

# BIM Level 2 for Bridge over the Mersey

OSBORNE

*"I am looking forward to the collaborative delivery of the Stockport Interchange Bridge by Osborne and Stockport Council which will be the first Level 2 BIM Bridge project in Stockport"*

Alex Bremner, Design & Improvement Manager for Stockport Council

## PROJECT

Stockport Interchange Mersey Bridge

## CUSTOMER

Stockport Metropolitan Borough Council

## CONTRACT

Design and Build

# Issue

Could BIM Level 2 workflows assist in the design, construction and maintenance of a new road bridge over the River Mersey at Stockport? Of course the answer is yes, particularly where the bridge design requires passive provision for near future 'metro-link' enhancements.

But what is the best way for a local authority, new to Building Information Modelling (BIM), to procure a Level 2 BIM scheme?

# Solution

Stockport Metropolitan Borough Council (SMBC) recognised that the development of BIM level 2 workflows on their capital investment schemes was essential. Not only for compliance with central government mandate but critically to deliver efficiency savings at each stage of the asset's life.

Their procurement strategy was structured to reflect their BIM journey providing flexibility in the development and agreement of the BIM deliverables to meet the whole life needs.

During tender Osborne, supported by our design partner AECOM, demonstrated the

collaborative culture and specialist knowledge to deliver Stockport's ambitions.

With no Employers Information Requirements (EIR) in place, early workshops have guided development. Collaborative agreement of the Execution Plan has taken into account SMBC's specific data needs. Inclusion of interoperability with SMBC's Pontis asset management database and the requirements of the County Surveyors Society's Bridge Performance Indicators were key considerations. All parties are now focussed on common targets.

Implementation of a CDE (Common Data Environment) shares information between key parties, in real time, to accelerate decision making.

Traditional engineering deliverables such as 2D drawings and schedules are now produced as outputs of the 3D bridge model using Autodesk Revit and Tekla Structures. These 3D models are uploaded directly to Osborne's CDE where they are merged into a federated model using BIM Glue.

Using Autodesk Navisworks to access the CDE these 3D models can be interrogated during the pre-construction phase to better understand the construction details, identify hazards, commercial risks and develop an efficient methodology and programme. The

visual clarity has assisted with customer and architect agreement on the aesthetic design of the parapets and their connections.

Moving into the construction phase, the application of Autodesk BIM 360 Field will allow slick assimilation of quality record data. Specifications, photographs, check sheets and supplier data information can be simply adhered electronically to the model. The final 3D as-built model and associated CoBie database will be transferred to SMBC to inform maintenance and future enhancements.

Over the 120 year design life of the bridge this rich data model will generate significant savings for SMBC particularly if the metro tram link becomes a reality.

# Outcomes

Stockport's collaborative BIM journey with Osborne has unlocked the potential for the new Mersey crossing and future schemes.

Shared learning and knowledge exchange provides greater understanding of BIM implementation and the quantifiable benefits it can bring to infrastructure enhancements.

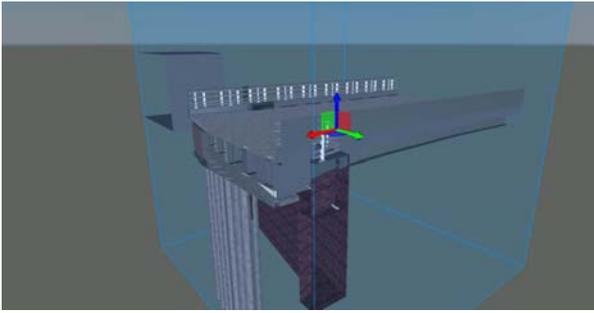


Figure 1 - Parapet Structural Connection Detail