



Editorial/White Paper

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Project:	Automated Water Management System	Client:	Grabouw Municipality
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Grabouw Municipality Employs Automated Water Management System

Grabouw Municipal Engineer Gert Engelbreght in conjunction with **Gerhard du Toit of V3 Bellville Cape Town** recently awarded the upgrading of the existing telemetry system to **SSE Cape Town Branch**.

Existing System

The existing system consisted of two different types of telemetry products reporting reservoir level and pump status back to a Mimic Panel in the control room at the water works.

The system was not automated and pumps still had to be switched manually.

Initially it was decided to implement a Scada System at the WTW (Water Treatment Works) and add additional reservoir and pumpstation telemetry to those stations, which still needed to be equipped with telemetry.

Upon discussing the future requirements of the system with the client and the consultant it was evident that the existing system was not suitable due to its age and lack of ability to perform remote control functions in the field.

It was identified that in order to automate the system and provide a platform for a system that would be able to accommodate the immediate and future requirements all the existing and new outstations would need to be equipped with the **SSE RTU 10**.

SSE RTU 10.

SSE RTU 10 has the unique ability to be programmed to carry out powerful PLC type instructions in the field.

In the case of the Grabouw System this meant scheduling pumps and valves based on water availability and the daily domestic demand.

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System Description

The system is broken up into sub-systems consisting of pumpstations and booster pumpstations required to maintain the level in the three main reservoirs during peak and off peak hours.

Each sub-system operates autonomously and reports alarms levels, flow rates and reservoir levels back to the **Citect Scada** resident at the WTW. This data is trended and achieved to disc for use by management to ensure that the system is operating at optimum efficiency as well as to ensure that operators have attended to alarms timorously.

Unique Features.

Due to the location of the WTW it was a concern that if the computer were removed due to theft or vandalism the system would not operate.

The unique programmability of **SSE RTU 10** provided a solution.

The Scada at the WTW was used only for alarm and reporting. All the control instructions where issued by the master station RTU 10.

The RTU 10 at the master station continually polls the Scada Computer to check that it is still connected. In the event of the computer being removed the RTU takes full control of the system as well as sending out an **SMS alarm** to duty personal advising them that the Scada Computer is no longer connected to the system.

Further to this the all levels, flow and change of state data occurring during this time is logged at the remote stations by RTU 10 and when the Scada is back up and running the Scada is refreshed. No valuable data is lost.

Telemetry, Instrumentation and Scada.

- Master Station and Telemetry Outstations – **SSE RTU 10**
- Reporting and Event Logging – **Citect version 5.41** 150 tag Scada Package.
- Flow Monitoring - **E&H** Flow Meters
- Resevior Levels- **ITS** Level Pressure Transducers

Conclusion

Since its completion the Water Management has been cost effective and the system has provided a high level of control, which previously required a large manual component.

The client is extremely happy with the decision to replace the existing systems and is panning to expand the system to its full potential in the new financial year.

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