

AQUASOL

WATER TREATMENT SOLUTIONS

ECONOMIC REGULATION AUTHORITY - PUBLIC SUMMARY

FAIRWAYS RETIREMENT VILLAGE

(FORMER LAKELANDS GOLFVIEW ESTATE)

SEWERAGE AND NON-POTABLE WATER SUPPLY SERVICES

PRESENTED BY: PAUL SAVAGE

AQUASOL

82-86 BERINGARRA AVE, MALAGA, PERTH WA 6090

TEL: 08 9248 7533 FAX: 08 9209 3975

PAUL.SAVAGE@AQUASOL.COM.AU

INDEX APPLICATION

I. Application Summary

- 1.1 A description of the applicant's structure and key organisational relationships.
- 1.2 A description of the services.
- 1.3 A description of the service infrastructure/works involved
- 1.4 Information on the status of other essential regulatory approvals
- 1.5 A description of any public consultation or stakeholder engagement processes undertaken concerning the licence project.

II. Appendix

Appendix 1: Site Plan

APPLICATION INFORMATION

I. Application Summary

Suntower Pty Ltd have purchased lots 5, 6 & 7 on Clubhouse Lane, Gnangara, to develop Fairways Retirement Village (Fairways). Site is adjacent to existing Gnangara Golf course / Country Club.

Gnangara is a suburb of Perth, Western Australia, located within the City of Wanneroo. Much of the suburb's area is semi rural, with residential estate developed in the early 1990s by Midland Brick and centred on Lakelands Drive borders includes the private 18-hole golf course Lakelands Country Club.

The total area of the Golf Course comprises approximately 90 [ha], and the proposed development site will occupy an area of approximately 10 [ha] to the north east of Clubhouse Lane at Lakelands Country Club.

The Fairways Project structure plan, development plan and subdivision design are based on detailed investigation involving planning, environmental, engineering and ethnographic assessment. The vision for Fairways development is to create a place which accords with its form and setting, and supports lifestyle opportunities for residents and visitors.

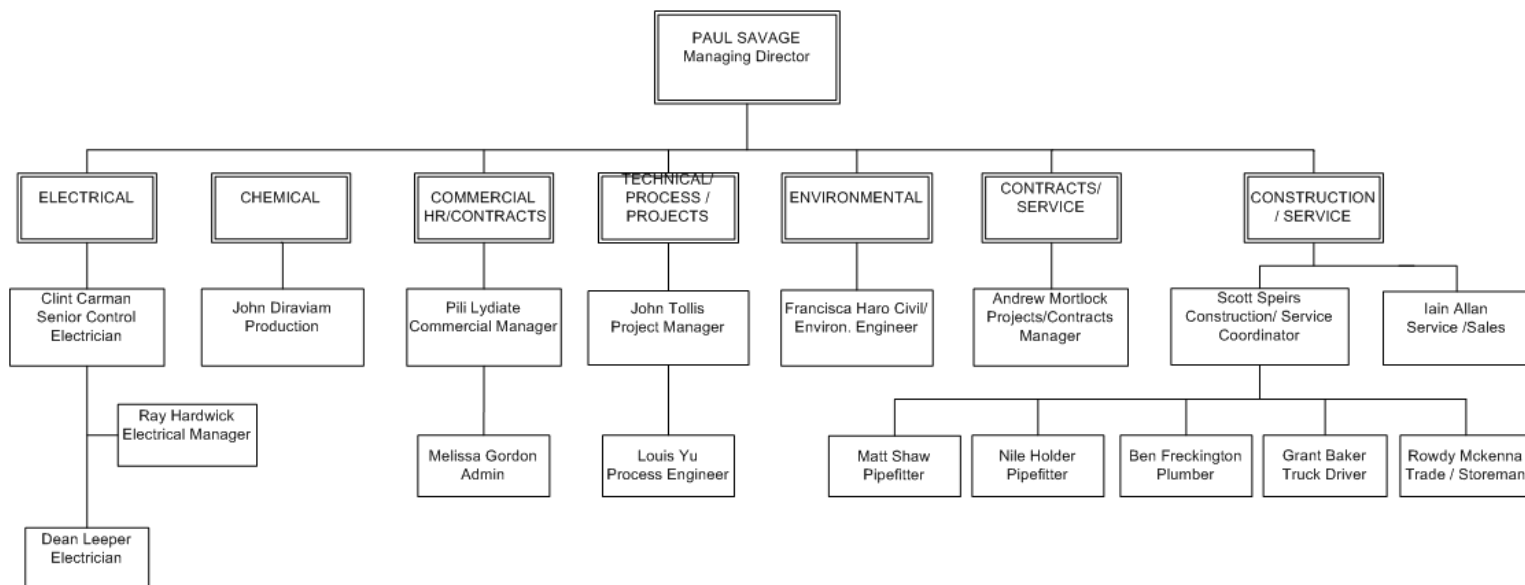
Due that connection to municipal services is not available in the area and neither economically feasible, Fairways Representatives formally engaged Aquasol to provide sewerage and non-potable water services; building and managing an onsite Waste Water Treatment Plant (WWTP) and supplying treated sewer (non potable water) to the golf course for irrigation. For this, Aquasol wish to will formally become the Service Provider for the retirement Village, applying for an amendment to its existing licence WL42.

For additional detailed information, please refer to Appendix 1.- Site Plan.

1.1 A description of the applicant's structure and key organisational relationships.

Aquasol was established in 1996 to supply a much needed service in the water and waste treatment industry. Initially a water management consulting company, Aquasol has specialised and expanded into the design and construction of Water Treatment Plants and supply and manufacture of associated chemicals and consumables.

Figure 1: Aquasol Organizational Chart



1.2 A description of the service

This application describe a proposed sewage system to service a new retirement village. This application includes a waste water treatment plant to service:

- 208 dwelling
- 82 apartments

This project will also provide non-potable water services to the adjacent Lakelands Country Club golf course. It is intended that non potable water (treated sewer) will be disposed for irrigation into the existing Golf course's driving range.

In preliminary discussions with Golf Course representatives, they have already agreed in principle to receive treated water for irrigation subject to required approvals conditions.

Table 1: Site Details

Golf Course Area	Development Plan	Irrigation Area Driving Range
 <p>An aerial photograph of a golf course area with a yellow outline indicating the proposed retirement village site. The site is labeled '10ha'. A smaller area within the site is labeled 'Irrigation area 3.8ha'. A 'WWTP location' is marked at the bottom right. Other labels include 'EXISTING WETLAND', 'EXISTING GOLF COURSE', 'EXISTING CLUB HOUSE LOCATION', and 'COMMUNITY CENTRE SITE'.</p>	 <p>A detailed site plan of the retirement village. It shows a grid of residential blocks, roads, and green spaces. A legend on the right side identifies different areas: 'WATER CANALS' (dark green), 'EXISTING GREEN' (light green), and 'PROPOSED PARK' (yellow). The plan shows the layout of the village and its integration with the surrounding landscape.</p>	 <p>An aerial photograph of a driving range area on a golf course. A large, irregularly shaped area is outlined in orange and labeled with the area '38,037.5 m²'. The surrounding area is a mix of green grass and trees.</p>

1.3 A description of the service infrastructure/works involved

➤ Design criteria:

Has been based on Regulation 29 of the Treatment of Sewage and Disposal of Effluent and Liquid Waste Regulations 1974.

Table 2: Regulation 29

Type of Premises (Regulation 29)	Equivalent Use	Combined Flow (L/person/day)
Aged home accommodation	Hydraulic loading calculation basing on actual occupancies can be permitted if local government planning approval sets occupancy limits for the entire development	150L/person/day

Minimum load: 70 Klt/day
 Average load: 90 KLt/day
 Maximum load: 130 KLt/day

Maximum waste water volume has been calculated based on max of 2 resident living permanently at the dwellings, plus a third person staying temporarily as a guest.

$$290dw \times 3EP/dw \times 150L/d = 130,000L/d$$

- Location and capacity of storage apparatus for the sewerage service.

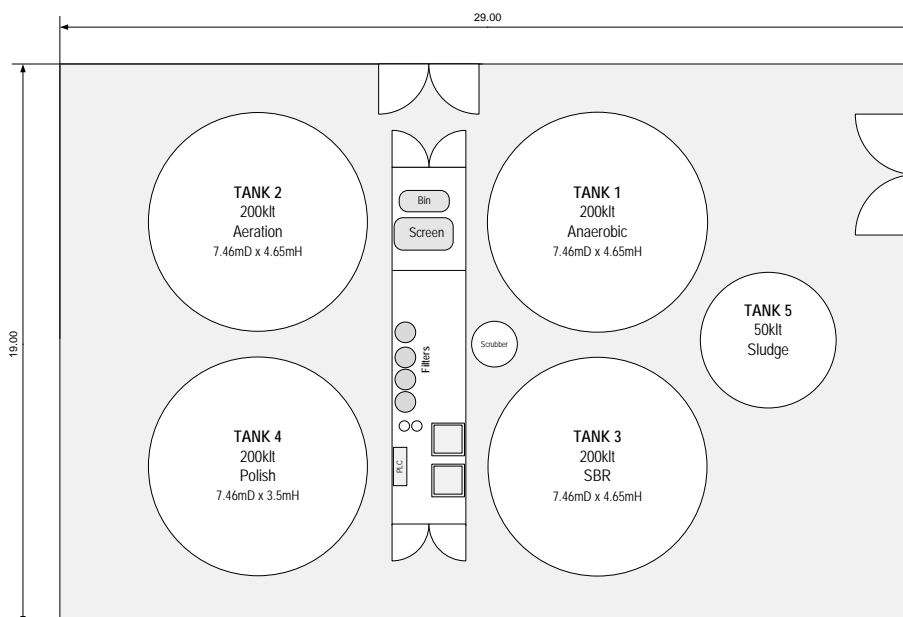
Proposed WWTP will cover an area of approximate 30m x 20m.

Table 3: Tanks Capacity

Tank	Total Capacity
Collection / Anaerobic Tank 1	200klt
Aeration Tank 2	200klt
SBR Tank 3	200klt
Polish Tank 4	200klt
Sludge Tank 5	50 klt

Smaller equipments as screen, filters, chemicals, control box, pumps, etc will be installed inside a 40 foot sea container.

Figure 2: WWTP General Arrangement.



- Location and capacity of storage apparatus for the non-potable service

For Non-potable water services, the existing infrastructure from the golf course will be used, including the irrigation system, irrigation control, pumps and storage tank.

➤ Location of the treatment apparatus for the sewerage and non-potable water services

It has been proposed that location of the treatment plant will be at the bottom right corner of the development. From there, treated water will be pumped to a storage tank at the golf course premises, and then, distributed for irrigation.

Figure 3: WWTP Location



➤ Sewer Catchment

Sewage catchment design has been formally completed. Sewer will be collected from the units and plumbed to a package waste water pump station, which will then pump the waste water to the WWTP. From there, treated water will be sent to a storage tank (as needed basis) at Golf Course compound for irrigation.

Figure 4: Sewer Catchment Description



1.4 Information on the status of other essential regulatory approvals

Table 4: Approval Status

Authority	Licence	Status
Department of Environmental Regulation	Waste Water Treatment Plant Application	Report submitted, waiting approval.
Department of Health	Waste Water Treatment Plant Application	In principle approval granted.
Local Shire	Waste Water Treatment Plant Application	Report submitted
Development Assessment	Development Approval	Conditionally approved by determination.
State Planning Commission		Conditionally approved.

1.5 A description of any public consultation or stakeholder engagement processes undertaken concerning the licence project.

The overall project was not sent out to Advertising by the City of Wanneroo. Suntower Pty Ltd undertook its own process of consultation with owners of neighbouring properties as part of our process of informing all of what was proposed. Residents were spoken with and provided with detailed information of all aspects of the development. They were then provided with an opportunity to sign a petition supporting the development. Suntower Pty Ltd received 1171 signatures for this petition. In addition, 23 of the surrounding residents provided letters of support for the development.

In addition, Golf Course representatives have agreed in principle to this proposal.

II. Appendix 1: Site Plan



NOTES:
 PLANTING WITHIN THE WETLAND BUFFER ZONE & BUILDING PROTECTION ZONE TO FULLY COMPLY WITH THE REQUIREMENTS OUTLINED WITHIN THE BUSH FIRE MANAGEMENT PLAN.

- LEGEND:**
- - - PROPOSED WALKING TRACKS
 - - - EXISTING WALKING TRACKS
 - KEY GREEN LINKS
 - - - GOLF COURSE BOUNDARY
 - ENTRY ROADS



NOTES:
 PLANTING WITHIN THE WETLAND BUFFER ZONE & BUILDING PROTECTION ZONE TO FULLY COMPLY WITH THE REQUIREMENTS OUTLINED WITHIN THE BUSH FIRE MANAGEMENT PLAN.

- LEGEND:**
- 1 PROPOSED CLUBHOUSE
 - 2 PROPOSED CLUBHOUSE CARPARK
 - 3 APARTMENT SITE 01
 - 4 COMMUNITY CENTRE 01
 - 5 APARTMENT SITE 02
 - 6 KEY GREEN LINK
 - 7 POCKET PARK 01
 - 8 COMMUNITY CENTRE 02
 - 9 COMMUNITY GARDEN
 - 10 APARTMENT SITE 03
 - 11 CARAVAN PARKING
 - 12 POCKET PARK 02
 - 13 WWTP ZONE
 - 14 ENTRY STATEMENT



LEGEND:

- DETAIL PLAN
- SECTION
- PERSPECTIVE VIEW



LAKELANDS GOLFVIEW ESTATE RETIREMENT VILLAGE
KEY PLAN



1:2000 @ A3

DATE: 16.08.2016
 JOB NO: ND1378
 DWG NO: 03
 REV: A