SOUTH WEST WATER

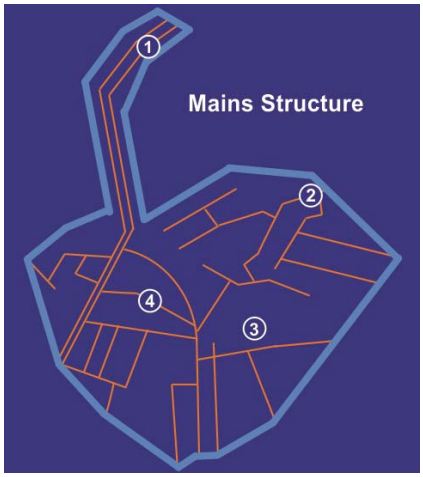
Case Study

TECHNOLOG

Advanced Pressure Management

Plymouth, United Kingdom

- ✓ Leakage and burst reduction
- ✓ Rapid return in product investment
- ✓ Improved network efficiency
- ✓ Reduction in operating costs
- ✓ Easy to implement



Project Overview

Mannamead is one mile north-east of Plymouth City Centre and comprises 1,532 domestic properties, with an increasing student population. The network has 9.2 km of largely pre-War, cast-iron mains, and receives its supply from Bellivere Reservoir via a 100 mm Cla-Val pressure reducing valve. The average night flow of 26 m3/hr indicates high leakage.

Monitoring at the critical node revealed a 20 m pressure drop at peak demand, whilst pressures in the lowest parts of the district were as high as 51 m. The system showed a night-to-day swing of 47 m to 19 m, giving scope for 28 m of modulated pressure reduction. Two large consumers were identified, one drawing water on a continuous basis at low flow rates and one drawing water via a fast operating electric valve.

Key Elements

- Boundary valves inspected and confirmed closed
- Installation of data loggers at six strategic points within the district
- Critical node monitoring
- Initial investigations by the leakage team to identify large consumers
- Detailed monitoring of large consumers
- Installation of Technolog's pressure controller to modulate pressure in line with flow

Key Outcomes

- **Night flow reduced by 15 m3/hour,** representing a net night flow of 4.8 litres/property/hour
- **Excess pressure removed at the critical node** and at intermediate monitoring points
- **Water savings of 188 m3/day** achieved through the use of advanced pressure control
- **Savings** represent a marginal cost saving of **over £3,000 per year**
- Over 50% of the savings were achieved between midnight and 7 am

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