

Aquatec Maxcon

Group

CAPABILITY



STATEMENT

Aquatec Maxcon Group

Est. 1970

We Treat Water Properly

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Weld Australia Fabrication Award 2018 presented to Maxcon Industries



Australian Water 2025 R&D Award Excellence Award Winner



Ipswich Chamber of Commerce 2017 Business of the Year Award



Best Value Partner TrojanUV Aquatec Maxcon



Best Nereda Win by a licensee Nereda Community Day 2025



Infrastructure Project Innovation Award 2017 for Kingaroy Wastewater Treatment Plant Upgrade

Company Profile and Background

Established in 1970, Aquatec Maxcon Group has evolved into a leading provider of water and wastewater technology and equipment. As a vertically integrated organisation, we deliver comprehensive solutions through our in-house companies: Aquatec Maxcon Pty Ltd, Maxcon Industries Pty Ltd and MPA Engineering Pty Ltd.

Projects are undertaken throughout Australia, New Zealand and internationally supported from our offices in Brisbane (Ipswich), Sydney, Melbourne and Thailand.

Our company provides a range of services including:

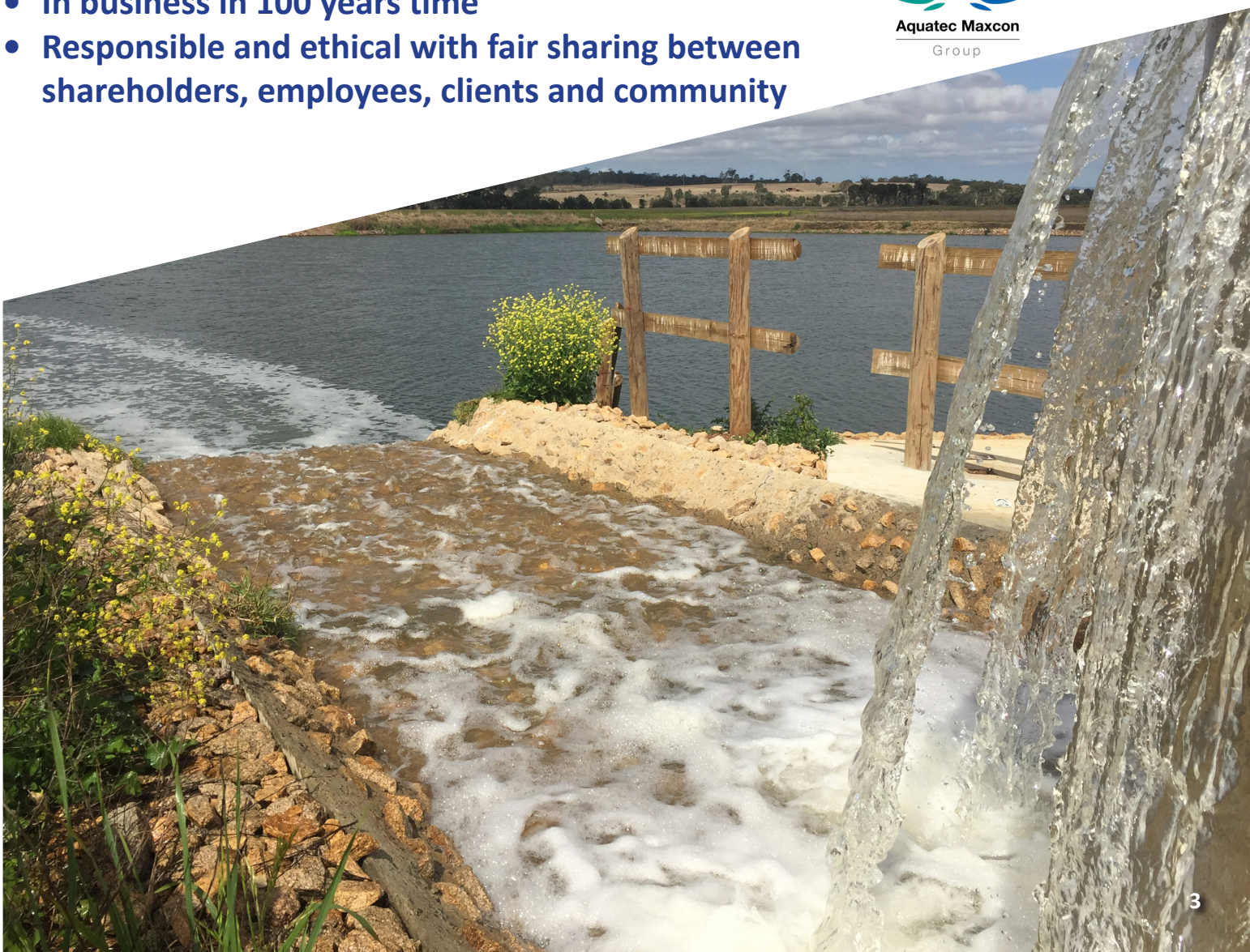
- design, fabrication, mechanical and installation
- complete in-house manufacturing, painting and assembly
- operations and maintenance
- electricial, SCADA and telemetry
- pilot plant and treatability studies;
- process selection and equipment design;
- project management;
- commissioning

We are a single resource for both industrial and municipal clients, reducing intefaces and offering practical and cost effective overall solutions.

WE AIM TO BE

- **A leading global water technology company**
- **In business in 100 years time**
- **Responsible and ethical with fair sharing between shareholders, employees, clients and community**

1970 - 2020
50 YEARS
SERVING THE WATER INDUSTRY
Aquatec Maxcon
Group



Company Milestones



Nereda® Plant commemorative stamps by Netherlands Post incorporates Kingaroy WWTP

1970 Company formation
1972 First municipal wastewater equipment manufactured.
1975 Shift to current principal manufacturing site in Ipswich, west of Brisbane
1979 8 off 42.7m diameter clarifiers provided for Luggage Point STP, Brisbane.
1984 First major Australian design and construct WWTP (Cameron Bay, Tasmania, 30,000 persons).
1986 First major anaerobic industrial wastewater plant completed (Golden Circle Cannery, Brisbane) and first municipal potable plant constructed in Brisbane.
1990 First contract for plant operations.
1993 First major industrial process water project (Stanwell Power Station).
1998 Aquablade - first Australian fine bubble membrane diffuser and test tank.
1999 IC anerobic reactor and oxidation ditch for world's largest powdered milk factory in Te Rapa, New Zealand
2001 First Australian membrane bioreactor for treatment of sewage (Magnetic Island, QLD). First Alliance contract with Maroochy Water to build a sewage plant extension.
2003 Selected for Brisbane Water Enviro Alliance - three (3) sewage treatment plant upgrades - Oxley Creek, Sandgate and Wacol (QLD). Initial sum of $175m expanded to over $260m with Wynnum re-use. Selected for Coffs Harbour WRP Alliance. Total value $23m
2005 Awarded the Townsville Citiwater Alliance contract to upgrade Horseshoe Bay, Cleveland Bay and Mt. St. John WWTP's. Case Earth award for projects >$10m in NSW was awarded for the Coffs Harbour Alliance.
2006 Selected for repeat alliance at Maroochydore. Selected for further alliance for Coffs Harbour Water Reclamation Plant and Karangi WTP. Approxmate value $160m.
2007 Selected as the principal constructor for the Brisbane Caboolture Aquafier Alliance to treat the water from six (6) water borehole fields around Brisbane and Caboolture Shire with a contract value of $93.7m. Purchased electrical contracting business, MPA Engineering Pty Ltd.
2008 Initial orders from the coal seam methane industry for 120 micro-turbines and MF/RO for water Teatment.
2009 Delivered major industrial water re-use faciities for Castlemaine XXXX, Visy Smithfield and Smiths Snack foods. Brisbane Caboolture Aquifuture Alliance expanded to include the Enoggera WTP, three (3) pump stations and chlorination plant.
2009 Received 'Australian Institute of Project Management, 2008 Project of the Year National Winner' for Brisbane Water Enviro Alliance
2010 Successful commissioning of a three (3) megawatt power station to run a reverse osmosis water treatment plant for the coal seam gas industry. Further MF/RO skids for the coal seam gas industry. Commissioning of Australia's first microturbine power generation facility at Surbiton Park Sewage Treatment Plant in Victoria producing renewable energy from the biogas from the sludge digester.
2011 Successful delivery of several turnkey projects including all aspects of process design and proving, mechanical, electrical controls and civil construction for projects in industries serving municipal water and wastewater treatment and coal seam gas membrane filtration facilities.
2012 Successfully delivered 170 micro-turbines to remote coal seam gas industry.
2014 Successful delivery of several design and construction projects including a second brewery plant for National Foods at Tooheys in Lidcombe, NSW, 14ML/d Water Treatment Plant for Centennial Coal and wastewater treatment plants at Hughenden and Miles.
2015 Awarded first Nereda® aerobic granular sludge wastewater treatment plant at Kingaroy, QLD and selected for demonstration of Nereda® technology at Melbourne's Western Treatment Plant.
2016 Awarded Yarra Valley Water 100T/d biomass digestion facility; the first municipal facility of its type in Australia.
2016 Completion of the Kingaroy Wastewater Treatment Plant, QLD and winner of the 2016 IPWEA Engineering Excellence Award for Projects over $10 million.
2017 Kingaroy Wastewater Treatment Plant, the first Nereda® plant in Australia, commemorated in stamp form by Netherlands Post.
2017 Aquatec Maxcon develops a novel anaerobic Membrane Bioreactor (MBR), which in collaboration with Trisco Foods, receives government funding to increase the pilot plant to commercial demonstration scale.
2017 Aquatec Maxcon receives Australian Federal Government Safety Office WHS accreditation.
2017 Winner of the 2017 QLD Australian Water Assocation "Infrastructure Project Innovation Award" for the successful delivery of the Kingaroy Wastewater Treatment Plant upgrade.
2019 University of Queensland Scholarship (Master of Engineering - urban water) donated by Aquatec Maxcon.
2022 Burwood Beach Aeraton Plant using state of the art AquaBlade L.
2023 Quakers Hills UV/OP - the first for Sydney Water

Industry and Project Awards

2006 Winner. Project Management for BWEA, Sandgate WWTP Upgrade, Engineers Australia (EA) Engineering Excellence Awards.
2007 Commendation. Project Management High Commendation, BWEA Oxley Creek WRP, EA Engineering Excellence Awards.
2008 Commendation. Honourable Mention - Excellence in Major Project/Capital Alliances, Alliance Contracting Excellence (ACE) Awards.
2008 Finalist. Major Project Division, BCAA, Alliance Contracting Excellence (ACE) Awards.
2008 Winner. National Project of the Year, BWEA Project, Primavera Project Management Awards.
2008 Winner. National Construction/Engineering, BWEA Project, Primavera Project Management Awards.
2008 Commendation. Project Management High Commendation, BWEA, EA Engineering Excellence Awards.
2008 Winner. Queensland Project of the Year, BWEA, Australian Institute of Project Management.
2008 Winner. Forward osmosis for water desalination in gas mining, Queensland Sustainable Energy Innovation Awards.
2012 Winner. Healthy Waterways Award, Canungra STP MBR Upgrade, Queensland Government.
2012 Finalist. Infrastructure Innovation Award, Canungra STP MBR Upgrade, Australian Water Association, QLD.
2014 Finalist. Infrastructure Project Innovation Award, Rochester WTP Upgrade, Australian Water Association, VIC.
2016 Finalist. Infrastructure Project Innovation Award, Kingaroy WWTP, Australian Water Association, QLD.
2016 Finalist. Infrastructure Project Innovation Award, Kingaroy WWTP, IPWEA Excellence Awards.
2016 Winner. Excellence Award for Water Innovation, Gordonbrook WTP, IPWEA Excellence Awards.
2016 Winner. Excellence Award for Public Water Works Projects over $10 million, Kingaroy WWTP, IPWEA Excellence Awards.
2017 Winner. Best International Commercial Plant, Yarra Valley Waste to Energy, ADBA UK AD & Biogas Industry Awards.
2017 Winner. Outstanding Corporate Initiative in Collection/Processing Marketing, Yarra Valley Waste to Energy, VIC AORA Awards.
2017 Finalist. Environmental Protection, Yarra Valley Waste to Energy, Victorian Government, Premier's Sustainability Awards.
2017 Winner. Infrastructure Project Innovation Award, Kingaroy WWTP, Australian Water Association, QLD.
2017 Winner. Banksia Leadership in the Circular Economy Award, Yarra Valley Waste to Energy, Banksia Sustainability Awards.
2017 Winner. Business of the Year, Ipswich Chamber of Commerce and Industry.
2017 Finalist. Infrastructure Project Innovation Award, Aurora Waste to Energy Facility, Australian Water Association, VIC.
2018 Winner. Maxcon Industries. Fabricator of the Year Award, Weld Australia, NSW.
2020 Winner. Yarra Valley Waste to Energy Facility chosen as winner of Australasian Infrastructure Project Innovation Award at the Australian Water Association 2020 Online Awards Event.
2021 Finalist. Infrastructure Project Innovation Award (Regional) 2021, Charters Towers FEJ Butcher Water Treatment Plant, QLD Water Awards (Australian Water Association).
2022 Winner. Research and Development Excellence Award, Algae Research, Australian Water Association Qld Water Awards
2023 Winner, Supplier Contribution Award, Qld Water Directorate
2023 Winner. Best Value Partner Trojan UV, Trojan Technologies, Trojan UV High Growth Markets Channel Partners Sumit
2025 Winner. Best Nereda win by a licensee Nereda Community Days 2025
Winner. R&D Excellence award, Advancing sludge treatment technologies for customer affordability and environmental benifit.



Aquatec Maxcon Group Divisions



AQUATEC MAXCON

Aquatec Maxcon is one of the only broad based water companies in Australia that provides a complete range of in-house process, mechanical and environmental engineering services. The range of diverse services includes: pilot plant and treatability studies, process selection and equipment design, project management, engineering (all disciplines), drafting, commissioning, operations, service and maintenance.

MPA Engineering is one of the leading specialists in the field of machine and plant automation in Australia and provides a complete range of in-house services. MPA Engineering is a highly competent and customer focused organisation dedicated to providing superior design, manufacture, installation and commissioning of electrical control and safety systems to some of Australia's most prominent manufacturers and process companies.





Maxcon Industries specialises in fabrication, mechanical installation, service, and maintenance. Fabrication includes design, manufacture and delivery services for large volume steel fabrication projects including highest quality one off custom pieces and multiple complex objects, with specialist welding and manufacturing experience. Mechanical installation, service and maintenance is performed all over Australia, including remote locations such as Wujal Wujal in NQ and Leinster in WA.

Aquatec Maxcon Asia operates four (4) workshops in the Rayong Province, Thailand, each with unique specifications and capabilities to cater to diverse manufacturing and fabrication needs. The workshops' floor areas range from 720m2 to 2,520m2, with widths varying from 16m to 30m and lengths ranging from 60m to 94m. Additionally, each workshop is equipped with overhead cranes of varying sizes, totalling over 150T collectively. This facility is capable of complex steel fabrication of large-scale items that can be quickly transported worldwide using Antonov cargo planes.



Our People



Peter Ferrando
31 Years



Monita Naicker
25 Years



Paul Kwong
38 Years



Zak Floydesmith
16 Years



Lawrence Cheung
22 Years



Thomas Davis
9 years



Jason Ramsey
6 years

Our dedicated employees at Aquatec Maxcon are the backbone of our success. With their wealth of knowledge and experience, they play a crucial role in upholding our company's culture, history, and mission. Not only do they serve as mentors and role models for new team members, but they also build strong relationships with our customers, clients, and stakeholders. These relationships are essential for the continued success of Aquatec Maxcon Group.

Aquatec Maxcon Group celebrated 41 of our employees at our recent Service Dinner, all of whom hit long service milestones of 10 years and above. In particular, we wish to honour the incredible dedication of John Blake who has invested an astonishing 54 years to our organisation.



Denham Melder
4 Years



Scott Mobsby
25 Years



Al Sanchez
32 Years



John Blake
54 Years



Phinitnon Kumjundee



Jake de Otter
21 Years



Sumedh Gawai
1 Year

Community Engagement and Environment

Aquatec Maxcon Group places great value in local community engagement and protection and sustainability of the environment, inclusive of flora, fauna and wildlife. We pride ourselves on our local industry participation adn positive impacts our operations have on local communites and the environment. We understand the economic, social and environmental benefits of utilising local resources and labour and engaging with the local community.



Sponsorship of local school colour competition

Aquatec Maxcon Group on the Black Gully Project donated $100 to the Emerald Tigers Junior Rugby League Footbal Club to contribute to fund an enclosed trailer to carry their gear to away games and donated some plywood to the Emerald Gymnastics and Trampoline Club for a new indoor climbing wall.

Address local suppliers of project opportunities





Aquatec Maxcon staff also donated their time and off-cuts and disused LVL's to build a ramp for Alf Canham (Simons Contracting) son to enable him to access the new family home with ease.



Rescuing and safely relocating wildlife





Environmental silt fencing and rock check dams



Research and Development

Aquatec Maxcon Group is dedicated to research and development and works collaboratively with universities and government organisations to test and develop new technologies in the water industry. We have designed, supplied and/or operated several pilot plants including Nereda®, UASB, Forward Osmosis, Upflow Anaerobic Bioreactors, Anammox, MBR and UF etc. Our team of engineers works constantly with in-house designers, boilermakers and fitters and turners to continually improve both our products and our manufacturing capabilities.

The AquaBlade Suite and Aeration Test Facility



1996	1998	1998	1999	2002	2004	2008	2011	2017	2018	2019
Aquatec Maxcon introduces Fine Bubble diffused air technology	AquaBlade - first Australian fine bubble membrane diffuser	Aquatec Maxcon builds Australia's only full scale testing facility for diffused air systems	AquaBlade installed by Brisbane Water at Wacol plant in Stages 1 & 2 Bega SC installs at Eden WTP	AquaBlades now installed in over 25 plants for major customers in Australasia	China purchases diffusers	Chinese Patent obtained	AquaBlades have been installed at Branxton plant for over 11 years	Australian Patent obtained	Research and development of AquaBlade L	Trial of the AquaBlade L at Kingaroy WWTP First installation at Bundaberg WWTP

The AquaBlade suite of fine bubble membrane diffusers are the only Australian designed and manufactured diffusers on the market. They have been proudly developed by Aquatec Maxcon as a result of over 30 years of aeration design, research and development experience.

The AquaBlade suite of fine bubble membrane diffusers are 100% Australian designed and proudly developed as a result of over 31 years aeration design and research.
AquaBlades are extensively aeration tested and design verified at our Ipswich facility in a full scale 13m trough, 10m deep tank. The test tank enables us to carry out comparisons between different diffusers as well as end-of life diffuser performance. Tests include oxygen transfer rate, corrosion resistance, membrane back pressure and mechanical property testing of all components and whole assembles.



In 2018 Aquatec Maxcon welcomed our evolutionary AquaBlade L diffuser. A strip diffuser (shown above as a single blade and as a 12m strip coupling).





Technology and Products

Nereda® Technology

Aquatec Maxcon partnering with Royal Haskoning DHV have designed and constructed the world leading Nereda® Aerobic Granular Sludge Technology at:

- Kingaroy
- Longford
- Quakers Hill.


Kingaroy WWTP

Nereda® is an innovative and advanced biological wastewater treatment technology that purifies water using unique features of aerobic granular biomass.

There are over 115 operational and under construction plants, worldwide and is proven technology under Australian conditions.

The Nereda® technology has proven to deliver:

- excellent performance
- lower operating and maintenance costs and
- contains no moving parts other than fine bubble membrane diffusers.

At construction phase the Nereda® provides:

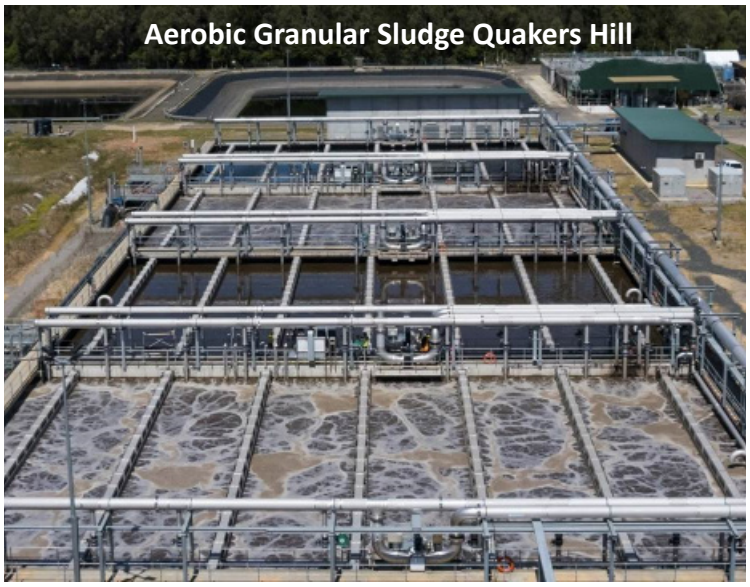
- reduced carbon footprint
- reduced and lower excavation
- fewer concrete pours
- reduced field pipework installation and
- simplified, modular pipework grids within the tanks for reduced installation costs.

Energy consumption is reduced through elimination of unnecessary drives, mixers, recyclers and clarifiers leading to MBDC's greenhouse emission targets and is expected to deliver energy savings of over 30%.

The intelligent automated operation management system reduces operator requirements while the interface assists operators and plant management with unequalled data and analytics.

24 hour support is available through remote connection enabling access to our Nereda® specialist personnel and support from Royal Haskoning DHV.


Longford STP Upgrade


Aerobic Granular Sludge Quakers Hill

Technology and Products

Waste to Energy Facility and Operations

Aquatec Maxcon has continued to evolve in innovative ideas and waste to energy products as part of our vision to provide innovative technology to the Australian water industry. Aquatec Maxcon partnered with Weltec Bio power to design and construct the Yarra Valley Waste Water Treatment Plant.


Aurora Waste to Energy Plant

The Project drivers were:

- Sustainabiity
- reduction greehouse gases
- additional revenue.

The Facility:

- is designed to generate electricity feeding solid/liquid organic waste into biological process and using methane-rich biogas to fuel generators.
- receives 100t of waste per day produces approximately 1MW of electricity; enough to run the Facility and Aurora Sewage Treatment Plant with excess exported to the grid.
- accommodates both organic liquid and solid waste (60/40) to an average of 100t p/day.

The challenge was to keep the Waste to Energy process separate from the existing Sewage Treatment Plant; Aquatec Maxcon in collaboration with Yarra Valley Water redesigned the digestate stream to go through the adajacent existing treatment plant, utilising the existing infrastructure to dispose of the sludge, saving millions.

Yarra Valley Water manages the gate fee and marketing and Aquatec Maxcon continues to be the operator.

Algae Research and Development Plant



The Algae Research and Development plant delivered an entirely new, low-cost treatment solution, specifically targeted at regional and remote facilities. At the heart of the project is the integration of two technologies:

- Up-flow Anaerobic Sludge Blanket (UASB) anaerobic process; and
- High-Rate Algae Ponds (HRAP),

as a retrofit opportunity for current Waste Stabilisation Ponds (WSP). While the developed technology is cost competitive with existing technology, it provides significantly better environmental performance, operational outcomes and resource recovery.



The research program included over 30 months of pilot operation at Urban Utilities' Innovation Precinct and delivered two full-scale demonstration plants: one at the Helidon resource Recovery Centre Queensland and the other at the Leanyer-Sanderson Wastewater Treatment Plant, Northern Territory.
The project brought together national and international contributors to develop key operating parameters and fundamental research discoveries, enabling full-scale application as well as new knowledge for this field of research.

Technology and Products

Clarifiers

Aquatec Maxcon is a market leader in Clarifier installations. One of the oldest clarifier installations is a 40m diameter clarifier located at Luggage Point Sewage Treatment Plant and has been operational since 1970.

Circular Clarifier:

- Peripheral Driver or Centre Driven Scraper
- Full or Half Bridge
- Suction trough
- Tow-bro suction arm

Rectangular Clarifier:

- Travelling Bridge Scraper
- Chain and flight
- Reciprocating suction type with cable driven (MRI)



Cowes WWTP 20m Peripheral Clarifier



Maroochydore STP Primary Sedimentation Tank

Scraper Assemblies

- Any number of scrapers suspended off the traveling bridge scrape the floor

Central Sludge Hopper

- RAS pumps draw sludge from central sludge hopper via embedded suction line
- Sludge returned to bioreactors
- Sludge stirrers used to stop sludge caking

Weir and Launder

- Clarified effluent overflows v-notch weir into launder then to the UV disinfection system
- Launder sprays used to clean weir plates
- Scum baffle prevents surface scum overflow into launder

Scum Skimmer

- Directs surface scum to scum collector
- Scum returned to bioreactors



Sandgate WWTP 45m Clarifier



Douglas WTP Lamella Clarifiers 32m x 22.7m

Energy Dissipating Inlet (EDI)

- Baffles on the energy dissipating inlet reduce energy of flow
- Assist in reformation of floc for enhanced setting.
- Water spray system used to breakup surface scum within the EDI

Flocculating Baffle

- Provides area for floc reformation to occur
- Settlement occurs, sludge is deposited onto floor of Clarifier

Lamella Plate Settler System

- Plates can be walked on and removed
- Flow Control Decks
- Feed Channels

Service and Maintenance

At Aquatec Maxcon Group, we focus on adding value to our customer's businesses by delivering superior long-term solutions across all stages of an asset lifecycle, improving plant reliability and uptime.

By engaging a highly skilled specialist team to oversee or conduct the maintenance of key equipment, asset owners and managers can reduce the total cost of their operations. Rather than utilising several contractors to conduct servicing of key equipment, significant economies of scale can be realised by engaging one specialist partner like Aquatec Maxcon Group. The Aquatec Maxcon Service Department is well resourced and a highly skilled service provider who has learnt what asset owners need through more than 50 years of uninterrupted experience in the Australian Water Industry.



Our Service Department is proud to have a national team of multi-disciplined, internationally trained technicians who are specialists in high risk/high value equipment servicing, maintenance and asset lifecycle solutions. Our experienced technicians are available for scheduled and planned maintenance and asset, plant and performance optimisation services. We also offer relief staff for plant operators and 24/7 emergency call out services.

Aquatec Maxcon Group holds an extensive stock of genuine specialist parts for immediate emergency dispatch and has the ability to custom design and fabricate hard to find or discontinued parts.

- Genuine parts, reliable service, seven days per week
- Scheduled maintenance services and reporting, emergency servicing and call outs
- National team of multi-discipline, internationally trained technicians
- Reducing operational cost through proactive key asset maintenance
- Plant commissioning support



Off Gas Testing



UV

Our experienced technicians are available for scheduled maintenance and plant and performance optimisation services.

Manufacturing and Electrical

Manufacturing Facilities

The Aquatec Maxcon Group's premises in Ipswich, QLD is located on 11 hectares of land. In addition to our offices, laboratories and test facilities, it houses our manufacturing, switchboard, blasting and painting workshops and has a substantial capacity for storage, assembly, loading and unloading of equipment for transportation.

Maxcon Industries, our fabrication division, specialises in large volume steel fabrication projects, quality one-off custom pieces and other complex equipment. Our workshops are able to fabricate any components capable of road transport and produce any kind of plate work and general structural work.

Our manufacturing and painting services include, but are not limited to:

- Specialist welding and fabrication
- Supply of appropriate Quality Assurance and Warranty documentation as required by customer
- Cryogenics maintenance and repairs
- On-site installation, maintenance and repairs, including abrasive blasting and painting



Electrical Facilities

MPA Engineering, our electrical contracting division, is a multi-disciplined engineering, project delivery and electrical contracting company undertaking projects across Australia and internationally. It is one of Australia's leading electrical systems integrators specialising in sophisticated machine and plant automation solutions.

MPA Engineering services has a large switchboard manufacturing workshop capable of industrial and commercial switchboard design, manufacture, testing and repairs. From the very largest of motor control centres to smaller control panels for Original Equipment Manufacturer, the workshop teams build high quality switchboards to Australian Standards and client specifications which include mild steel, stainless steel, aluminium, push button stations and type tested switchboards, from small local control panels to Form 4b>12m back to back.



MPA Engineering has over 33 years' experience in delivering specialist electrical engineering solutions and specialises in electrical engineering and installations, design and drafting, control, switchboards, renewable energies, electrical servicing and maintenance.

Our highly trained and experienced team of engineers, technicians and trades people are able to execute a diverse range of projects from concept through to commissioning and delivery. Additionally, our dedicated customer focused staff have the capability to provide ongoing support and maintenance services for the complete operational life cycle of a project or facility.

QSE Information

Aquatec Maxcon Group is third party certified to ISO 9001:2015; ISO 45001:2018 and ISO 14001:2015 and has been certified by the Federal Safety Commissioner for Australian Government Building and Construction WHS Accreditation.



Key Projects



DOUGLAS WTP

Townsville City Council
Douglas, QLD
Capacity: 1100 L/sec
Installation of Clarifier Modules 3 and 4 enables TCC is reliably able to meet and exceed treatment capacity of the facility providing an improved, modern and user-friendly control system.



FRESHWATER CREEK WTP FILTER UPGRADE

Cairns Regional Council
Cairns, QLD
Refurbishment, removal of equipment and coatings, application of new coating to all wetted areas, installation of new AWI underdrain system, replacement media installation, PLC/ SCADA upgrades and recommissioning.



GLADSTONE WWTP BIOSOLIDS HANDLING UP-GRADE

Gladstone Regional Council
D&C new sludge handling processes, collection and processing on-site, improve storage and loadout reliability, efficiency for increase in sludge due to growth. Grade B Stablised biosolids with low odour marketable for reuse.



BURWOOD BEACH WWTP AERATION

Hunter Water Australia
Merewether, NSW
Design, supply, commission of our patented fine bubble diffuser (AquaBlade L). The AquaBlade L has a span of up to 12m, a concconcave structural fibreglass base plate, with only 1 feed, transfers feed air from header along diffuser into a second diffuser.



PRINCE OF WALES DIGESTER ROOF UPGRADE

TasWater
Capacity: 16.8m diameter
Design, fabricate, supply, assemble, paint and install a floating roof gas holder on the Primary Digester. Consistomg of top plate and central thrust ring interconnected by top beams with a total of 16 segments.



QUAKERS HILL AEROBIC GRANULAR SLUDGE UPGRADE

Sydney Water
Capacity: 155,000EP
The second largest plant servicing western Sydney. New design, supplied and commissioned using the Nereda® technology provding less maintenance, smaller footprint, low energy costs and reduced chemical consumption.



RIVERSTONE ODOUR CONTROL FACILITY

Sydney Water
Capacity: 46,000 Nm3/h
Design and construction of BioAir odour control facility which comprised a 46,000 m3/h bio-tricking filter plant, activiated carbon polishing filters and an auxiliary plant. Foul air extracted was treated to meet a 500 OU emission limit.



CHARTERS TOWERS WATER INFRASTRUCTURE UPGRADE PROGRAM

Charters Towers Regional Council
Capacity: 22MLD
To improve performance of existing plant, Aquatec Maxcon designed, supplied, constructed and commissioned two Lamella Clarifier Trains replacing existing Modules 1 and 2.



WARRIEWOOD UV

Sydney Water
Location: Northern Beaches
Trojan UV disinfects up to 595 L/S at a very low transmissivity of 42%. The specialised system utilises a special chemical mechanical cleaning system that determines when the system requires cleaning then instigates an automatic cleaning cycle.



LONGFORD SEWAGE TREATMENT PLANT UPGRADE

TasWater
Capacity: 20,000 EP
The upgrade uses Nereda® water treatment technology with capital cost savings, reduction in overall carbon footprint and significant reductions in power usage and operating costs.



BOWEN SEWAGE TREATMENT PLANT UPGRADE

Whitsunday Regional Council
Capacity: 14,000 EP
Doubling the capacity of the plant, allows the new facility to treat a greater volume of quality Class A recycled water, which can be reused for irrigation in Bowen's parks,



YARRA VALLEY WASTE TO ENERGY

Yarra Valley Water
Capacity: 100t waste p/ day
The Waste to Energy facility is self-powered using biogas derived from the digestion of organic wastes to fuel generators with up to 80% of excess electricity exported to the grid.

Key Projects



KINGAROY

South Burnett Regional Council
Capacity: 2,500EP
The first Australian Plant to utilise Nereda® aerobic granular sludge technology, which delivers more sustainable outcomes as it uses smaller structures and requires less energy and chemicals.



PICNIC BAY

Citiwater
Capacity: 2,000EP
Construction of first MBR Plant in Australia at Picnic Bay. The plant achieved a total nitrogen of 3mg/L and was awarded an Engineering Excellence Award as it met and exceeded the Great Barrier Reef Marine requirements.



COFFS HARBOUR

Coffs Harbour City Council
Capacity: 72,000EP
Aquatec Maxcon was selected in the CIA Alliance at Coffs Harbour to provide all mechanical works for the complete water and wastewater treatment plants.



CLEVELAND BAY

Townsville CitiWater
Capacity: 126,000EP
Aquatec Maxcon was an integral part of the Water Matters Alliance that delivered Australia's largest MBR Plant at Horseshoe Bay STP as part of a programme of 26 projects.



XXXX BREWERY

Castlemaine Perkins
Capacity: 2.2 ML/d
Aquatec Maxcon was the Principal Contractor and process designer for one of the most signficant drought mitigation projects in south east QLD that included the first Circox Aerobic Granular Plant to treat industrial wastewater to Class A Reuse Standards.



BLACK ROCK AERATION SYSTEM

Barwon Water
Capacity: 50 ML/d
Largest SBR Plant in southern hempisphere at it's time. Alongside mechanical works, we provided 40,000 Fine Bubble Diffusers to the plant.

BWEA ALLIANCE

Client: Brisbane Water Capacity: 300,000EP
Location: Sandgate, Wacol, Wynnum, Oxley



As part of the BWEA Alliance, Aquatec Maxcon delivered Oxley, Wacol, Sandgate and Wynnum Treatment Plants. At the forefront of innovative design and construction the Sandgate Circular Outside Oxidation Tank Arrangement (SCOOTA) is a great example. The plant could not be taken offline and innovative workshops were conducted reduction 10 options to 4 from which a decision tree was put together, pricing all branches and narrowing down to the preferred option. The SCOOTA was selected and is illustrated to the right. Constructed in two stages the first tank took 14 months to complete (2 months behind schedule) so another innovation workshop was facilitated by Peter Ferrando, the Project Manager and the revised construction method completed the second tank within 7 months.

Other innovations:

- use of thermo hydrolysis (CAMBI) to improve digester performance
- Struvite Reactor - the only plant of its type to remove phosphorous from the supernatant water stream

BCAA ALLIANCE

Client: Brisbane Water, Cab Water, Seqwater Capacity: 28 ML/d
Location: Sunnybank, Runcorn, Algester, Chandler, Forrest Lake, Enoggerra, Banksia Beach

As Principal Contractor provided all civil, mechanical and electrical/control works for seven water treatment plants. The first 5 plants built and operational within one year. Plants provided supplementary supply of high quality drinking water to consumers in times of low traditional water resource reserves.

Main elements were:

- Borefield pumping stations and reticulation to respective WTP sites
- Aeration tower for CO2 gas stripping and pH control
- Pre treatment chemical dosing including pre caustic soda, coagulant and pre sodium hypochlorite
- Pressure filtration equipment including automated control valving and monitoring instrumentation
- Post treatment chemical dosing including post caustic soda, chlorination and calcium chloride
- Treated water storage tank and pump station
- Wastewater handling system including washwater holding tank and transfer facilities.
- Complete electrical and control works



Runcorn



Algester



Forrest Lake



Sunnybank



Chandler

Key Technologies

Wastewater Process Technologies



Aerobic Digestion

A biological process using long-term aeration to stabilise and reduce the total mass of organic waste biologically destroying volatile solids.



Anammox®

The Paques Anammox® process uses less carbon and energy removing nitrogen and offers carbon neutral or even carbon positive wastewater treatment.



Anaerobic Digestion

A series of biological processes in which micro-oganisms break down biodegradable material in the absence of oxygen resulting in biogas powering gas engines to deliver green energy.



Clarifier and Thick-ener

Single, double or triple bridge scraper and syphon type sludge removal systems for tanks up to 55m in diameter.



DAF (Dissolved Air Flotation)

Circular or rectangular DAF systems providing simple, reliable solids separation and thickening of up to 5-7% DS for industrial separation and municipal thickening.



Decanter

Used in SBR tanks in the wastewater treatment process. Solids settle deeper into tanks while decanters are lowered to remove clearer water (supernatant) from the surface.



Diffused Aeration

Fine bubble membrane diffusers provide the highest available SOTE efficiencies. Test Tank is available to verify design.



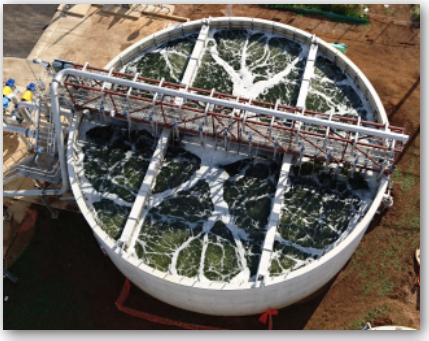
Gravity Thickener

A simple pretreatment of sludges. Covers are available for effective odour control.



Grit Removal

Vortex, aerated and constant velocity grit channels together with grit separating and washing devices.



Nereda® Aerobic Granular Sludge

RHDHV's Nereda® process biological treatment of wastewater with 25-35% less energy consumption, compact and very cost effective.



HBNR (Hybrid Biological Nutrient Removal)

The HBNR achieves both biological nitrogen and phosphorus removal with excellent settling capability and has all the benefits of conventional extended aeration processes.



MBR

Aquatec Maxcon built Australia's first MBR using membranes that directly deliver microfiltered water achieving Class A+ recycled water and has delivered MBR projects over 120,000 EP.

Key Technologies Wastewater Process Technologies



Odour Control System

Our solutions effectively treat air streams to meet EPA requirements ranging from lift/pump stations to dewatering/sludge drying operations.



Oxidation Ditch

We offer efficient surface aerators and energy-saving diffused aeration systems for both straight and circular basins, along with submersible mixers and flow boosters.



Package Plants

To deliver quality water we select extended aeration, hybrid biological nutrient reduction and membrane bioreactor technologies.



SBR (IDEA/IDAL)

SBR offers the advantage of complete treatment in single or dual bioreactors. High levels of biological nutrient reduction is achieved at lower capital and operating cost.



Screens

Extensive range of coarse and fine inlet screens to suit all applications including climber, chain type, semi rotary, step screen, drum screens and Aquatec Band Screen.



Scum Harvester

Floating scum caused by waste oils or bacteria is efficiently collected by Scum harvesters



Solar Dryer

Using Solar energy, sludge is dried to any desired dry solids and an automated system uses sludge turner to transport, stockpile and discharge dried sludge.



Surface Aeration

Vertical shaft surface aerators provide aeration and mixing for biological reactors including IDAL, IDEA, SBR, oxidation ditches and aerobic digesters.



UV

Trojan Technologies the world leader in UV disinfection offers high efficiency lamp technology with validated disinfection for both water and wastewater.



Waste to Energy

The digesters produce renewable energy from a variety of different waste sources. The biogas is used directly for producing heat or combined power and heat (CHP).

Key Technologies

Potable Water Technologies



Clarifier - Circular or Rectangular Scraper

Wide range of conventional, solids recirculation, sludge blanket, tube settler and lamellar clarifiers to suit differing water qualities and site constraints.



DAF

Clarification process that relies on flotation of floc particles to the surface. Suited to particular quality raw water streams - generally low turbidity, coloured waters.



DAFF

DAFF technology process responds well to changing conditions and is suited to treat algae bearing water sources.



Gravity Media Filter

Suits differing water qualities. Range consists of mono, dual and multi-media filters with combined or separate air scour through our proprietary filter nozzles and underdrain systems.



Lamella

A process where the flocculated water stream is separated into a clarified water stream and a concentrated sludge system to reduce the solids load at filtration stage.



Membrane Systems (RO/UF/MF)

Microfiltration and ultrafiltration membrane solutions, optimised to a range of applications to remove turbidity, large colloidal particles, micro-organisms and high MW



Package Treatment Plants

All conventional water treatment process steps incorporated into one package plant to suit the potable water demand of mine sites and small towns all across Australia.



Pressure Media Filter

Simple and cost effective solution with multimedia or continuously backwashed filters so low turbidity waters can be filtered directly without extensive pretreatment.



UV

Trojan UV-Oxidation systems are simple and effective for taste and odour, Algal Toxin treatment with simultaneous disinfection.

Key Technologies

Industrial Technologies



Anammox

Offers great advantages compared to conventional nitrogen removal processes. Lower power consumption, no additional carbon source required, low cost, and less harm to the environment.



Circox

Paques Circox process utilises unique aerobic granular biomass for treatment of industrial waste including polishing UASB effluent streams. Plants have small footprint, excellent process stability and deliver very low COD product.



Thiopaq

Paques world leading Thiopaq technology enables biological treatment of streams containing hydrogen sulphide to produce elemental sulphur.



UASB

Paques UASB systems leading technology uses granular biomass for treatment of high COD waste streams frequently emanating from food, beverage and similar factories.



Coffs Harbour DAFF

Aquatec Maxcon

Group



Ipswich, QLD (Head Office)
119 Toongarra Road
Wulkuraka QLD 4305
P: (07) 3813 7100

Thailand
7/241 Moo.6 Tumbon Mab
Yang Pong, Amphur, Pluakdeang
Rayong Province, Thailand
P: (+66) 38 650 375

