

# BUILT HERITAGE ON HS2 PHASE 1 NORTH: quantifying, managing, monitoring, mitigating, innovating

Tom Wilson, working on behalf of WSP (DJV) for LMJV

**WSP** are the lead heritage consultants for HS2 Phase One Area North, working with LMJV on behalf of HS2. As part of our role we review, design and enact the programme of works for built heritage assets potentially impacted by HS2.



*Grade 2 listed plunge bath at Manor Farm, Streechay, 18th century (monitored for cracking and water level drop). Credit: WSP; © HS2 Ltd*



*Scheduled and Grade 2\* listed Stare Bridge, Stoneleigh Abbey, 15th century (monitored for cracking) Credit: WSP; © HS2 Ltd*

For a built heritage consultant, a qualification in building conservation offers a different philosophical background to archaeological theory and provides a deeper understanding of context, significance and setting, as well as practical knowledge of buildings and materials. Experience is also key for a project on the scale of HS2. Having a diverse skillset, developed through multiple roles as curatorial and contract archaeologists and built heritage specialists, provides a better understanding of the lifecycle of large projects. Successful delivery also requires skills in project planning, engagement with stakeholders and other specialists, and understanding of the obligations that different parties hold.

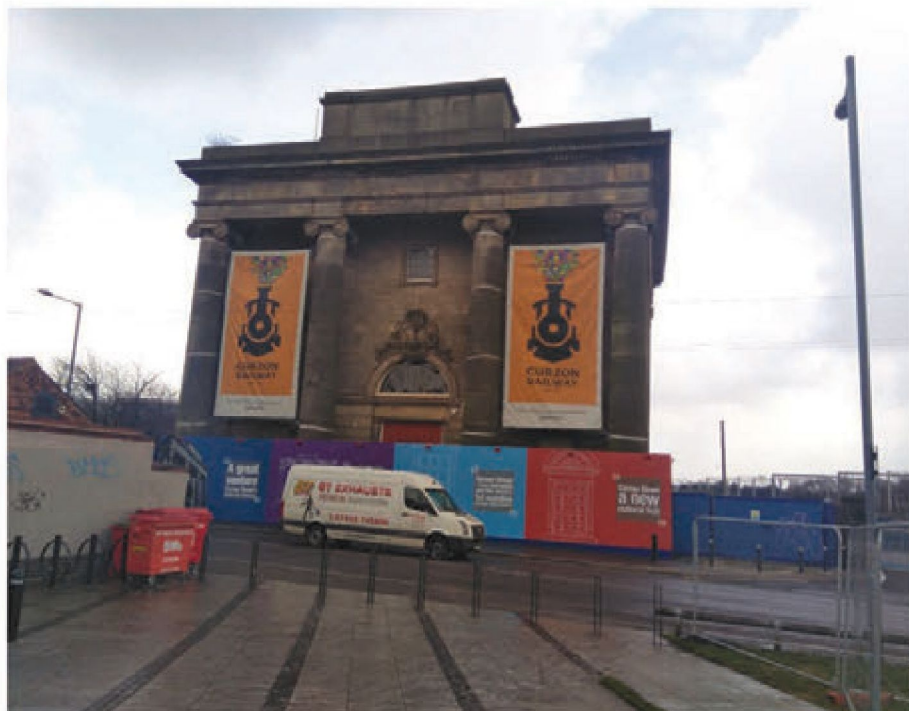
## Baseline – what kind of buildings are we dealing with?

Phase One Area North crosses Warwickshire, Birmingham and Staffordshire. The Environmental Statement (ES) identified 628 built heritage assets, of which 28 would be physically harmed and 212 would experience harmful changes to their settings. These assets range in size from single structures, for example a listed 18th-century plunge bath, to conservation areas incorporating parts of villages, or suburbs like the Jewellery Quarter in Birmingham.

Area North is largely rural, with built heritage comprising post-medieval and modern farmhouses, agricultural buildings and gentry houses, although a few much-altered possible late medieval houses and a scheduled 15th-century bridge at Stoneleigh Abbey are also present. The landscape becomes urban and industrial as the route travels into Birmingham, with railways and canals well represented. The most famous site may be Old Curzon Street Station's iconic Principal Building, but other buildings and manufactories that served as important parts of the canal and railway network are distributed along the Birmingham Spur, including the former Carriage and Wagon Company works at Washwood Heath.

## Quantifying and managing the work

The ES identified baseline conditions and outlined how HS2 would mitigate harm in general terms, supported by the research framework. WSP reviewed the baseline conditions against HS2 design (including an audit of design alterations since the HS2 Phase One Act passed) and considered where mitigation measures were warranted and would further HS2's research aims. This involved an across-the-board review of the original land-take, reassessing all of the buildings and structures that



Grade 1 listed London and Birmingham Railway terminus Principal Building, Old Curzon St, 1838 (monitored for movement and cracking; influencing the design of the new station). Credit: Stonebow Heritage; © HS2 Ltd

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Midland Railway Carriage and Wagon Company works at Washwood Heath, c 1910 (recorded before demolition). Credit: Stonebow Heritage; © HS2 Ltd

would be demolished or altered, or that might receive noise abatement mitigation (such as secondary glazing).

The review identified seven additional heritage assets. One example is a row of 'estate cottage' style 1930s houses built for municipal workers at a sewage purification works near Water Orton, which contribute to a research aim to investigate the role of interwar social housing. Another example is identification of original buildings associated with the extensive Carriage and Wagon Company works at Washwood Heath, a site associated with the early development of the railways and production of First World War munitions. Little research has been undertaken for the carriage works, so recording of the original buildings was planned, managed and completed, with building material and fittings considered for architectural salvage prior to demolition.

### Working together, for agreement and good design

One of the critical responsibilities on such a large project is to identify key professionals and stakeholders and maintain regular communication to ensure that all are involved in our emerging plans for mitigation. With so many individuals involved, it was also important to develop a system for recording and tracking those interactions.

HS2's consents process differs from the normal planning process. Demolitions and alterations to non-designated built heritage are already consented by Act of Parliament although engagement and consultation with stakeholders is required to record and consider their views on approaches to mitigation. For designated built heritage Schedule 18 of the HS2 Act names specific assets that are

exempt from Listed Building Consent. Instead, Heritage Agreements were made with local authorities, requiring work to be completed according to method statements agreed by Local Authorities.

Collaboration with engineers, designers and specialists from a range of disciplines is vital. This included being part of the design team that developed the consents applications for the new HS2 terminus at Curzon Street. This complex site is the location of Birmingham's first two railway stations (including recently discovered remains of the world's first engine roundhouse) and includes the Grade I listed Curzon Street Station Principal Building. Having built heritage professionals included as a core part of the design team made it possible to explain and discuss how the new Curzon Street Station could celebrate in the public realm the earlier stations, and the people who lived, worked and were buried in the area around it.

### Hazards, not just harm

A considerable amount of our work has been devoted not to mitigating harm, but to managing potential hazards to designated assets that could cause physical harm,

including the effects of vibration, such as crack widening, settlement or other damage during construction or operation of HS2.

Understanding conservation principles, knowledge of historic fabrics and the desired outcomes of monitoring are key to successful monitoring strategy design. WSP's conservation engineers produced monitoring specifications, including ways to fix instruments to designated assets that would cause minimal and reversible damage to the least significant fabric, prevent water ingress, avoid permanent marks and avoid visual intrusion.

### Setting as research

HS2 has taken an innovative stance by identifying setting-related harm as at least in part a loss of evidential value that should therefore be mitigated through research, and have produced a *Technical Standard for Setting Recording* that follows a similar model to Historic England's *Understanding Historic Buildings: A Guide to Good Recording Practice*. WSP have expanded on HS2's approach to setting research, to record the changing landscapes of fields, farms, industry and transport that HS2 crosses, and produce an understanding of how the settings of the buildings within them have developed.

*Birmingham Tame and Rea District Drainage Board cottages, 1930s (recorded before demolition). Credit: Stonebow Heritage; © HS2 Ltd*



### Tom Wilson

Tom is a consultant for Stonebow Heritage. He has worked on EIA and delivery of HS2 in various roles, prior to which he was Network Rail's heritage advisor for Crossrail. Tom started as a digger in the 1990s, before moving into project management and then consultancy, increasingly involving historic buildings. This brought new challenges, not least learning to apply conservation principles to design work, and a lot of work on settings. Linear infrastructure has been central to his career (roads, pipelines, renewables and railways), but he has been lucky enough to also be asked to undertake some more unusual work, including some freelancing for Historic England, some lecturing, and a couple of projects overseas. As well as being built heritage technical lead for HS2 Area North, Tom is heritage advisor to the Environment Agency, and still carries out a few smaller assessments and historic building surveys.



*Grade 2\* listed Park Farmhouse, Bickenhill, late 18th/19th century (monitored for movement and settlement). Credit: WSP; © HS2 Ltd*