

An aerial photograph of a large water treatment plant at dusk. The sky is a deep, dark blue, transitioning to a lighter, orange-brown glow near the horizon. The plant itself is a complex of various structures, including several large, circular clarifiers in the foreground, numerous rectangular basins, and industrial buildings. The lighting is soft and directional, highlighting the textures of the concrete and the silhouettes of the structures against the twilight sky.

DematecAutomation

# WATER INFRASTRUCTURE

CAPABILITIES

## APPLICATIONS & CAPABILITIES

- Water and waste water treatment control systems
- Telemetry systems
- Dosing control applications
- Water and waste water instrumentation
- Pumping and water reticulation networks
- Remote asset monitoring & control using IIoT technology

## REFERENCE PROJECTS

Willunga Basin Water re-use network controls and communications upgrade

- Design, build, installation and commissioning of a new control and communications platform for the Willunga Basin Water reclaimed water distribution network, which delivers over 5 GL per annum into the McLaren Vale wine region
- Replacement of legacy communications infrastructure with a cellular network incorporating 14 sites to increase reliability, reduce operating costs and facilitate secure remote control for operators
- Comprehensive real-time network control and visibility provided with networked SCADA and local PLCs
- Staged site installation and cutover undertaken to minimise water delivery interruptions to the network's 200+ customers

Victor Harbor WWTP control & telemetry systems upgrade

- Upgrade of plant Citect SCADA system including integration of SCADA-phone automated alarm annunciation system
- Addition of new Ethernet radio telemetry network to replace existing serial network
- Upgrade of aeration (two 90kW blowers) and chemical dosing systems
- Modification of process operation for waste inlet
- Addition of new water re-use remote take-off stations

Tea Tree Gully Waterworld facility control system

- Design, build, installation, and commissioning of recreational facility control system
- Plant-wide SCADA & dual PLC control of pumping, heating & chemical dosing systems
- Integration with third party interactive multimedia systems
- Water quality control and analysis via alarm setpoints and historical trending
- Distributed telemetry including 3G remote access for operations & maintenance

Murray River water treatment plants PLCs upgrade

- Project to replace obsolete PLC5 processors with ControlLogix PLCs operating in a redundant configuration at four water treatment plants supplying towns along the Murray River
- Interfacing with the existing Remote I/O 16bit fieldbus I/O and device network
- Off-line program conversion, tag re-mapping and error checking
- Staged cutover from PLC5 to ControlLogix PLC control while maintaining satisfactory plant operation



SERVICES



Electrical Design & Construction

- Design and selection for electrical distribution and reticulation (LV)
- Electrical switchboard construction & installation (LV)
- Power factor correction and load shedding
- Power metering and billing systems
- Hazardous area electrical design & installation



Networking, Communications & Telemetry

- Automated alarm annunciation and escalation systems over local or cellular networks
- Telemetry based control and monitoring for remote processes
- Remote connectivity and access to networks and controls for external support services



PLC & SCADA

- PLC based control systems on wide range of platforms
- Plant-wide SCADA systems for total process automation and data collection
- Ongoing PLC & SCADA engineering support for installations, sites and networks



Project Management & System Delivery

- Management of turnkey projects, either as a principal supplier or as a consultant
- Plant layout for production flow and optimisation
- Site audits and analysis of industrial machinery & equipment



Remote Asset Management Systems & Support

- Use of Industrial Internet of Things technology to provide cost effective and secure monitoring and control of remote assets
- Access to real-time asset data via smart phone or tablets
- 24/7 engineering support services for operators of critical assets



Dematec's solutions in automation, monitoring, control and optimisation provide critical water infrastructure that covers an area roughly half the size of Europe. Our engineers are highly valued by clients in some of the remotest locations on Earth, keeping energy costs low and reliability of supply certain.

Our range of services involves solving complex technical issues and ensuring that commercial and strategic goals are met.

## SERVICES OVERVIEW

- Scoping and problem solving
- Matching technology to challenges
- Industrial automation & process control
- Industry 4.0 solutions for production & asset management
- Electrical design & construction (inc. hazardous areas)
- Networking, communications & telemetry
- Project management & system delivery
- PLC & SCADA programming
- Robotic systems
- Electrical maintenance & 24/7 support programs

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