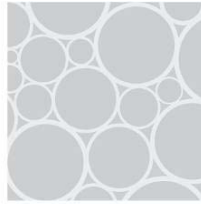




ENVIRONMENTAL



FLOOD RISK



DRAINAGE



ECOLOGY

Connecting Derby FRA

Derby City Council



Project Aims

Clear was employed by Derby City Council to undertake a detailed flood risk assessment for the Connecting Derby Inner Ring Road Scheme. In the absence of EA data, the aim was to construct a river hydraulic model of the watercourse system to determine the 1 in 100 year and 1 in 100 year +20% flood envelopes and to assess the potential impact of the highway development.

The key aspects of this study included the construction of an InfoWorks RS river model, liaison with EA and DCC, site surveys, flood risk assessment and drainage impact assessment.

Project Summary

The urban drainage system within Derby is highly complex and includes a number of interactions between the watercourse systems, which are significantly culverted, and the combined sewerage system. An InfoWorks RS river model was constructed that included the Markeaton Brook, Bramble Brook and Littleover Brook to their confluence with the Mill Fleam and the River Derwent.

The model included open channel and culverted sections of watercourses plus inflows from the combined sewer network.

The model was calibrated against historical flooding records and was used to predict flood extents and flood depths for the 1 in 100 year and 1 in 100 year +20% events. The study demonstrated that the Inner Ring Road scheme would not create and detrimental impacts on fluvial flood risk.

In addition, the study showed that the scheme would create a net increase in impermeable area of over 3,000m². As there were existing sewer capacity issues in the vicinity of the scheme, surface water drainage proposals were developed to provide attenuation that would mitigate the increased drained area and would also provide betterment to the sewerage system.

