



Project information

VolkerLaser carried out comprehensive repairs and refurbishment to the busy A13 Pitsea Flyover as part of the Birse Civils' South East Structures Framework team for Essex County Council.

Client

Birse Civils Ltd

Consultant

Mott MacDonald

Contract Value

£2.3 million

Completion

June 2009

As established specialists and pro-active members of the design and build team, VolkerLaser were involved at the Early Contractor Involvement (ECI) stage, bringing our expertise to this key period of design and development. The flyover required extensive work, including the removal of defective concrete by hydro-demolition, concrete repairs, a cathodic protection system and waterproofing to

internal voids in the crosshead beams. As a very busy section of the A13, it was particularly important to arrive at a solution that allowed efficient methods of working with long lasting results to minimise costs and avoid disruption to road users.

VolkerLaser were heavily involved at the early stages of the contract, investigating methods of injection of expansive polyurethane foam into the box beam void to prevent ingress of water from the leaking deck joints. This method was employed with great success.

The main refurbishment and strengthening consisted of phased concrete repairs and application of a cathodic protection system which would provide a further 50 year extension to

the design life. The repairs were broken out using hydro-demolition followed by reinforcement replacement by welding and reinstated using a spray concrete method. The ICCP system was installed on a design build basis using a titanium mesh application with spray concrete overlay. A power and control infrastructure was installed by VolkerLaser to the entire structure with expansion capability for future phases.

Poured concrete was initially specified for the repair works but the VolkerLaser team investigated the use of sprayed concrete in lieu and presented it as a more time and cost-effective solution. Accepted by the client and used in conjunction with the cathodic protection system, a programme reduction of almost 50% was achieved.