Case Study—56m x 3m Warren Truss Railway Bridge, Tamworth

Client: Bellway Homes / Amey

Location: Anker Valley, Tamworth

Length: 56.0m

Width: 3.0m

Form: Cambered Warren Truss with overhead bracing

Project Description

This bridge provided a crucial infrastructure link to a Bellway homes site in Tamworth. Without the bridge the housebuilder was unable to release his properties for sale and CTS were approached when a particularly fast-track service was needed.

CTS carried out the design in-house using our experience of similar structures to create a bridge some 60% lighter than the consultant's scheme design that we had first been presented with. This benefitted both the build time and the project cost.

A Tuned-Mass-Damper (TMD) is used under the deck at the mid-span of the bridge. This limits vibrations and provides pedestrian comfort in the long span structure. TMDs for bridges are typically prohibitively expensive and are fabricated outside the UK – by bringing the TMD detail design and fabrication in-house we were able to make this technology affordable and deliverable within the project timescale.

The bridge crosses a Network Rail line and was subject to a Category III design procedure; CTS' Chartered Engineers worked closely with 3rd party checkers Amey, the Technical Approval Authority at Staffordshire County Council and Client Bellway to ensure a smooth approval process appropriate to the fast-paced nature of the project.

Installation was planned and carried out by CTS during a night time rail closure using one of the largest cranes in Europe.

Happy homebuyers moved in on time - just days after the bridge completion.

Top Photograph: Footbridge over Railway

Second Photograph: Trial assembly at CTS factory

Third Photograph: Site welding

Fourth Photograph: View through the bridge