



Category: Best Use of Innovation to Build Resilience

MHA+ member name

Staffordshire County Council

Supporting organisation(s)

Amey Transport Infrastructure

Other partners involved in the development of this product/project/nomination

CLM and Network Rail

Summary

A routine inspection raised concerns which led to further work establishing that the Victorian brick arch road-over railway bridge was unstable. Both client and stakeholder consultation deemed the optimal solution involved strengthening the existing structure over the live railway, whilst maintaining essential utility connectivity to the community. Accelerated planning, design, and approvals enabled close collaboration between client, designers, Network Rail, and contractors to deliver a practical strengthening solution for a complex, skewed masonry arch. LiDAR surveys and photogrammetry provided accurate data for advanced 3D nonlinear modelling, capturing structural behaviour and temporary works requirements. A multidisciplinary team developed a safe methodology, using fibre-reinforced concrete to construct a saddle over the live railway without arch propping. Sequenced excavation and balanced pours minimised movement, supported by continuous monitoring against defined thresholds. The scheme preserved asset, reduced embodied carbon and maintenance needs, and was delivered efficiently with minimal disruption to users and stakeholders.