

# Combined solution: the structures of the A120 Little Hadham bypass and flood alleviation scheme

C. Jackson, G. Ledsham-James, F Aparicio-Baneres

Arup, Solihull, UK

Contact: [chris.jackson@Arup.com](mailto:chris.jackson@Arup.com)

## Abstract

The village of Little Hadham in the UK has suffered from heavy traffic, air pollution and flooding over many years. The village also creates a major bottleneck to traffic flows on the main A120 road through the region, a major east west route crucial for the prosperity of the East of England.

These multiple issues are being resolved through the construction of a combined bypass and flood alleviation scheme. By combining the resources and requirements of the highway and environmental authorities the scheme provides a sustainable and cost-effective solution to these issues with highway embankments and bridges also acting as flood alleviation dams and spillway structures. These combined benefits ensured the commercial viability of the scheme.

This paper gives an overview of the structures and design challenges faced and how the requirements of the two functions have been combined into a single solution that ensures the future of Little Hadham and promotes growth in the region as a whole.

**Keywords:** Bridge Engineering, Flood Alleviation, Highways,

## 1 Introduction

The Little Hadham Bypass and Flood Alleviation Scheme solves the dual problems of traffic congestion and flooding with a single scheme. The scheme is being delivered by Hertfordshire County Council (HCC) in collaboration with England's Environment Agency (EA).

This paper presents an overview of the design of the structures on the scheme, including the unique challenges presented by combining the requirements of structural and dam engineering.

## 2 The Problem

A120 is a major road in the UK. The road runs east to west, largely along the route of a former Roman

road, through the counties of Hertfordshire and Essex.

The west end of the route consists of a single carriageway road between the A10 north-south route and the town of Bishops Stortford. This section of the route passes through the village of Little Hadham.

The historic nature of Little Hadham means that traffic is forced through a narrow point that is only passable in one direction at a time. At this location traffic is controlled by traffic lights that were introduced following a fatal accident in the 1970s. This situation results in a major traffic bottleneck and has a significant negative impact on the village and its residents.

A bypass of Little Hadham was much needed to improve the environment within the village and to