

# Rail Engineering Capability

BSP Consulting has extensive experience delivering civil and structural engineering services across the UK rail sector, supporting both Network Rail and principal contractors on new-build, refurbishment, and heritage-sensitive projects. Our portfolio spans operational stations, maintenance depots, transport interchanges, listed structures, and complex regeneration schemes—often undertaken within live rail environments and heavily constrained city-centre locations.

We specialise in robust structural assessment, sensitive heritage refurbishment, complex temporary works, foundation design, drainage and SuDS, and the integration of modern building systems within historic railway infrastructure. Our engineers are experienced in working to Network Rail standards, national rail design guidance and local authority requirements, ensuring full compliance and seamless coordination with wider project teams.

Whether delivering full multidisciplinary engineering for new operational facilities or enabling the restoration of heritage station buildings, BSP provides pragmatic, buildable solutions that prioritise safety, performance, and long-term durability while minimising disruption to rail operations.

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Not only did the alternative method proposed mean the existing timbers could remain, it was also more cost effective and time efficient.

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## Network Rail Maintenance Depot, Derby

BSP Consulting provided full civil and structural engineering services for Network Rail's new three-storey Maintenance Depot headquarters at Mercia House, Derby. The development delivers modern office, welfare and storage facilities, including a gym, showers, locker rooms and rest areas, and was designed in accordance with Network Rail standards, Environment Agency requirements and local authority guidance. Our scope included steel frame design, pile and ground beam foundations, SuDS drainage design, and the layout and design of the site access and car parking areas. The project was delivered to BIM Level 2 and completed on time, under budget, and to the full satisfaction of Network Rail.

**Client** Network Rail



## Paragon Interchange Roof Refurbishment, Hull

BSP Consulting was appointed to advise on the repair and refurbishment of the historic, Grade II listed roof at Hull's Paragon Interchange. The early-20th-century structure comprises a five-span arched platform roof formed from tongue-and-groove timber boards supported on barrel-vaulted cast-iron frames. Working sensitively within the constraints of the listed structure, BSP developed a repair strategy that allowed the majority of the existing—often deteriorated—timbers to remain in place. The proposed over-cladding solution provided long-term protection while avoiding the need for intrusive strengthening works to the original cast-iron framework, preserving both heritage value and operational continuity.

**Client** Miller Construction now Galliford Try



## Wakefield Kirkgate, Railway Station Refurbishment

Wakefield Kirkgate Train Station in West Yorkshire was home to several derelict buildings, including a long neglected Grade II listed station building and its external spaces. BSP provided engineering support for the transformation of several derelict Victorian station buildings into modern office, retail, and start-up spaces as part of a major regeneration scheme led by Groundwork Trust and Seed Architects. BSP provided civil and structural engineering services and construction support to Miller Construction. The restored station now serves as a thriving community hub, with usage exceeding 507,000 entries/exits in 2022–23, showcasing successful heritage preservation combined with modern functionality.

**Client** Miller Construction now Galliford Try



## Sheffield Railway Station, Historic Building Refurbishment

BSP Consulting supported Miller Construction in refurbishing Sheffield Station, the busiest station in South Yorkshire. The project required sensitive structural and civil engineering input to upgrade the Victorian buildings while maintaining operational continuity. BSP completed detailed visual and intrusive surveys; assessed condition, defects, and structural integrity; reviewed historic drawings and previous records. Developed refurbishment and remodelling solutions; produced drawings, calculations, and specifications; integrated new structural elements with the existing heritage fabric; coordinated with architects and MEP teams. We also provided civil engineering design services.

**Client** Miller Construction now Galliford Try

