

A138 Chelmer Viaduct, Essex

Versatile viaduct alleviates congestion

£32m

/ Project value

January 2015

/ The build commenced

December 2016

/ The build was completed

The award-winning A138 Chelmer Viaduct is a strategic highway link in Chelmsford, Essex, which has increased transport capacity and significantly improved journeys for motorists, cyclists and pedestrians. Consisting of 1,800 tonnes of steel, 900m in length, and taking 13 months to complete, the transformed viaduct incorporates three lanes of carriageway, a shared footway and cycleway and a new footpath over the river. Underlining our expertise and efficiency, the main project road was opened 15 weeks ahead of schedule.

The Brief

The £32 million major highways/bridge construction project was financed to creatively resolve congestion problems emerging from the original infrastructure's inability to safely meet the demands of 28,000 vehicles per day. The two-lane aging viaduct, dating back to the 1930s, was subsequently demolished upon completion of a new, fit-for-purpose three-lane structure.



"I am delighted that we have delivered this much needed new bridge with an extra lane, which will help cut journey times for hard working people in Chelmsford and deliver economic growth,"

Andrew Jones
Roads Minister

“What we have achieved is at the very top end of my expectations and couldn’t have been achieved without the support of staff from GRAHAM. Their expertise really helped us hit the important milestones,”

Scott Downes

Team Leader from Writtle College (part of a project team working from Moulsham Mill, a community hub established as part of the wider project)

The challenges

We identified that the original 2007 design, and its subsequent postponement to 2014, necessitated considerable revision ahead of project commencement in 2015. Showcasing technical excellence, we worked collaboratively with Highways England to flag areas of concern and to ensure no major deviation from the programme’s proposed timeline. As a result, an EW, CE & Design Change Register was developed, and maintained, to manage change control. Additionally, we implemented a robust consultation process, absent from the original design phase, leading to positive engagement, a LEAN construction methodology and a piled structure.

GRAHAM’s solution

The A138 Chelmer Viaduct project, spanning the River Chelmer and flood plain, incorporated the construction of a new viaduct and the subsequent demolition of the existing structure. To minimise disruption, the original bridge continued to facilitate traffic during the 13-month project, which encompassed 402, 535 ‘man-hours’. The vital transport link was highly commended by the ICE for ‘Technical Excellence’ with the viaduct structure consisting of weathering steel and concrete deck elliptical columns. The river bridge features weathering steel beams, a concrete arch and engraved stone inlay to improve aesthetics. Landscaping/planting was used to screen parts of the viaduct while the careful maintenance and restoration of wildlife habitats was prominent during construction. A commitment to community engagement featured the establishment of a neutral community hub at Moulsham Mill.

Outputs & Benefits

- / **Award Recognition:** ICE East of England Awards 2016 – Merit (Physical Achievement), Highly Commended (Technical Excellence and Innovation)
- / **Safety First:** 402, 535 ‘man-hours’ with no RIDDORS
- / **Programme Management:** Project road opened 15 weeks early
- / **Innovative Solutions:** Revised deck drainage design for constructability improvements and defect reduction



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