

Zuikerbosch Pumping Station & Midmar Water Treatment Plant



*“There's over a billion people on this planet that don't have access to clean drinking water.”
– Michael Moore*

Since our inception AGE Technologies has stayed committed to our mission of providing Power, Energy and Control system solutions and products that enhance our customers’ diverse day to day operations. Over the years we have evolved from humble project origins into a company that can take on large, industry-altering projects, especially those that have a positive socio-economic impact.

This month, we would like to look back on two water projects that have helped to enhance water treatment and management in KZN at the Midmar Water Treatment Plant and Gauteng at Zuikerbosch Pumping Station.

Midmar Water Treatment Plant

Midmar Water Treatment Plant is located just outside Howick in KwaZulu-Natal (KZN). The plant, which draws raw sludge water from the Midmar Dam via the 251 Raw Water Pipeline, is under the management of Umgeni Water. Umgeni Water, is one of KZN’s largest public water management and sanitation entities, covering the Thukela River in the north, Umtamvuna River in the south, the Indian Ocean in the east and the Drakensberg Mountains in the West.

AGE’s project at the plant commenced in October 1996 and aimed to increase the 250 mL/day output of the plant to 375 mL/day.

The project took 14 months to complete and comprised 130 man-months in effort.

Interesting facts about the Midmar Dam:

- The dam is a Nature Reserve, and is 2 857 ha in extent.
- It is a combined gravity and earth-fill type of dam, and fed by the Umgeni River.
- The Midmar Mile, the world's largest open water swimming event, takes place in this dam every February.
- The water is primarily used for municipal and industrial purposes.
- Midmar dam is a great picnic, waterskiing and boating destination.



RAND WATER

Zuikerbosch Pumping Station

The [Zuikerbosch Pumping Station](#), located in Vereeniging is responsible for pumping 500 tot 1300 tons of dry sludge from raw water materials. A few years ago, AGE was brought onboard to do an upgrade at the station and provide all the hardware and software for the station's six pumps.

Products AGE used in the project:

- AGE included for all Schneider M340 PLC equipment, to provide for; The main PLC with one, two channel High Speed Counter card, 64 digital inputs @24VDC, 64 digital outputs @24VDC, 8 analog inputs and 4 analog outputs, 2 Altivar 71 Ethernet 2.2Kw VSDs and 2 Altivar 71 Ethernet 5.5Kw VSDs (complete with Motor Protection Units), one panel mount colour touch screen HMI, Managed Network Switch for ring topology networking, all in the main PLC panel.
- Ethernet remote Advantys IO at the six de sludge-pump panels and the two Control Stations, providing 32 digital inputs @24VDC at the Control Stations and 16 digital inputs @24VDC at each of the de-sludge pump panels.
- An Ethernet Radio link from the crane to another location (or control room) within line-of-site of the crane.
- In addition, AGE provided for all PLC, HMI and VSD software engineering work, based on complete IO lists and software Functional Design Specification documents provided to AGE.

About Zuikerbosch:

- The pumping station was developed in 1949.
- Zuikerbosch has achieved the following certifications: ISO 9001 Quality Management, ISO 14001 Environmental management, OHSHAS 18000 Safety and Health.
- 70 percent of Gauteng's drinking water is pumped through this station.
- This pumping station also supplies potable water to the North West, Free State, Mpumalanga and Limpopo regions.
- Cultural Village & Nature Reserve in Mantenga.

