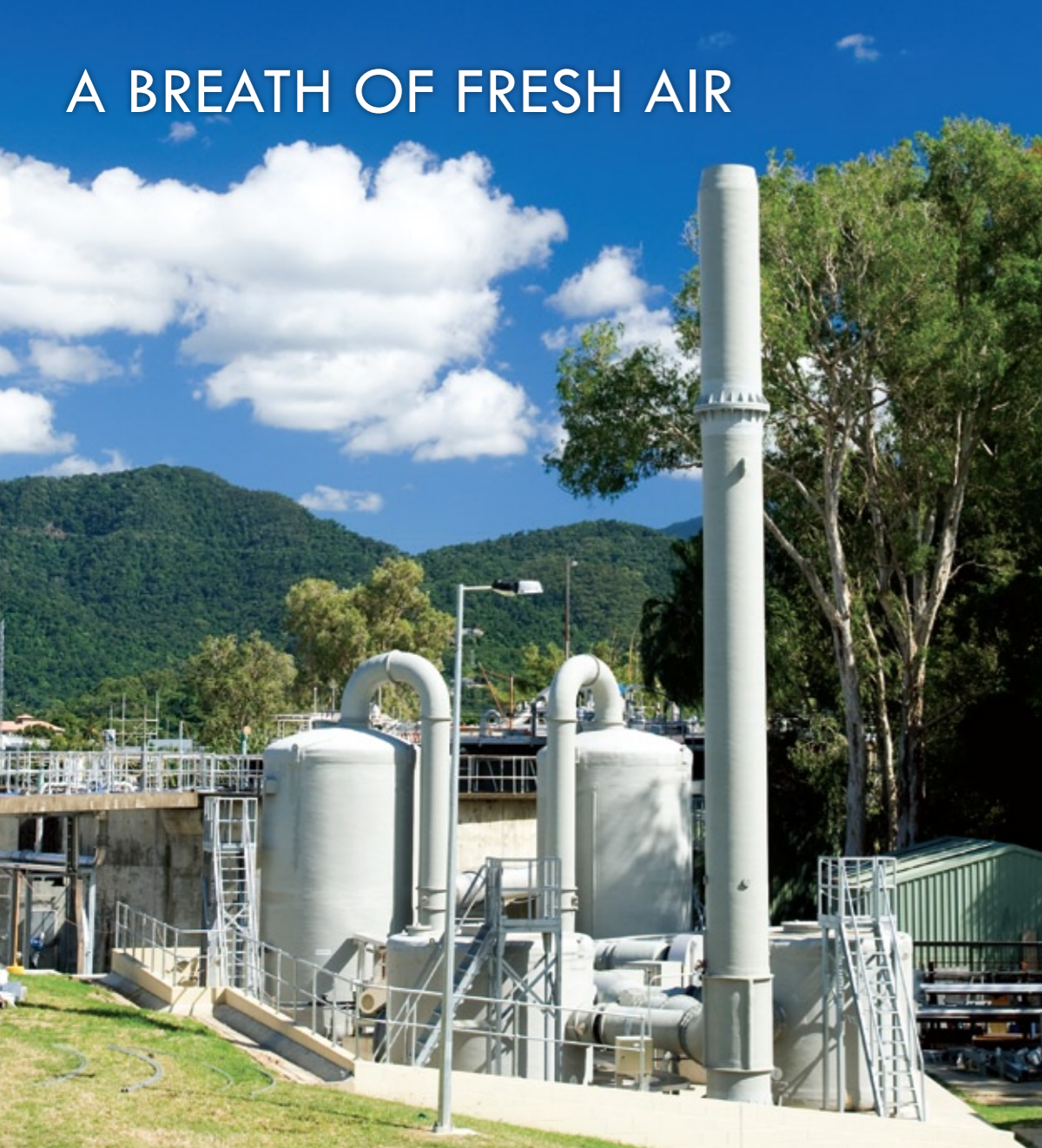


A BREATH OF FRESH AIR



Waste Water Treatment Plants can get awfully whiffy; fortunately, when the balmy tropical breeze blows around Cairns, technology by Aromatrix ensures there's no unpleasant odours from the newly upgraded Marlin Coast, Northern or Southern WWTPs. Aromatrix engineer leading edge odour control technologies based on bacterial action and activated carbon, rather than harsh chemicals. This approach makes their process an ecologically safe choice for the adjoining Great Barrier Reef Marine Park.

A combination of mechanical, civil, electrical and chemical engineering expertise in house, combined with manufacturing associates in Asia, meant Aromatrix had the capability to handle the full brief of design, supply, install and commissioning for three odour control systems to extract hydrogen sulphide, mercaptans, VOCs and other bad smells from the inlet works of these facilities, and other minor sources around the plants. Post-scrubbing, the resulting odorless compounds are discharged to the treatment works, incorporated into the sludge mass and thence removed.

Extensive research into airflow, odour dispersal patterns and detectable levels of odour in neighbouring locations preceded the design phase, in order to maximise effectiveness and meet or exceed EPA targets for air quality. One of the challenges from a site perspective was the need for facilities at Marlin Coast and Northern to be constructed on a raised

platform to prevent damage during flooding. Another design parameter was the extreme weather, including heat, humidity and cyclonic winds which are par for the course in the Tropics.

Work on design and manufacture commenced in 2008, followed by on site works including the installation of plant, electrical and civil works. All systems were delivered for installation as entire units, including PLCs, ductwork, fans, and signage. The systems then had an acclimatization phase of six weeks, which allows the bacterial process which oxidizes H₂S (Hydrogen Sulphide) to establish itself. "For odour control, traditional chemical scrubbing uses harsh chemicals such as sodium hypochlorite and caustic soda," explained Aromatrix Managing Director, Gary Finke.

"Our systems for these three plants combine bioscrubbers and activated carbon filters. The bacteria, Thiobacillus, in the bioscrubber does what chemicals would; these bacteria love H₂S. They remove the sulphur based compounds, and the resulting solution is around pH 2, roughly equivalent to vinegar. It is a much more environmentally friendly, biological process.

"Biological treatment has been around since the 1950s, when someone found you could purify air by passing it through soil. We knew bacteria can absorb certain gases, and there was a need to craft the right

process to use them. Our R&D is constant, and our technology has won multiple awards. "Aromatrix Australia, backed by regional offices throughout Asia, is a leading provider of innovative solutions to air quality and odour related problems. We provide complete engineering services for the design and construction of advanced odour control technologies such as our award winning biotrickling filters, biofilters, chemical scrubbers and activated carbon filters.

"Our services include odour sampling, testing using approved olfactometry methods, and consultancy services dealing with odour reduction strategies, sulphide and air dispersion modeling."

Aromatrix Australia have been in operation since 2004, and have rapidly established themselves as capable of providing mitigation measures for any odour source connected with either waste water or a process unit. Their approach is to work closely with clients from the earliest stages, and where needed, provide front end advice for feasibility studies, concept design, and tender documentation, before following through with building, installing and performance testing the agreed solution.

Other major installations currently being completed by Aromatrix include a chemical scrubbing facility for Moreton Bay Regional Council at Murrumbah, capable of treating 67,000m³ of air per hour; and a Carbon Absorption System for Beenypup Waste Water

Treatment Plant in Jindaloo, Western Australia, which will deodorise up to 150,000m³ of air an hour. In addition to dozens of successful systems installed around Australia at municipal waste water treatment facilities, Aromatrix have supplied their technology to multiple plants in Singapore, the USA and China. Their systems are suitable for new residential developments which incorporate water recycling and waste treatment facilities, and are also in use for odour control at Da Dou Soy Bean Project Oil processing operation in China, Walfertan Tannery in Australia and Sembawang Utilities Terminal, a waste collection and disposal service in Singapore.

Currently the company has in development a package plant, which can be containerised for transport to remote or under-served sites. With a design which has been proven and independently verified to deliver effective results, the real beauty of it from a project point of view is the whole turn-key package requires only ducting to commence operation.

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