SYSTEM OPTIMISATION & WATER DISTRIBUTION EFFICIENCY SOLUTIONS

JOAT
Water Energy Efficiency

AREA OF EXPERTISE

The natural water resources of Southern Africa will not be able to meet future demands if present growth trends in usage continue.

Efficient management of water distribution systems is required to provide accurate data on water consumption patterns and losses, and to control and reduce losses to acceptable levels.

On the other hand, worldwide water infrastructure has undoubtedly deteriorated within the last decade and this also contributes to poor water supply services. All water infrastructure has a design life and a useful remaining life and will at some point in time have to be replaced. The cost of replacement can be exorbitant and often beyond the financial means of the majority of municipalities, so any means to extend the life of an asset should be prioritised. For example, reducing the operating pressure of a reticulation network has the proven effect of reducing cyclical fatigue on pipes and joints as well as reducing pipe burst frequency.

JOAT specializes in water supply system optimisation, which includes demand, leakage and pressure management.

The company's experience and expertise supports the following key services:

- System stabilisation: ensuring that entire reticulation networks remain pressurised 100% of the time
- Condition surveys of meters and valves: GPS and condition surveys, testing and calibration of bulk and district water meters
- Datalogging: flow and pressures
- Water Audits and Water balances
- Water System Operations: Operational Personnel Training, Operations and Maintenance Plans/Manuals
- Optimal zoning of water distribution systems: review of DMA's (district metered areas) and pressure zones, including supply zone isolation checks
- Pressure Management: datalogging, evaluation of cost-to-benefit scenarios, installation of pressure reducing valves (PRV's), fixed or dynamically controlled, time- or flow-modulated
- Leakage Management: datalogging, site inspections of visible leaks, step testing of DMA's, leak detection of buried leaks using leak noise correlators and geophones
- Revenue Enhancement: consumer meter analyses, meter revenue analyses, meter audits
- Asset Management: pipeline condition surveys, including mains replacement programmes, rehabilitation and maintenance programmes
- Energy Management: energy conservation programmes, energy efficiency programmes
- Network analysis modeling: hydraulic and transient modeling using state-of-the-art software, calibrated using field data

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