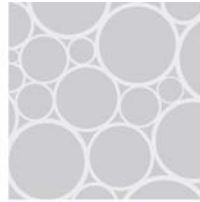




ENVIRONMENTAL



FLOOD RISK



DRAINAGE



ECOLOGY

Florence Road Flood Alleviation

Donaldson Associates and Wessex Water, 2008

Project aims

A flood alleviation scheme involving the construction of a tunnel storage system was implemented in this DG5 location in Poole, Dorset.

Following the outline design of the scheme by Wessex Water, Clear undertook detailed hydraulic modelling as the design progressed to detailed design stage and then throughout construction to ensure scheme viability, as the abundant services and traffic management encountered in this traffic sensitive site led to numerous late design modifications.

The key aspects of this study involved InfoWorks detailed model refinement, critical duration analysis, storage return pump controls, siltation analysis, tank spill frequency analysis and assessment of the performance of critical assets in the downstream system.

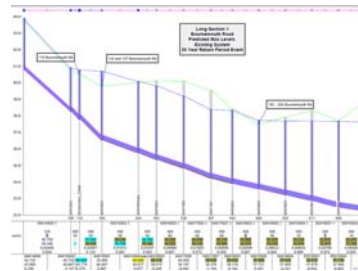
Project summary

The flooding is affected by a small part of the Poole catchment, though in order to assess the performance of the downstream

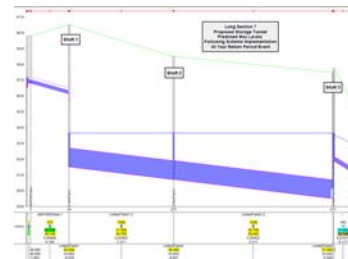


system an analysis of the full catchment model (provided by Wessex Water) was required.

The validity of the existing model was confirmed through a process of model audit and discussion with the original model builders. Further survey details were added to the



model to update it for detailed design purposes, particularly in the DG5 locations. The performance of the outline scheme was checked against the original design criteria. During the design and construction the main tunnel shafts were relocated due to land purchase issues and the traffic management requirements of the highways authority and the relief overflow structures redesigned accordingly.



The set up of the storage return pumps was assessed using Real Time Control (RTC) to achieve the optimum pumping rate, to maximise available storage in the tank during storm events whilst maintaining low levels in the receiving sewer.

A tank usage frequency analysis was undertaken to assess the annual duration in which the flows in the

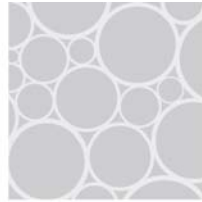




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tank fell below self-cleansing velocities, to allow an assessment of cleansing frequency.

