



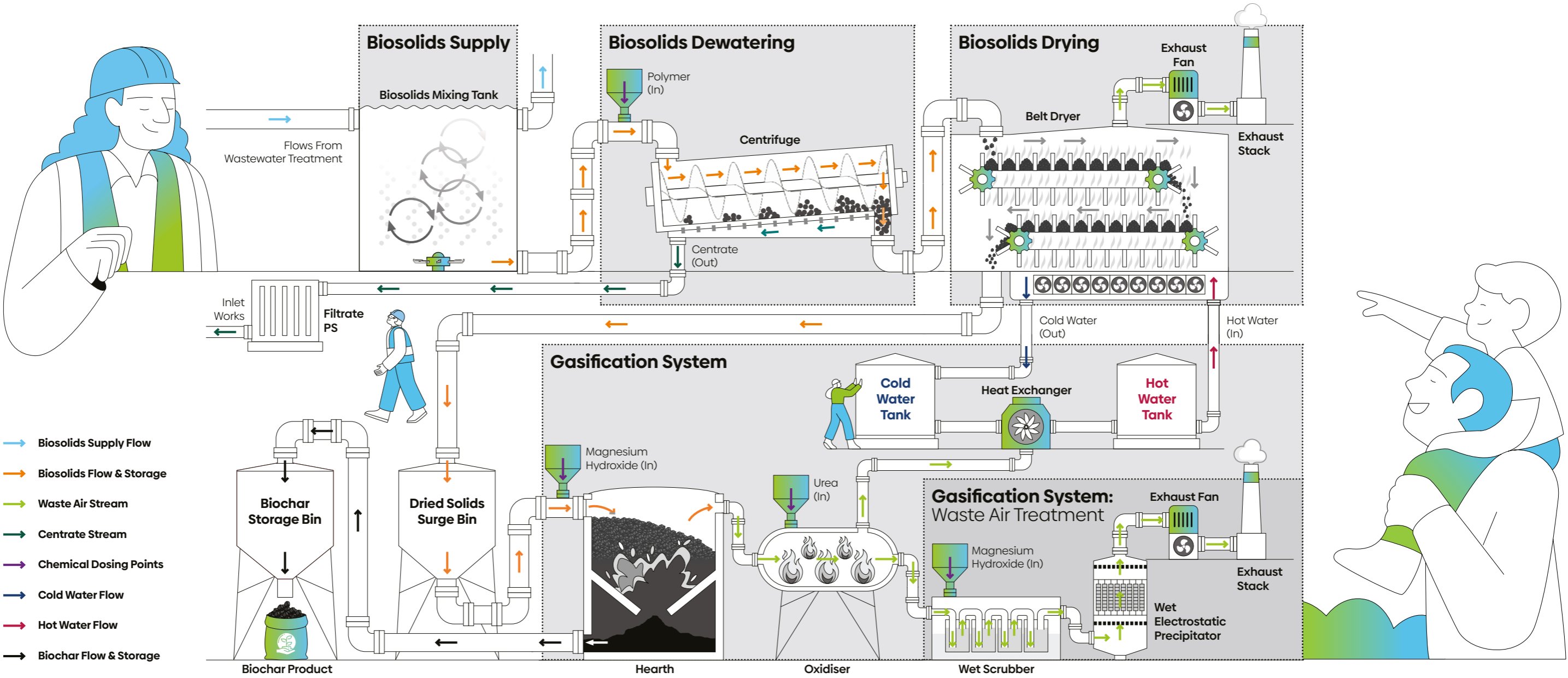
Industry application

This innovative biosolids gasification solution can be used by water utilities to transform wastewater by-products into biochar, an environmentally friendly material that can be beneficially reused for agricultural and gardening purposes.

The technology also has applications in other industries. For example, biochar can be added to some building materials, such as bricks and concrete, to improve their strength characteristics.



Biosolids Gasification Process





**Downer New Zealand
Water Services & Projects**

Contact Us

Email: WaterSP@downer.co.nz

Address: 1/2A William Pickering Drive,
Auckland, 0632

www.downergroup.co.nz

