

The Impact of Electrification on the Historic Environment - TransPennine Route Upgrade (TRU) Case Study

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 AtkinsRéalis

The TransPennine Route Upgrade (TRU)



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The TransPennine Route Upgrade (TRU)



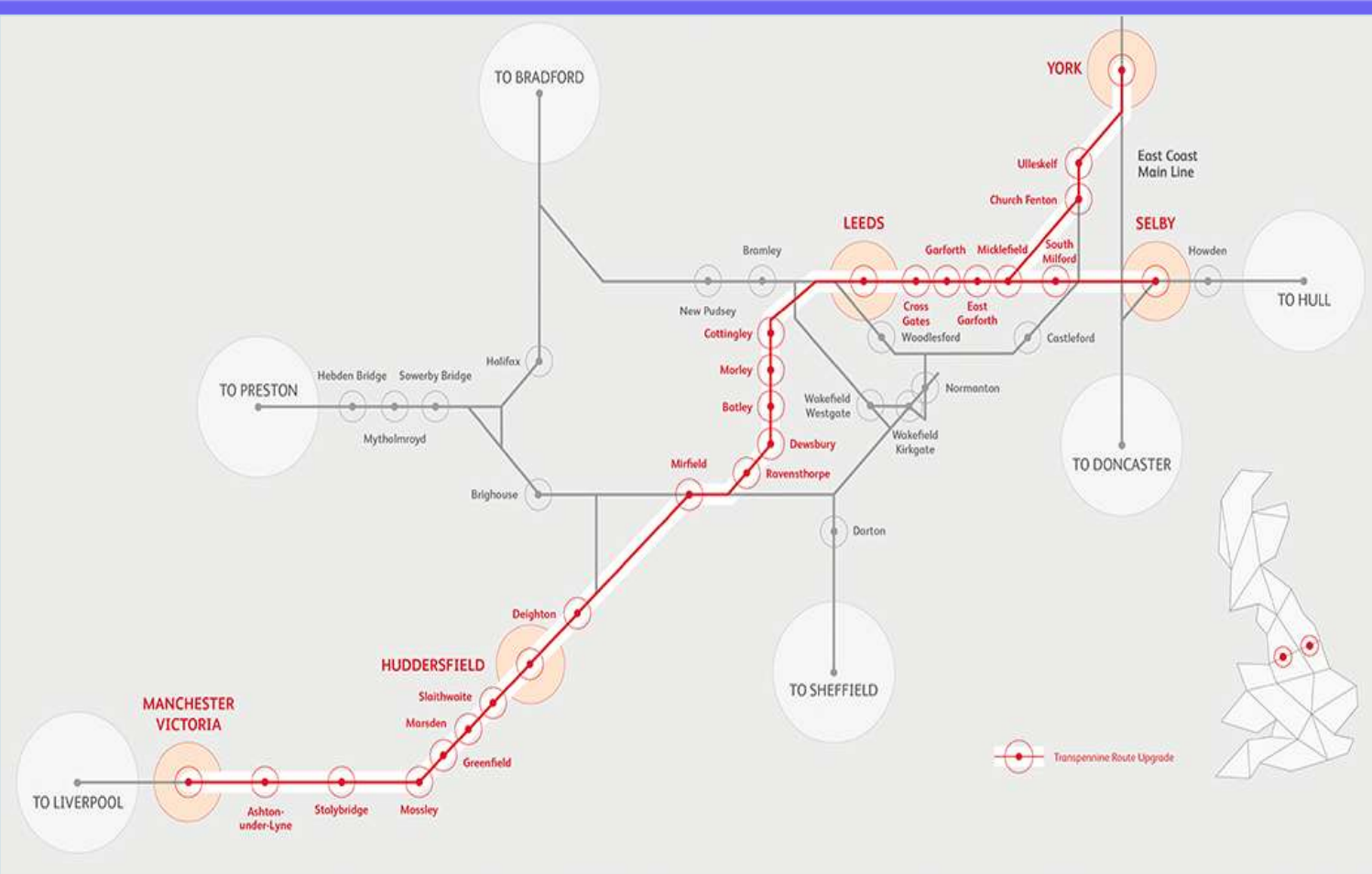
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OVERVIEW OF THE PROJECT & HISTORY OF THE ROUTE

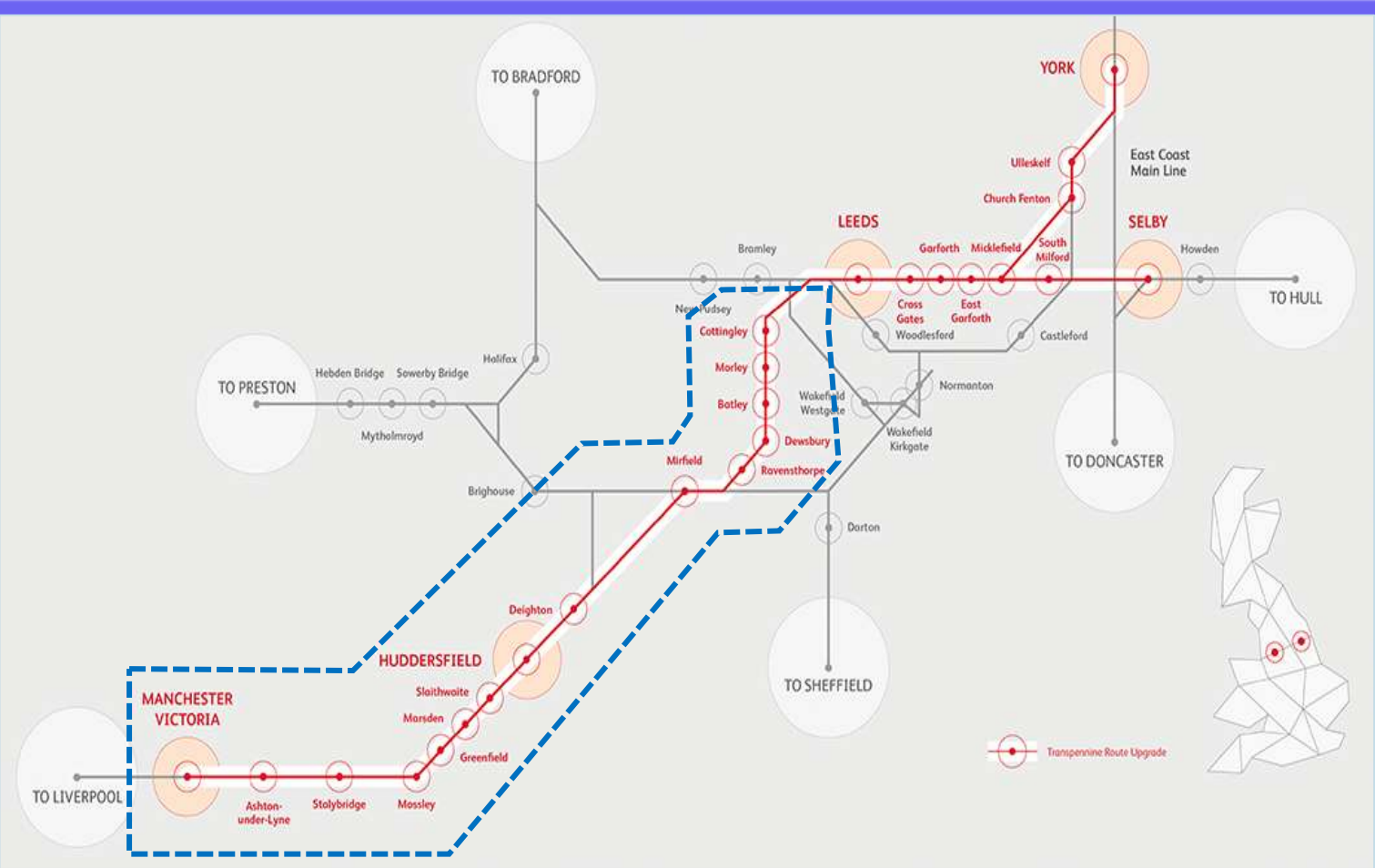
THE TRANSPENNINE ROUTE UPGRADE (TRU)



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TRU West (WoL)



Brief History of the Route

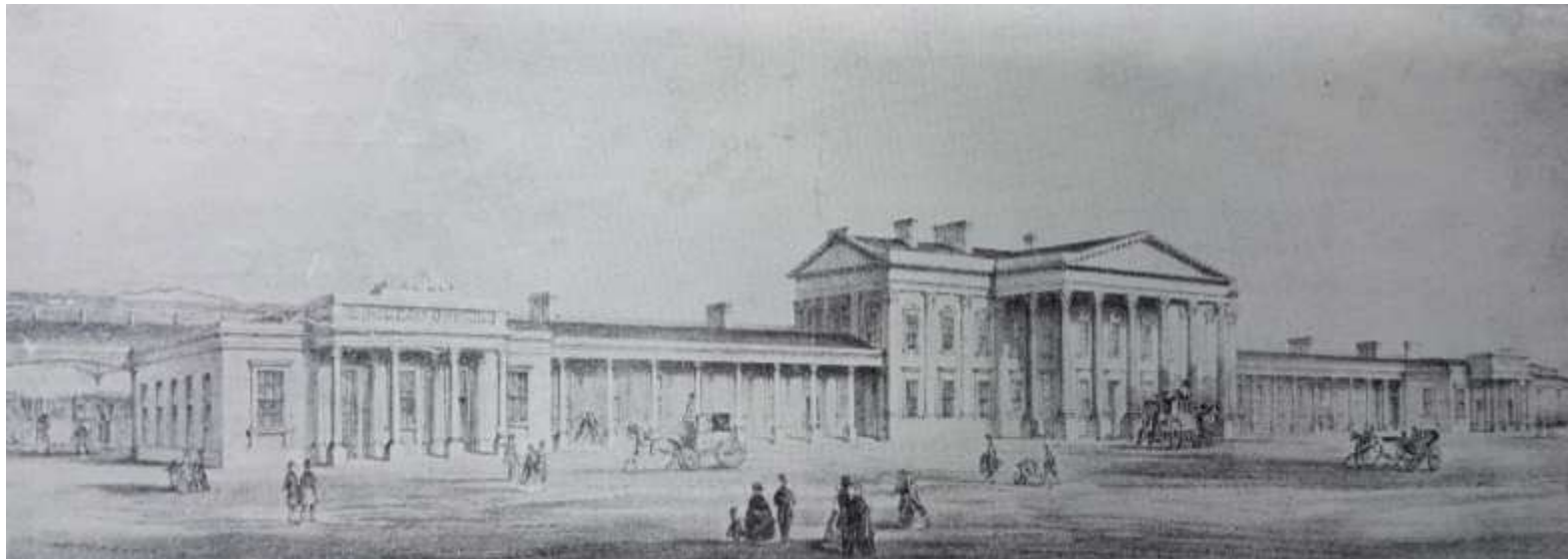
- Constructed and opened between 1836 -1849
- It is made up of multiple route sections following the 'railway mania' of the mid 1840s:
 - The Manchester & Leeds Railway, constructed 1836-39, between Ravensthorpe and Heaton Lodge;
 - The Leeds, Dewsbury & Manchester Railway, constructed 1845-47, between Westtown (Dewsbury) and Ravensthorpe; and
 - The Manchester & Huddersfield Railway, constructed 1846-49, between Heaton Lodge and Huddersfield
- The railway brought industrial growth, place-making and expansion: Huddersfield, Dewsbury
- Notable large-scale engineering challenges with new structures – Huddersfield Viaduct, Mirfield Viaduct, Huddersfield Station
- Notable engineers and architects : Alfred Stanistreet Jee; George Stephenson; James Pigott Pritchett



A.S. Jee: *Saddleworth Historical Society*



Portrait of George Stephenson (1781-1848): *Network Rail*



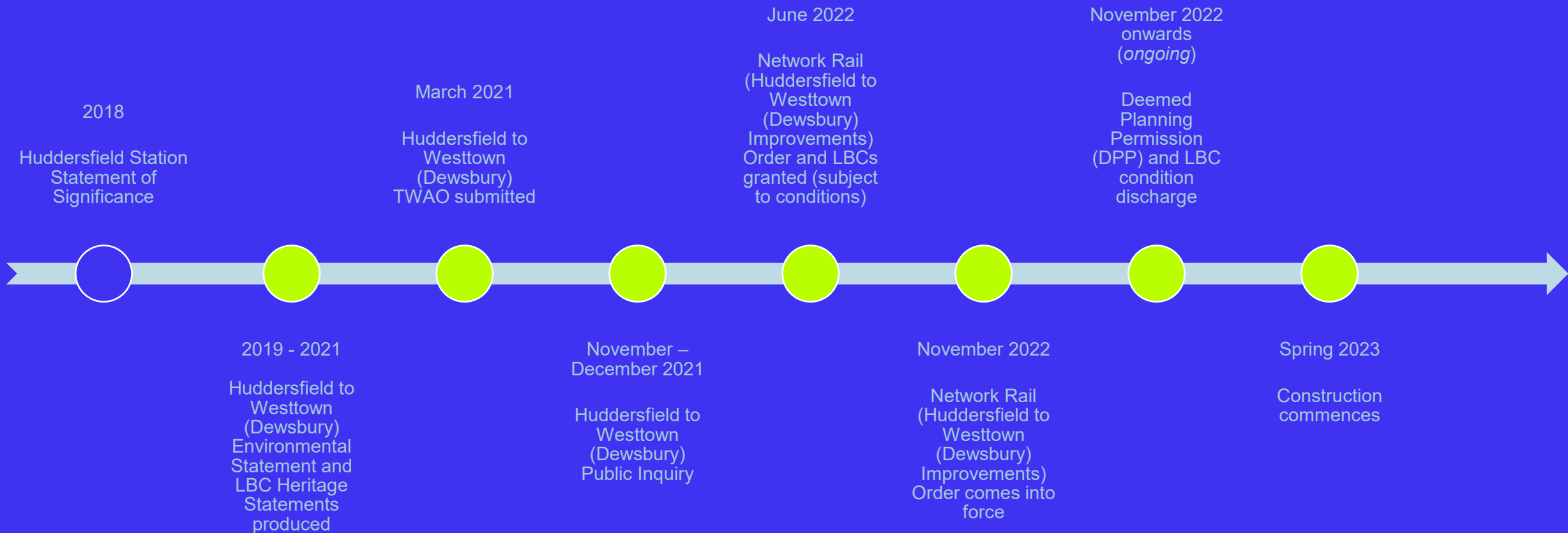
Huddersfield Station – Artistic Impression: *National Archives ZPER 14/11*



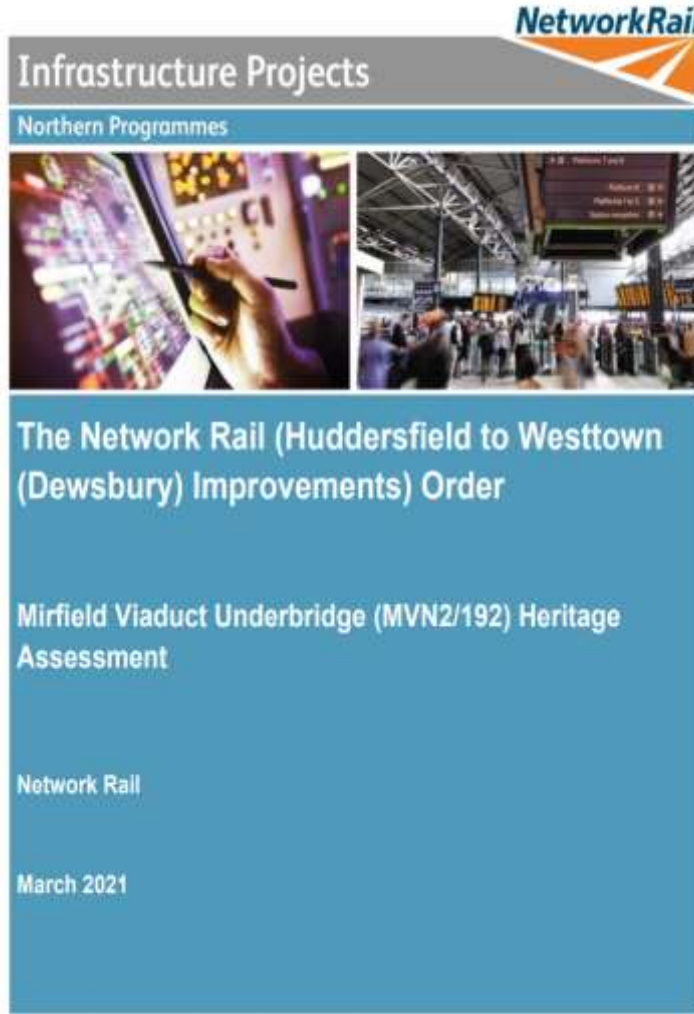
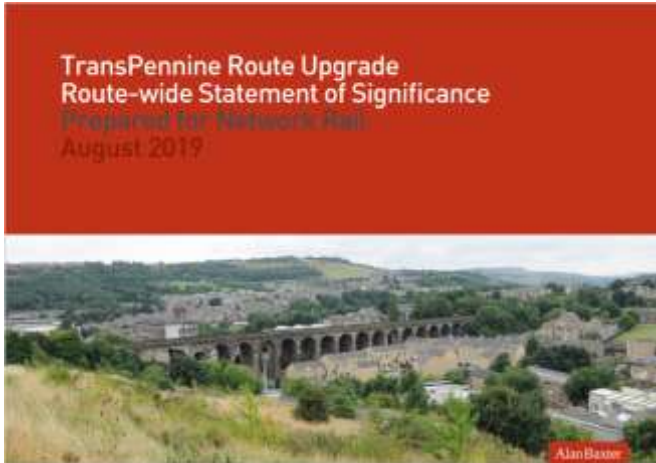
James Pigott Pritchett: *Yorkshire's Architect*

LEGAL REQUIREMENTS & PROCESS

The TransPennine Route Upgrade (TRU) – Huddersfield to Westtown (Dewsbury)



LEGAL FRAMEWORK



- The Planning (Listed Buildings and Conservation Areas) Act 1990 (as amended):
 - Under the Act, no one is permitted to undertake or cause to be undertaken any works that would affect the character of a listed building unless the works are authorised.
- National Planning Policy Framework (NPPF, 2012, updated): Section 16 'Conserving and Enhancing the Historic Environment' – this provide the policy tests alongside local planning policies as to the assessment of harm to a listed building
- Transport and Works Act (1992): listed building consent applications called in as part of the TWA0.
- Statement of Significance, Route-wide Statement of Significance, Heritage Assessments, Environmental Statements

OLE DESIGN OPTIONEERING – HERITAGE STRUCTURES

OLE through stations – Huddersfield

Huddersfield Station Grade I Listed, 1845-50

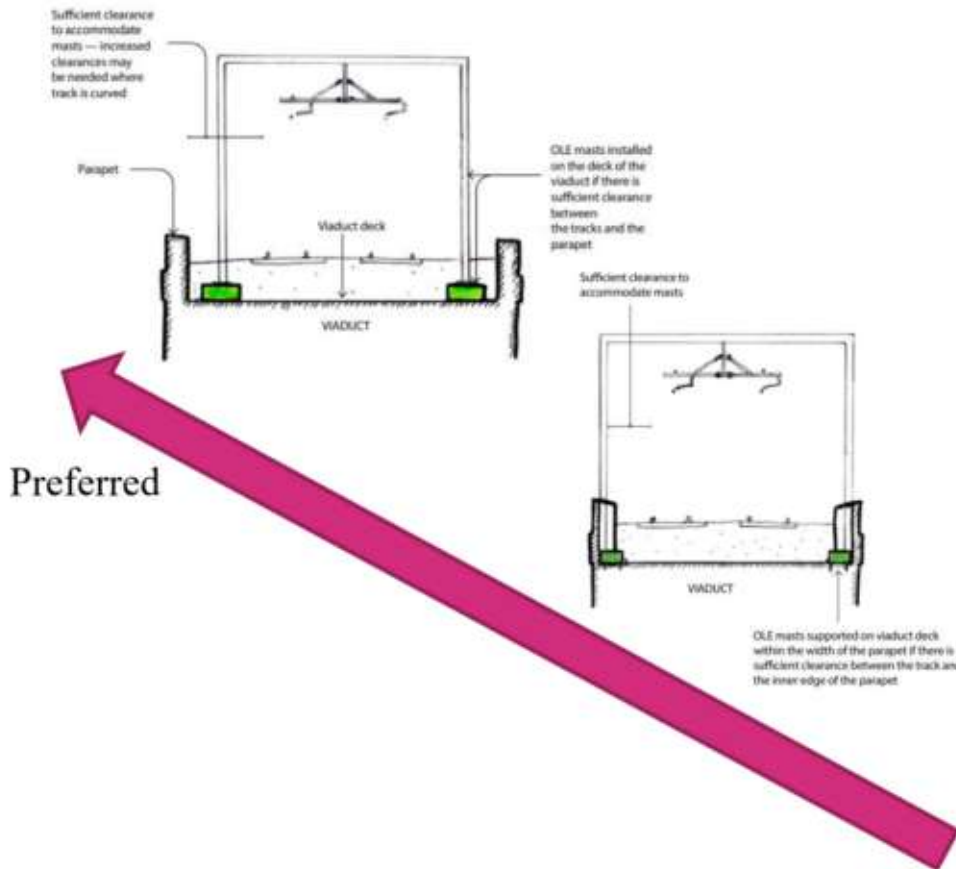
- Cantilever frames supporting OLE wires
- These are supported on vertical drop tubes suspended from the roof.
- Needed to consider new Euston Roof refurbishment and importance of how OLE would look aesthetically within setting of the station.
- Removes need for OLE structures on platforms / track cluttering the historic character



OLE options: Fixing to Historic Viaducts

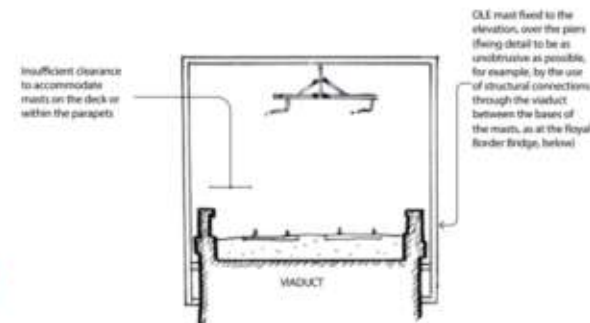
Principle for optioneering

Masts on viaducts: on the deck, in board of the parapets



- Inside parapets – trackside
- Within parapets
- Outside of parapets

Masts on viaducts: attached to the face of the piers

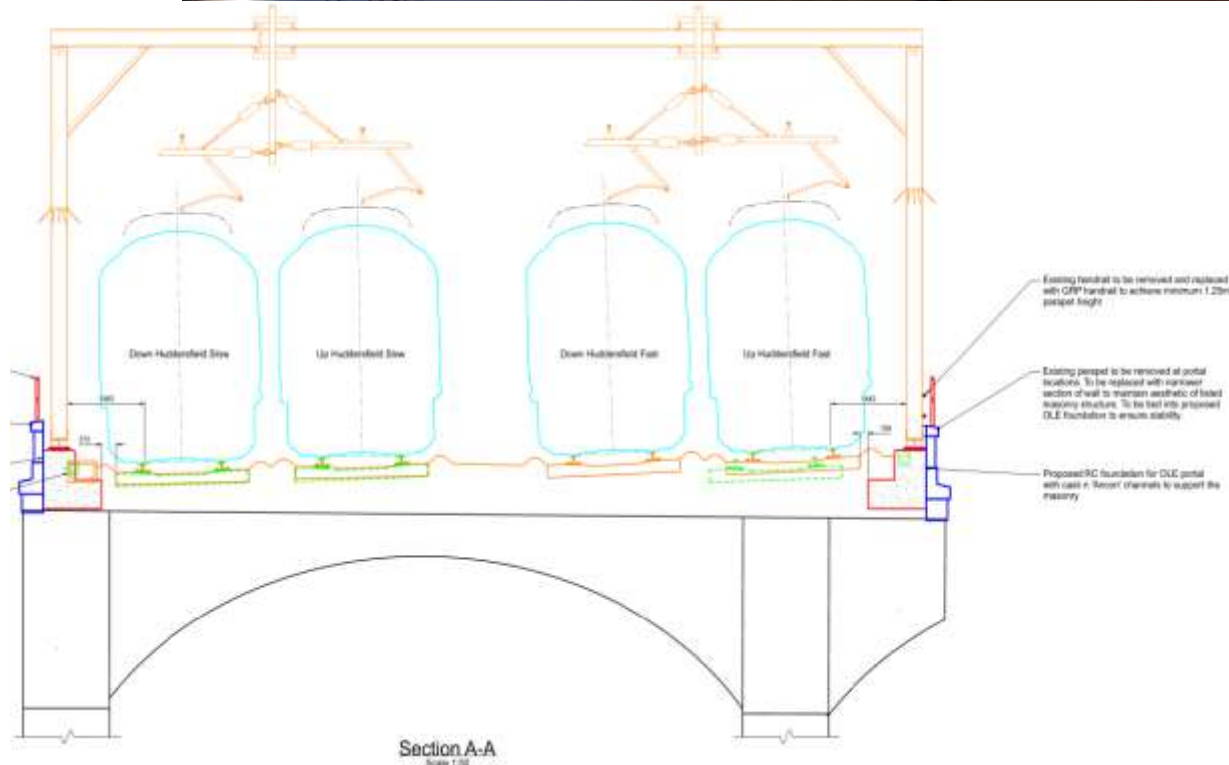


OLE on Viaducts – Optimising Portal Locations: Mirfield Viaduct

- Grade II Listed, constructed 1836-1839.
- Consideration of views to the viaduct and how the OLE will look – historic setting
- Working with OLE designers to maximise spacing within safe parameters to align as much off main viaduct spans over the river.
- Locating over piers, abutments – towards end of viaduct to avoid infiltrating views and setting.



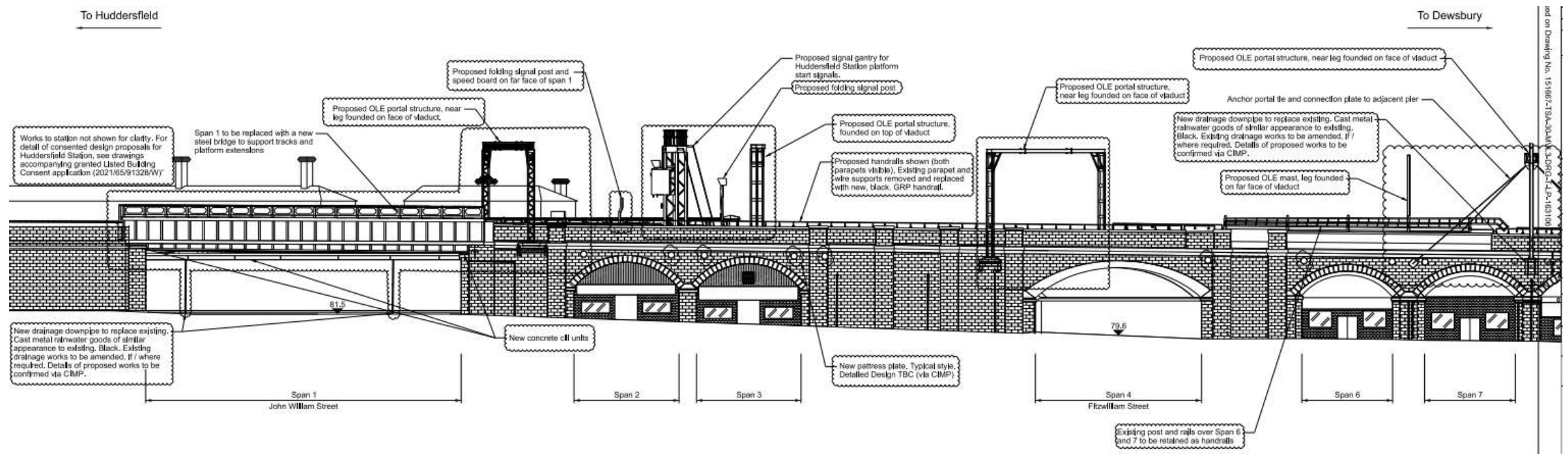
OLE on Viaducts – OLE Incorporated Within Parapet: Wheatley's Viaduct



- Grade II Listed, constructed 1836-1839
- OLE portals trackside – best option
- Removal of sections of the historic parapet to allow OLE portal foundations to be constructed.
- Parapet reinstated on completion using historic material but at a reduced thickness around the foundation of the portals

OLE on Viaducts – OLE outside of Parapet: Huddersfield Viaduct

- Grade II Listed, constructed 1845-1847 and expanded in 1880s. Contains 47 spans
- The siting of OLE portals over piers of the viaduct in most locations.
- Positioning the signal gantry on desk of viaduct rather than attached to the exterior.
- Avoiding placement of new elements over spans and aligning with viaduct features
- Monumental structure and there is scope for it to accommodate larger new elements due to the physicality of its presence.





BEST CONSIDERATIONS FOR HERITAGE

- Inside of parapet less physically intrusive and avoids fixing into historic fabric
- Within parapet next best option some disturbance / removal of historic fabric but doesn't detract from historic character and form
- Outside of parapet and anchored OLE most intrusive for heritage as greater disturbance to historic fabric and more visually intrusive.
- If outside of parapet need to consider flow of and rhythm of structure e.g. attached OLE to piers and abutments, thinking of spacing and symmetry and views to the structure – setting.
- OLE Through stations – attempt to fix to roof structure – like Huddersfield or through the station but limiting number and sensitive consideration of spacing e.g. Dewsbury.

Communicating with the Public

Temporary Interpretation banners –
Huddersfield Station, St George’s
Square and Mirfield Station.



Thank You

Any Questions or Thoughts?