Infrastructure Projects

Northern Programmes

The Network Rail (Dewsbury to Leeds W4 Scheme) Trans-Pennine Route Upgrade

Union Mill (Batley) Viaduct (MDL1/27) – Heritage Statement

Network Rail

TP/LNE/2022-010

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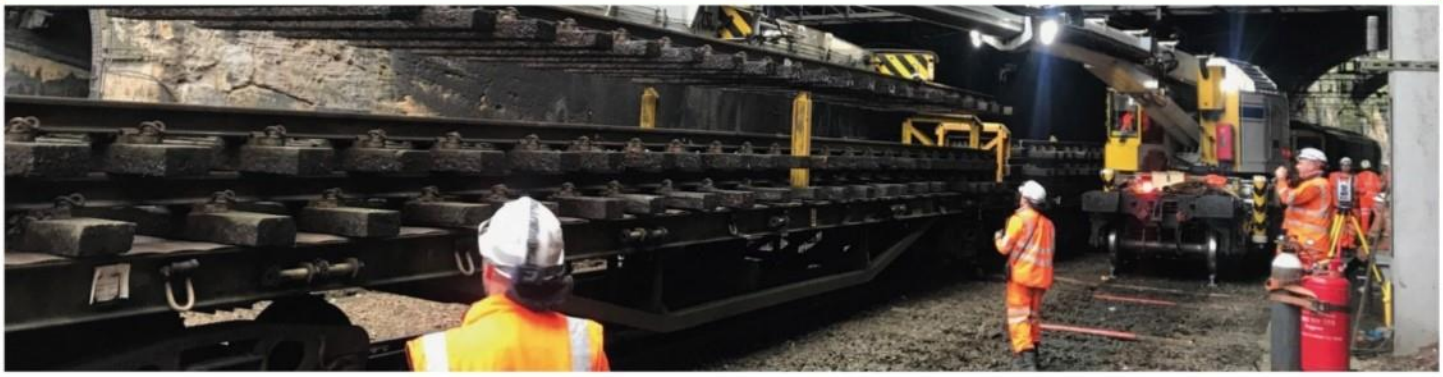

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1. INTRODUCTION

1.1 Report objectives

1.1.1 The Trans-Pennine Route Upgrade (TRU) (herein referred to as the 'Programme') is a programme of works which will improve the Trans-Pennine railway between Manchester, Huddersfield, Leeds and York and improve connections between key towns and cities across the north of England. The section of the Programme between Westtown (Dewsbury) and Leeds is known (and henceforth referred to) as the W4 Scheme; it will contribute to the overall TRU aims of increasing service capacity and offering journey time benefits through:

- Electrification of the line;
- Increase in line speeds;
- Remodelling of stations including platform extension works at Dewsbury and Morley, as well as the construction of a new footbridge to replace the existing station subway at Batley;
- Replacing the existing Lady Anne level crossing north of Batley with a footbridge.

1.1.2 As well as the works identified above, various other engineering works are necessary including strengthening of bridge decks (rail and highway); electrification of the line and provision of associated infrastructure will require alterations to bridge structures, including raising the height of parapets and the attachment of OLE fixings.

1.1.3 Under the Planning (Listed Buildings and Conservation Areas) Act 1990, consent is required from the local planning authority for any proposed works that would affect the character of a Listed Building. This Heritage Statement has been compiled in support of an application for Listed Building Consent by Network Rail in respect of the proposed works on the Grade II Listed MDL 1/27 Union Mill (Batley) Viaduct (NHLE 1134650), Mill Lane, Kirklees, West Yorkshire. A location plan is provided in Appendix A.

1.1.4 Union Mill (Batley) Viaduct (MDL1/27) was designated as a Grade II Listed building in January 1984. The Historic England list description (included in full in Appendix B) names the listed building as "Railway Viaduct". Throughout this Heritage Statement the structure is referred to as "Union Mill (Batley) Viaduct (MDL1/27)".

1.1.5 This Heritage Statement will seek to:

- Identify and discuss the heritage significance of the listed structure;
- Present the design requirements of the Scheme at the structure;
- Present the process of design development and optioneering which has led to the design proposal for the Scheme in relation to the structure;
- Identify the impacts of the design proposal on the significance of the structure, in the context of current national and local planning policy and guidance;
- Discuss any mitigation and/or compensation recommended in relation to the structure; and
- Consider the public benefits to be gained from the Scheme weighed against the impact on the significance of the structure, in line with the National Planning Policy Framework, 2021 and Kirklees Local Plan, 2019.

1.2 Current conditions

1.2.1 Union Mill (Batley) Viaduct (MDL 1/27) (Insert 1-1) is a 16-span railway viaduct carrying the Trans-Pennine Route, over Mill Lane and Grange Road, located c.500m south east of Batley Town Centre in Kirklees, West Yorkshire. The viaduct was built to the designs of Thomas Grainger for the Leeds, Dewsbury & Manchester Railway, and opened in 1848 by the London

& North Western Railway (LNWR).

1.2.2 The viaduct is constructed of quarry-faced stone and is largely unaltered. The structure has always carried two tracks and though some small alterations have occurred to parts of the structure due to changes in the surrounding townscape, the viaduct is largely as it was when constructed in the late 1840s. The viaduct spans carry the railway over roads or areas of public realm, though a number of arches lie adjacent to a commercial premise's car park.

Insert 1-1 Union Mill (Batley) Viaduct (MDL1/27) western elevation (looking south)

1.2.3 Two tracks of railway pass over the viaduct; the Up line to Dewsbury and the Down line to Batley. The structure was subject to a detailed examination as part of Network Rail's maintenance regime in 2014, which identified that it was in a fair condition, with a few defects including:

- Longitudinal fractures (Insert 1-2)
- Hollow and spalled masonry (Insert 1-2)
- Bulging to spandrel walls (Insert 1-3)
- Blocked drainage (Insert 1-4)

Insert 1-2 Example of fractures and masonry spalling

Insert 1-3 Evidence of bulging spandrel walls

Insert 1-4 Example of blocked drainage due to vegetation overgrowth

1.3 Summary of proposal

1.3.1 In order to achieve the TRU Programme objectives of improving the reliability and resilience of the railway, the Scheme will involve the electrification of the railway at Union Mill (Batley) Viaduct (MDL1/27). It is proposed that four Overhead Line Electrification (OLE) portals are placed on the viaduct to support the electrification of the section of track at this location. Due to design constraints, this will require the attachment of OLE brackets to the exterior of the viaduct at pier locations.

1.3.2 The design development process has included appraisal of various options to identify an approach which delivers the operational requirements, while also minimising impact on the heritage significance of the structure as far as possible. This is outlined below in Section 3.2. The design has been developed alongside consultation with Historic England and the Kirklees Council Conservation Team; this is detailed below in Section 1.5.

1.4 Legislative and policy context

Legislation

1.4.1 The Planning (Listed Buildings and Conservation Areas) Act 1990 (as amended) governs the designation and works to listed buildings in England.

1.4.2 The Act states in **s.1 (5)**:

'In this Act "listed building" means a building which is for the time being included in a list compiled or approved by the Secretary of State under this section; and for the purposes of this Act—

(a) any object or structure fixed to the building;
(b) any object or structure within the curtilage of the building which, although not fixed to the building, forms part of the land and has done so since before 1st July 1948, shall be treated as part of the building.'

1.4.3 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. **Section 16** of the Act identifies that whether such works can be carried out is determined by the local planning authority or the Secretary of State:

'(1) Subject to the previous provisions of this Part, the local planning authority or, as the case may be, the Secretary of State may grant or refuse an application for listed building consent and, if they grant consent, may grant it subject to conditions.

(2) In considering whether to grant listed building consent for any works the local planning authority or the Secretary of State shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses.

(3) Any listed building consent shall (except in so far as it otherwise provides) ensure for the benefit of the building and of all persons for the time being interested in it.'

1.4.4 In relation to the granting of Listed Building Consent, **Section 17** of the Act stipulates that conditions attached to Listed Building Consent may include those with respect to:

'(a) the preservation of particular features of the building, either as part of it or after severance from it;

(b) the making good, after the works are completed, of any damage caused to the building by the works; [and]

(c) the reconstruction of the building or any part of it following the execution of any works, with the use of original materials so far as practicable and with such alterations of the interior of the building as may be specified in the conditions'.

1.4.5 It is also defined in s.17 (2) that a condition 'may also be imposed requiring specified details of the works (whether or not set out in the application) to be approved subsequently by the local planning authority or, in the case of consent granted by the Secretary of State, specifying whether such details are to be approved by the local planning authority or by him'.

1.4.6 The Act also states in **s.66 (1)**:

'In considering whether to grant planning permission or permission in principle for development which affects a listed building or its setting, the local planning authority or, as the case may be, the Secretary of State shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses'.

National policy

1.4.7 The National Planning Policy Framework (NPPF, 2021) provides the Government's national planning policy on the conservation of the historic environment, supported by the Planning Practice Guidance (updated July 2019)[1]. This Heritage Statement aims to address relevant policy within the NPPF in relation to Section 16 'Conserving and enhancing the historic environment' and includes an assessment of significance of the heritage assets and their setting that may be affected by the proposed works, in compliance with paragraphs 194-208.

1.4.8 The following paragraphs as set out in the NPPF include key provisions considered of particular importance to this application.

- Paragraph 194 - *In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance*.
- Paragraph 199 - *When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation (and the more important the asset, the greater the weight should be). This is irrespective of whether any potential harm amounts to substantial harm, total loss, or less than substantial harm to its significance*.
- Paragraph 200 - *Any harm to, or loss of, the significance of a designated heritage asset (from its alteration or destruction, or from development within its setting), should require clear and convincing justification*. Substantial harm to or loss of:

  a) grade II listed buildings, or grade II registered parks or gardens, should be exceptional;

  b) assets of the highest significance, notably scheduled monuments, protected wreck sites, registered battlefields, grade I and II* listed buildings, grade I and II* registered parks and gardens, and World Heritage Sites, should be wholly exceptional.
- Paragraph 201 - Where a proposed development will lead to substantial harm to (or total loss of significance of) a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or total loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or all of the following apply:

  a) the nature of the heritage asset prevents all reasonable uses of the site; and

  b) no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation; and

  c) conservation by grant-funding or some form of not for profit, charitable or public ownership is demonstrably not possible; and

  d) the harm or loss is outweighed by the benefit of bringing the site back into use.
- Paragraph 202 – *Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the*

[1] It was published in March 2012 and revised in July 2021.

public benefits of the proposal, including, where appropriate, securing its optimum viable use.

- Paragraph 203 – *The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that directly or indirectly affect non-designated heritage assets, a balanced judgment will be required having regard to the scale of any harm or loss and the significance of the heritage asset*.

1.4.9 The National Planning Practice Guidance (Historic Environment) (PPG, 2014) gives further information on how national policy is to be interpreted and applied locally. The PPG includes particular guidance on matters relating to protecting the historic environment. The PPG for historic environment was significantly updated in 2019 to reflect the changes made in 2018/19 to NPPF policy.

Local policy

1.4.10 The Kirklees Local Plan was adopted in February 2019 and is now the statutory development plan for Kirklees providing a set of planning policies.

1.4.11 Kirklees Council recognises that *heritage assets are an irreplaceable resource and should aim to conserve them in a manner appropriate to their significance*[2]. Section 14 Historic Environment of the Local Plan sets out **Policy LP35** relating to the historic environment, which is reproduced below.

Policy LP35 Historic Environment

1. Development proposals affecting a designated heritage asset (or an archaeological site of national importance) should preserve or enhance the significance of the asset. In cases likely to result in substantial harm or loss, development will only be permitted where it can be demonstrated that the proposals would bring substantial public benefits that clearly outweigh the harm, or all of the following are met:
   a) the nature of the heritage asset prevents all reasonable uses of the site;
   b) no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation;
   c) conservation by grant-funding or some form of charitable or public ownership is demonstrably not possible; and
   d) the harm or loss is outweighed by the benefit of bringing the site back into use.

2. Proposals which would remove, harm or undermine the significance of a non-designated heritage asset, or its contribution to the character of a place will be permitted only where benefits of the development outweigh the harm having regard to the scale of the harm and the significance of the heritage asset. In the case of developments affecting archaeological sites of less than national importance where development affecting such sites is acceptable in principle, mitigation of damage will be ensured through preservation of the remains in situ as a preferred solution. When in situ preservation is not justified, the developer will be required to make adequate provision for excavation and recording before or during development.

3. Proposals should retain those elements of the historic environment which contribute to the distinct identity of the Kirklees area and ensure they are appropriately conserved, to the extent warranted by their significance, also having regard to the wider benefits of development. Consideration should be given to the need to:

[2] Kirklees Council, Kirklees Local Plan Strategy and Policies, 2019. https://www.kirklees.gov.uk/beta/planning-policy/pdf/local-plan-strategy-and-policies.pdf. 141.

e) ensure that proposals maintain and reinforce local distinctiveness and conserve the significance of designated and non-designated heritage assets;
f) ensure that proposals within Conservation Areas conserve those elements which contribute to their significance;
g) secure a sustainable future for heritage assets at risk and those associated with the local textile industry, historic farm buildings, places of worship and civic and institutional buildings constructed on the back of the wealth created by the textile industry as expressions of local civic pride and identity;
h) identify opportunities, including use of new technologies, to mitigate, and adapt to, the effects of climate change in ways that do not harm the significance of heritage assets and, where conflict is unavoidable, to balance the public benefit of climate change mitigation measures with the harm caused to the heritage assets' significance;
i) accommodate innovative design where this does not prejudice the significance of heritage assets;
j) preserve the setting of Castle Hill where appropriate and proposals which detrimentally impact on the setting of Castle Hill will not be permitted

1.5 Consultation

1.5.1 Historic England and Kirklees Council have been involved in ongoing stakeholder consultation with Network Rail through the development of the Trans-Pennine Route Upgrade between Dewsbury and Leeds

1.5.2 Regular meetings with both these historic environment stakeholders have been held to discuss design development of the Scheme in relation to (MDL 1/27) Union Mill (Batley) Viaduct. Meetings and key correspondence took place on the following dates:

- 9 June 2020 – W4 Bridges and Structures –Kirklees Council (Conservation) Engagement (1st round- introduction);
- 12 August 2020 – W4 Bridges and Structures – Historic England (Conservation) Engagement (1st round- introduction);
- 8 December 2020 - W4 Bridges and Structures – Historic England / Kirklees Council/ Leeds City Council (Conservation) Engagement (2nd round);
- 6 May 2021 - W4 Bridges and Structures – Historic England / Kirklees Council/ Leeds City Council (Conservation) Engagement (3rd round);
- 22 July 2021 - W4 Bridges and Structures – Historic England / Kirklees Council (Conservation) Engagement (email correspondence);

1.5.3 The meetings on **9 June 2020** and **12 August 2020** introduced the TRU W4 (Dewsbury to Leeds) scheme to Kirklees Council and Historic England. Union Mill (Batley) Viaduct (MDL 1/27) was also introduced, and an overview of the structure highlighting its historic background and heritage significance was presented. The stakeholders were also informed of the proposed works at the structure. It was mentioned that Overhead Line Electrification (OLE) would be required at Union Mill (Batley) Viaduct (MDL 1/27), and that a structural assessment would be needed to assess changes from the proposed TRU works such as track alignment.

1.5.4 In the **8 December 2020** meeting, a reminder of anticipated works to Union Mill (Batley) (MDL 1/27) was presented to the heritage stakeholders. It was noted that despite efforts to fit the proposed OLE within the structure (inside of the parapets on the track side) to minimise visual impacts, it would not be possible due to the viaduct's narrow design. An initial visualisation was shared showing the OLE brackets attached to the outside of the structure. It was agreed that ways of limiting the number of portals on the structure by maximising the spacing between them and also designing them as slender as possible to mitigate visual impacts would be looked at, however it was noted that the structure's curved design might prove to be a

challenge. An update on the structure's survey works and assessments was also given. It was stated that an assessment of TRU track changes was completed for Union Mill (Batley) (MDL 1/27), an assessment of the spandrel wall was planned for April 2021 and the overhead electrification gantry survey was scoped with results expected in March 2021 to enable designs. A discussion around viewpoints and ways of experiencing the structure also took place and it was agreed that different viewpoints towards the viaduct would be considered and assessed to capture the structure's dynamic nature and get a better understanding of visual impacts on its setting.

1.5.5 The **6 May 2021** meeting reiterated the structure's historic significance and presented more detailed design proposals to the stakeholders. Three viewpoints of the listed viaduct were shared showing an existing view and a visualisation of the proposed OLE. In terms of the OLE spacing, it was noted that the structure's curved design required the OLE portals to be positioned closer to one another, however vegetation in some viewpoints will limit visibility of the OLE. It was also mentioned that the portals would be aligned with the structure's piers to create a more pleasing arrangement in views towards the viaduct. The meeting concluded with stakeholders requesting to see more detailed OLE visualisations showing the cable wires and details of how the fixings would be attached to the structure.

1.5.6 On **22 July 2021**, updated OLE visualisations showing the requested clarifications were sent to the heritage stakeholders (Kirklees Council and Historic England) through email. Both stakeholders responded positively and were happy with the design clarifications.

2. HERITAGE ASSETS AND THEIR SIGNIFICANCE

2.1 Union Mill (Batley) Viaduct (MDL1/27) (Grade II Listed, NHLE 1134650)

Historic background

History of the Trans-Pennine Route

2.1.1 The Trans-Pennine Route between Dewsbury and Leeds was constructed and opened between 1845 and 1847. The route today forms part of the wider Trans-Pennine Route between York, Selby and Manchester, which comprises sections of rail line developed by different railway companies. The complex chain of companies and projects is a typical product of the "Railway Mania" of the mid-1840s, the height of a period of commercial confidence and expansion in the railways[3].

2.1.2 Between Dewsbury and Leeds, the Trans-Pennine Route comprises the line constructed by The Leeds, Dewsbury & Manchester Railway. The line formed part of a new, more direct route to the West Riding from Manchester, in competition to the earlier Manchester & Leeds Railway which had been constructed through the Calder Valley in the late 1830s. The more direct route was enabled partly through the advances in tunnel construction and large-scale engineering technology, notably realised through the construction of the 3-mile Standedge Tunnel, built by the Huddersfield & Manchester Railway, under the Pennine watershed to connect the line between the Upper Thame and Colne Valleys. Between Dewsbury and Leeds, the line is partly characterised by such examples of large scale and/or pioneering engineering structures, including tunnels, viaducts and both masonry and cast-iron bridges.

2.1.3 The development and expansion of the railways and their associated infrastructure during the first half of the 19th century, was characterised by the considerable influence on those towns which experienced the development of this new mode of transport. The railways resulted in place-making and industrial growth, as towns benefited from the connections and influences which they brought with them. The Trans-Pennine Route between Dewsbury and Leeds certainly had an influence on towns, forming an additional infrastructure element of the expansion of settlements such as Dewsbury and Batley, already underway as a result of the growth of textile, mining and maltings industries.

2.1.4 Union Mill (Batley) Viaduct (MDL1/27) was constructed by the Leeds, Dewsbury & Manchester Railway between 1845 and 1847. This line was constructed during the Heroic Age of railway building (1841-50). Opening in stages between 1846 and 1849, when railway mania was at its height, the Leeds, Dewsbury & Manchester Railway was constructed under the oversight of the principal engineer Thomas Grainger. Grainger was one of the leading railway engineers in Scotland at this time, working on Pioneering Age (1825-41) railways such as the Monkland and Kirkintilloch Railway (1824-1826) and the Glasgow and Garnick Railway (1826-1831), which he delivered in conjunction with the engineer John Miller. He is best known in England for his work on lines including the Leeds, Dewsbury & Manchester Railway (1845-1848), the East and West Yorkshire Junction Railway (1846); and the Leeds & Thirsk Railway (1845-1852). Grainger's work is notable for the imaginative way in which he tailored these lines to the difficult surrounding terrain and his bold masonry and distinctive iron bridge designs[4].

2.1.5 In 1847, the Leeds, Dewsbury & Manchester Railway along with the Huddersfield and Manchester Railway were absorbed into the London and North Western Railway (LNWR), providing a more direct route from Manchester to the West Riding and enabling the LNWR to access the textile and coal industries of West Yorkshire. By 1851, the LNWR was the most prominent railway company of the period, with over 800 miles of track and was the largest

[3] Alan Baxter Associates, 2019. TransPennine Route Upgrade Route-wide Statement of Significance. 14.

[4] Alan Baxter Associates, 2017. MDL1/6 & MDL 1/8 Bridges Statement of Significance. 13.

joint-stock concern of its time, capitalised at £29 million[5].

2.1.6 The history and significance of the Trans-Pennine Route is discussed at more length in the Route-Wide Statement of Significance[6]. This was produced to characterise the overall heritage significance of the Trans-Pennine Route as a whole.

MDL 1/27 Union Mill (Batley) Viaduct

2.1.7 Union Mill (Batley) Viaduct (MDL1/27) was constructed in 1848, to carry the railway over Mill Lane, across the valley to the south of Batley Station. At the time of the construction of the viaduct, the landscape around the structure was still relatively rural in character, with isolated examples of industrial development in the valley to the west of the viaduct. To the south-west of the viaduct there was a large woollen mill complex of Union Mill, from which the structure derived its name (see Insert 2-1), while to the north-west along Mill Lane was Rouse Mill which processed corn. Batley Station was itself located approximately 500m south-west of the centre of Batley. From the early 1860s, as well as serving the Leeds, Dewsbury and Manchester Railway (subsequently the LNWR) line, the station also served the West Yorkshire Railway (formerly the Bradford, Wakefield and Leeds Railway) branch line to Wakefield via Ossett (amalgamated into the Great Northern Railway (GNR) in 1865).

2.1.8 The industrial development of Batley during the second half of the 19th century resulted in considerable changes in the landscape immediately around the viaduct; such growth of industry shaped the historic townscape of the settlement as experienced within the setting of the viaduct today. In addition to Union Mills, a number of other mills had been developed in the valley around the viaduct by the end of the 19th century. This included the development of the land to the east of the viaduct, which included a gasworks as well as woollen industries, while to the north-west the expansion of Batley's core had resulted in the development of the area to the west of Batley Station. Station Road, in particular, had been developed with large warehouses (sometimes known as seller's houses) related to the heavy woollen industry; this development shaped the way that those traveling over the viaduct experienced their approach to Batley Station (see below, 2.1.10). With these developments, additional roads were constructed under the viaduct.

[5] Alan Baxter Associates, 2017. TransPennine Route Statement of History and Significance: West of Leeds. 5.
[6] Alan Baxter Associates, 2019. TransPennine Route Upgrade: Route-wide Statement of Significance.

Insert 2-1 Ordnance Survey Six-inch map (surveyed 1847-1851, published 1854) showing Union Mill (Batley) Viaduct (MDL1/27) (red circle)

2.1.9 The other notable development during the second half of the 19th century was the construction of the neighbouring GNR Dewsbury & Batley branch line. This was opened in 1880 to complete the GNR's loop from Ossett to Batley via Dewsbury Central which was used by some GNR services between Bradford and London Kings Cross (effectively providing an alternative route between Batley and Wakefield to the earlier line running east from Batley Station); the alignment of the railway closely followed that of the LNWR line between Batley Carr and Batley Station, with the alignment of the railway crossing under the LNWR line just south of the southern end of the viaduct and crossing the valley on a separate viaduct constructed immediately east of Union Mill (Batley) Viaduct (MDL1/27). This viaduct was at a slightly lower level to Union Mill (Batley) Viaduct (MDL1/27) and comprised a plate girder span over Mill Lane, five masonry arches, a second girder span over Grange Road and another stone arch[7]. The GNR line subsequently closed in 1964, with the viaduct being demolished in the late 1980s.

2.1.10 The setting of Union Mill (Batley) Viaduct (MDL 1/27) is characterised by the structure's prominence within the landscape to the south-east of Batley town centre. The viaduct curves between two spurs of higher ground, each of which have themselves been accentuated by the embankments of the railway. The scale and location of the structure, combined with the form and topography of the townscape, landscape and roads around it, means that the viaduct is a prominent element in views towards and across it. Multiple roads approach and pass under the structure at different angles, offering profile and oblique views evidencing the scale and engineering of the viaduct. The viaduct is also prominent in longer-distance views, including from the higher ground around Mount Pleasant to the south-west, Hanging Heaton to the south-east and from the 19th century core of Batley around Station Road. There is also a visual relationship between the viaduct and Batley Station, with the structure visible in views along the railway line from the station platforms. Those traveling on the railway across the viaduct are, in turn, afforded views from the structure across the townscape as they approach or depart Batley. This is particularly the case for views towards the historic 19th century core

[7] At the time of the listing of Union Mill (Batley) Viaduct (MDL1/27) in January 1984, the GNR viaduct was still extant and the Historic England list description identifies that it was not included in the listing. RAILWAY VIADUCT, Non Civil Parish - 1134650 | Historic England. Accessed 3 December 2021.

of commercial warehousing around Station Road. Such views characterise those rail passengers experience of the town as they arrive, depart or pass through it. In the later 20th and 21st centuries, the areas immediately around the viaduct have undergone some clearance with the removal of mill buildings and replacement with modern commercial and industrial premises, which has served to alter the immediate historic setting of the viaduct slightly.

Description

2.1.11 Union Mill (Batley) Viaduct (MDL1/27) comprises 16 spans in total that stretch c.180m over a slight curve with a north/ south western orientation. The viaduct carries the railway over two public roads: Mill Lane (Span 6) and Grange Road (Spans 13,14), the remaining spans cross over public realm and a car park. Both ends of the structure are buried into embankments which partially obscure Spans 1,15 and 16, with buried abutments.

2.1.12 The structure is constructed in rock faced Pennine Lower Coal Measures sandstone with dressed stone vaults. Both elevations of the viaduct are similar. The viaduct arches are semi-circular with average spans of c.9.14m and heights that range from c.5m (where obscured) to c.13.92m. The arch rings are stepped, rusticated v-jointed ashlar voussoirs which continue as quoins to the soffit of the arch. The soffits of the arches comprise large, tooled blocks of ashlar.

Insert 2-2 Viaduct arch and parapet

2.1.13 The viaduct's substructure consists of tall squared and coursed quarry-faced stone piers with moulded curved impost bands that project above the piers and of which the arches rise. The spandrel walls are also of squared and coursed quarry-faced stone, a large, curved cornice of moulded ashlar projects out above the arches and acts as a base for the parapet wall, also of squared coursed quarry-faced stone and topped with squared copers.

Insert 2-3 Eastern elevation looking south

2.1.14 The Batley Business & Technology Centre lies c.50m east of the viaduct, its car park lies adjacent to Spans 8 to 12, a site formerly part of the Batley Corporation Gas Works. A modern industrial complex lies c.20m west of Spans 1 to 10, formerly the site Union Mill and Drying Works.

2.1.15 While the structure is largely unaltered in form from its construction, the viaduct has undergone some smaller later additions and alterations. It has undergone some localised strengthening works in the form of the installation of tie bars and pattress plates (see Insert 2-4), drainage pipes, likely of plastic, have been fitted to the outside of several piers, a signal gantry has been attached to the outside of the viaduct on its western side between Spans 10 and 11 and safety handrails have been added along both parapets.

Insert 2-4 Pattress plates showing previous strengthening works.

Insert 2-5 Drainage pipes attached to piers (western elevation looking north)

Significance

2.1.16 Union Mill (Batley) Viaduct (MDL 1/27) is of significance as a largely unaltered example of an 1840s viaduct, dating from the Heroic Age (1841-50) of railway building. The viaduct derives significance from its association with the Leeds, Dewsbury & Manchester Railway, the engineering of Thomas Grainger, the quality of architectural expression in its design and the scale of its presence within the townscape.

2.1.17 The viaduct evidences the great engineering achievement which characterised the period of 'railway mania' during the 1840s and 50s. In this respect, the structure derives historical value in representing one of the numerous large-scale engineering features which characterised the achievement of the original Trans-Pennine Route construction, as well as the wider development of the network during the 1840s. It directly references the skill of those responsible for its design and construction. The fact that the structure is still in use as part of the operational rail network enhances the structure's historical value, through the continuity of its function and legibility. Union Mill (Batley) Viaduct (MDL 1/27) represents one of the group of surviving Grainger-designed structures on the historic railway (see below, 2.1.23 and 2.1.24) and its historical and continued association with this group of structures strongly contributes to its significance.

2.1.18 The viaduct also derives significance from the aesthetic value of its architectural quality, evident in its design detailing and monumental engineering form. Thomas Grainger's approach which incorporated styled elements such as the voussoirs keyed into the coursing and rusticated piers have the effect of elevating the architectural expression of the structure.

2.1.19 Although the viaduct has undergone little alteration since its construction, ensuring the continued legibility of its historic design, there is evidence of change and adaptation in the form of strengthening and necessary safety and repair works to ensure the survival of historic fabric, which all adds to the story of the viaduct's use. These works and adaptations further understanding of the structural components and engineering interventions, which offer the potential for evidential value as a contributing factor to the viaduct's significance.

2.1.20 The architectural interest of the viaduct is enhanced further by the presence of the structure within the townscape. The viaduct spans between two spurs of higher ground, crossing multiple roads; the monumental scale, architectural quality and engineering achievement of the structure are evidenced in views towards and through the viaduct (see below, 2.1.21). The viaduct forms a recognisable element of Batley's townscape, which is experienced and appreciated on a regular basis by people travelling under and along it, living next to it and working in proximity to it. It is a defining piece of architecture that has been an established landmark within the town for over 170 years.

2.1.21 Union Mill (Batley) Viaduct (MDL 1/27) derives significance from its setting. The prominence of the structure, evidenced in views towards and across the viaduct, contributes to the appreciation of the engineering achievement and historical interest of the structure and Grainger's design. Such views also reinforce an understanding of the historic relationship between the railway and the development of Batley through the views towards the 19th century selling houses around Station Road which are afforded those crossing the viaduct by train. Later 20th and early 21st century clearance and infill around the structure has changed its immediate setting, which has served to slightly reduce the extent to which its setting contributes to the viaduct's overall significance. However, the visual presence of the viaduct as a significant part of the townscape, characterised by views of the arches (with the addition of the frequent movement of trains atop it), defines it as an element of the historic industrial and transportation network within Batley, which is experienced on a daily basis by local people.

Group value

2.1.22 Masonry railway bridges across the Trans-Pennine Route to the west of Leeds have been characterised as being of local or regional interest, depending on their architectural quality, contribution to wider historical interest of the route, and their group value; it has been noted however that, as a group, they are not of substantial national interest due to their dating from a period of railway development when thousands of similar structures were erected[8].

2.1.23 However, the Route is notable for the succession of viaducts, required due to the hilly terrain which it navigates. Though a more prominent feature of the line to the south-west, particularly the historic Huddersfield and Manchester Railway along the Tame and Colne valleys, the Leeds, Dewsbury & Manchester Railway also features a trio of viaducts, with Grainger having also designed Dewsbury Viaduct (MDL 1/19) (Grade II Listed, NHLE 1313659) and Churwell Viaduct (MDL 1/40) (Grade II Listed, NHLE 1451053)[9].

2.1.24 The viaducts at Dewsbury (MDL 1/19) and Churwell (MDL 1/40) have similar design language to that at Union Mill (Batley) Viaduct (MDL 1/27), albeit Churwell is smaller in scale, crossing a shorter and shallower valley than the other two. In each case, Grainger employs stylistic motifs such as voussoirs and impost bands which add architectural quality to the functional structures, while each viaduct also forms a prominent element of its surrounding landscape or townscape. The three structures form a legible group, evidencing Grainger's common approach to the engineering of the structures across the three locations; that all three have been little altered adds to their group value. Though the similar aesthetics and scale of the viaducts place them in close relationship with one another, Union Mill (Batley) Viaduct (MDL 1/27) is also part of a wider group of Grainger structures constructed for the Leeds, Dewsbury & Manchester Railway, which also includes underbridges and overbridges of both cast iron and masonry construction, including Wood Lane Overbridge (MDL 1/23) (Grade II Listed, NHLE 1449980)[10], located approximately 1km south of the viaduct, which demonstrate material and stylistic similarities to elements of Grainger's larger viaducts.

2.1.25 As noted above in paragraph 2.1.4, Grainger was also responsible for the design and engineering of structures on other railway lines during the Heroic Age (1825-41) of railway development, notably the nearby East and West Yorkshire Junction Railway (1846) and the Leeds & Thirsk Railway (1845-1852). Further examples of masonry structures designed by Grainger survive on these routes, which share common characteristics and design language with those on the Leeds, Dewsbury & Manchester Railway, including with Union Mill (Batley) Viaduct (MDL 1/27). These include examples of large-scale viaducts, some also designated as Listed Buildings, for example the Wharfedale Viaduct over the River Wharfe on the Leeds & Thirsk Railway (Grade II Listed, NHLEs 1150036, 1253368)[11]. Such examples also share group value with Grainger's Leeds, Dewsbury & Manchester Railway bridges, as part of the wider group of surviving historic railway engineering structures he designed.

2.1.26 The largely contemporary construction of a number of individual railways which combined to form the wider Trans-Pennine Route mean that historic structures derive significance as part of wider groups across these various historic lines. As noted above, large-scale viaducts are a feature of those constituent historic railways which make up the Trans-Pennine Route today. In particular, a number of the structures engineered by A. S. Jee for the Huddersfield and Manchester Railway demonstrate similarities in scale and architectural detailing to Grainger's viaducts on the Leeds, Dewsbury & Manchester Railway, including Union Mill (Batley) Viaduct (MDL 1/27). Four examples from A.S. Jee, in particular, demonstrate these similarities and

[8] Alan Baxter Associates, 2019. TransPennine Route Upgrade Route-wide Statement of Significance. 37.
[9] Listed Building Consent is also being sought for both these structures as part of works relating to the W4 Scheme (see paragraph 4.1.6)
[10] Listed Building Consent is also being sought for this structure as part of works relating to the W4 Scheme.
[11] Wharfedale Viaduct is Listed by Historic England under two different NHLE list entry numbers, due to the structure lying across the boundary of two parishes, on either side of the River Wharfe. The six southernmost spans are in the parish of Arthington (NHLE 1253368), the other 14 spans lie within the parish of Castley (NHLE 1150036).

form a legible group alongside Grainger's viaducts:

- Uppermill Viaduct (MVL3/31) (Grade II Listed, NHLE 1068120);
- Slaithwaite Viaduct (MVL3/61) (Grade II Listed, NHLE 1224049);
- Crimble Viaduct (MVL3/64) (Grade II Listed, NHLE 1233737); and
- Milne (Lockwood) Viaduct (MVL3/76) (Grade II Listed, NHLE 1220121)

2.1.27 The group value which Union Mill (Batley) Viaduct (MDL 1/27) derives from the relationship with such contemporary structures from the wider Trans-Pennine Route provides understanding of the wider trends and engineering achievement which characterise both the constituent railways of the Route and the Heroic Age (1825-41) of railway building more generally. The group value is enhanced by all such structures continuing to form part of the operational railway; as a collective group of assets, they are experienced by those following the rail line (traveling on it, or near it) as coherent features of a single historic route.

2.1.28 The group value of Union Mill (Batley) Viaduct (MDL 1/27) makes a strong contribution to its overall significance. The viaduct comprises one element of the wider surviving group of structures associated with Grainger on the railway between Leeds and Ravensthorpe, and also represents one of the group of contemporary viaducts which characterise the engineering of the multiple historic railways which today make up the Trans-Pennine Route.

2.2 Other heritage assets

2.2.1 The location of the designated and non-designated heritage assets discussed below are shown in Appendix A.

Listed Buildings

2.2.2 There are no Listed Buildings located within the immediate proximity of Union Mill (Batley) Viaduct (MDL 1/27).

2.2.3 Between 150m and 300m to the north-west of the viaduct lies a group of Grade II Listed Buildings, nucleated around Station Road in the historic commercial core of the 19th century development of Batley. The majority of these buildings represent selling houses and warehousing associated with the heavy woollen industry, notable for their ornate architectural expression, though Station Road as a whole has undergone the loss of some of the similar buildings which historically characterised this part of the town. A number of these buildings have intervisibility with Union Mill (Batley) Viaduct (MDL 1/27), characterising the views of the town afforded to passengers traveling over the viaduct (see above, 2.1.10); in particular 32-40 Station Road (Grade II Listed, NHLE 1300286), The former Xclusiv nightclub adjoining Number 51 (Grade II Listed, NHLE 1134617) and 51 Station Road (Grade II Listed, NHLE 1134616) form the crescent curve of Station Road opposite Batley Station, clearly visible from the viaduct. These Listed Buildings derive some significance from their setting, including this intervisibility with the viaduct and the views which characterise the railway's approach to Batley.

2.2.4 All these Listed Buildings also lie within the Station Road Batley Conservation Area (see below).

Conservation Areas

2.2.5 There is one Conservation Area located within 250m of Union Mill (Batley) Viaduct (MDL 1/27): Station Road Batley Conservation Area, the southern edge is located approximately 50m north-west of the viaduct. Whilst the viaduct is not located within the Conservation Area, it does have a strong visual relationship with it.

2.2.6 The Station Road Batley Conservation Area is considered to be of special architectural and historic interest through its mix of industrial, commercial and residential properties, reflecting the historic development and importance of such differing typologies in the history of the town, particularly during the 19th century. The Conservation Area Appraisal identifies the grandeur of the properties on Station Road itself as capturing the glamour and wealth of Batley in its heyday while the surviving associated mills and houses evidence the hard work and economic conditions which were required to achieve such opulence[12]. The area around Station Road, containing multiple Listed Buildings (see above), was developed during the 1870s with warehouses and selling houses constructed in both Classical and Gothic styles; these were not designated as humble storage buildings, but were intended to parade the wealth and prestige of the wool manufacturing firms that built them to display their wares to buyers brought by railway from all over the world[13]. The Station Road Conservation Area also includes the buildings of Batley Station and the site of the former Station Hotel which was connected to the railway platform by a direct walkway. Today, the boundary wall, access point and gatepiers of the Station Hotel still remain. The Area has a strong visual relationship with the railway.. The view of selling houses, dominating the skyline, afforded passengers arriving from the south by rail, is noted as a particularly significant view in the Conservation Area Appraisal[14].

2.2.7 The key view across the historic townscape to the selling houses from the viaduct means that there is a relationship between the Grade II Listed viaduct and the Conservation Area which contributes to the appreciation of the special architectural and historic interest of the Conservation Area. Though the buildings along Station Road form only one element of the Conservation Area, they are one of the key elements contributing to its overall significance, and thereby the Conservation Area does derive limited significance from the visual relationship with Union Mill (Batley) Viaduct (MDL 1/27).

Non-designated heritage assets

2.2.8 The West Yorkshire Historic Environment Record (HER) records nine non-designated assets located within approximately 250m of Union Mill (Batley) Viaduct (MDL 1/27). These assets comprise a mix of industrial and commercial buildings associated with the heavy woollen industry, as well as historic railway buildings at Batley Station.

2.2.9 The HER records the sites of a number of historic mill buildings within the valley on either side of the Grade II Listed Viaduct. Four of these are located to the west of the viaduct, and include the site of Union Mill (HER 17819) from which the viaduct takes its alternative name. A fifth asset, the site of Greenhill Mills and Dyeworks (HER 17825), lies approximately 180m to the east of the viaduct. Of these former mills, only one asset remains partly extant: Alexandra Mills (HER 17812), located approximately 110m west of the viaduct with a number of historic mill buildings. These mills would have historically characterised the historic townscape immediately surrounding the viaduct during the 19th and early 20th century, however the removal of the majority of the historic structures has degraded the legibility of this setting. Though Union Mill (HER 17819) shares a relationship with the viaduct due to their shared names, the loss of the mill buildings has also reduced this legibility. Very limited significance is derived from any relationship between these non-designated assets and the Grade II Listed viaduct.

2.2.10 The HER records two non-designated assets associated with the historic railway to the north of the viaduct: Batley Station (HER 8330) and a former railway goods shed to the north of the station (HER 7101). The Station has a relationship with the viaduct being of contemporary construction and sharing intervisibility which evidences their historic association (see above, 2.1.10). The station has changed considerably since its construction, and though the station

[12] Kirklees Council, no date. *Station Road Batley Conservation Area Appraisal*. 8.
[13] Ibid.
[14] Ibid, 10.

building survives from its construction in 1848, the overall size of the station is greatly reduced from its heyday at the turn of the 20th century when it served multiple lines in a tri-junction arrangement. The former goods shed, which today forms part of the Angloco fire fighting and rescue vehicles commercial site, does not share the same visual relationship with the viaduct, however being constructed in 1848 as part of the original station complex, it does have some limited historical association as part of the wider historic railway infrastructure. The viaduct and these non-designated assets derive limited significance from their historic associative relationships.

2.2.11 Two further 19th century warehouses are recorded on the HER, located within the Station Road Batley Conservation Area, approximately 220m north-west of the viaduct. These represent further examples of buildings associated with the heavy woollen industry, albeit of more utilitarian construction than the adjacent Grade II Listed rag merchant's warehouses (see above, 2.2.6). These have no association with the viaduct and very limited intervisibility due to intervening buildings and structures; no significance is derived for any of these assets from what very limited relationship they do have.

2.2.12 In addition to those non-designated assets recorded by the West Yorkshire HER, historic mapping has identified two additional non-designated heritage assets within proximity of the Grade II Listed viaduct. These comprise the historic alignment of the former Great Northern Railway (GNR) line and the site of the former viaduct that carried the GNR line over the valley just east of Union Mill (Batley) Viaduct (MDL 1/27) (see above 0). Though constructed by a different railway company, c.30 years after the Leeds, Dewsbury & Manchester Railway and Union Mill (Batley) Viaduct (MDL 1/27), these non-designated assets form part of the wider late 19th century historic railway landscape alongside the Grade II Listed viaduct. The sites are no longer extant and the change of use in the surrounding area has reduced their legibility and historic relationship with Union Mill (Batley) Viaduct (MDL 1/27). The removal and disturbance of the sites have greatly impacted the degree in which Union Mill (Batley) Viaduct (MDL 1/27) and the non-designated assets derive significance from one another. There are no current direct relationships between the non-designated assets and the Grade II Listed viaduct, and their historic association is not understood or appreciated within the current landscape.

3. PROPOSALS

3.1 Background to proposals

3.1.1 To achieve the TRU Programme objectives of improving the reliability and resilience of the railway and to contribute to the sustainability agenda of a carbon neutral Britain by 2050, the Scheme would involve the electrification of the railway.

3.1.2 In order to provide overhead electrification to the section of track over Union Mill (Batley) Viaduct (MDL 1/27), OLE portal structures are required on the viaduct. The distances required between the portals necessitates the placing of four OLE portals on the structure itself, as the length of the viaduct is too great for the OLE wires to span across the structure with portals placed at either end alone. The main heritage consideration for this structure is how the OLE portals would physically interact with the fabric of the viaduct, as well as the impact of their visual presence on the structure's setting.

3.2 Design development and justification

3.2.1 The design development process included optioneering to determine the position of the OLE portals on the structure. Three design options were considered in an order of preference to try to limit changes to the historic fabric and impact on the appearance and setting of the structure. The design development process has also involved engagement with Historic England and Kirklees Council (as detailed above in Section 1.5).

3.2.2 The options considered comprised:

- Option 1: To locate the OLE portal masts and foundations on the deck of the existing structure, in board of the parapets. This would be possible if sufficient clearance is available from the tracks to the parapet. This option requires no modifications to be made to the deck structure, or the parapet structure;
- Option 2: To locally reduce the parapet thickness on the inside of the viaduct to accommodate the OLE mast and foundation within the parapet thickness. This option would be pursued if there was insufficient clearance for the portals foundations to be located in board of the existing parapets (i.e. if Option 1 was not possible); and
- Option 3: To fix the OLE portal masts to the exterior of the viaduct at pier locations. This option would be pursued if there was insufficient clearance for the portals foundations to be located either in board of the existing parapets, or within the existing parapet thickness (i.e. if neither Option 1 nor Option 2 were possible).

3.2.3 A fourth option, comprising installation of the OLE portals with pad foundations at road level was looked at but immediately discounted due to its highly intrusive visual impact. This would have involved constructing new piers attached to the viaduct down to ground level on which the OLE portals would be sited. This was considered the worst-case scenario as, although these new piers could be clad in stone, they would be attached to the viaduct covering the length of its piers, therefore making the intervention more prominent and concealing elements of the structure's historic fabric.

3.2.4 An assessment of the clearances on the viaduct determined that it was not possible to site the OLE portals and foundations in board of the parapets on the deck of the viaduct (option 1) or within the existing parapet thickness (option 2). The minimum distance required to install the OLE portals with pad foundations across the structure would be 1800mm on the western side of the structure and 2300mm on the eastern side. However the clearance assessment determined that the maximum clearances possible on the viaduct were no more than 850mm. Therefore, it was established that the viaduct deck at Union Mill (Batley) Viaduct (MDL 1/27) is not sufficiently wide to accommodate the OLE portals and foundations as well as providing adequate clearance from the structures to the track alignment. Consequently, Options 1 and

2 were discounted.

3.2.5 Although it was acknowledged that Option 3 would have a greater visual impact on the structure than options 1 and 2, efforts to fit the proposed OLE within the viaduct were not possible due to the structure's narrow design, as outlined above. It was therefore decided that due to the clearance constraints, Option 3 would be progressed, requiring the attachment of the OLE portals to the exterior of the viaduct.

3.2.6 The design of the OLE portals was further developed to minimise visual impacts where possible, taking into account the setting of the historic structure and other associated heritage assets. Attempts to minimise the number of portals on the structure and sensitively position them at certain pier locations were considered to mitigate the resulting visual impacts, this included taking into consideration the structure's curved design which influenced the distances between portals. Designers looked at achieving the maximum spacing between the OLE portals to reduce their presence on the structure; however its curved design required the portals to be spaced closer to one another at certain locations. To further reduce the visual impact and to create a less intrusive design, the portals were positioned to align over the viaduct's piers and were designed as slender as possible to reduce their prominence. The optimum solution was devised given the constraints regarding the Viaduct's curved form and layout.

3.2.7 The proposed OLE brackets were also carefully designed to minimise physical impacts to the viaduct's historic fabric. They were positioned at certain locations to avoid clashing with the viaduct's architectural details such as the moulded string course along the base of the parapet, which would occur if the OLE brackets were attached higher on the face of the structure. Similarly, the width of the brackets was designed to ensure the OLE portal arm would not clash with the string course or be located in such proximity to it as to completely mask it from view.

3.3 Description of proposals

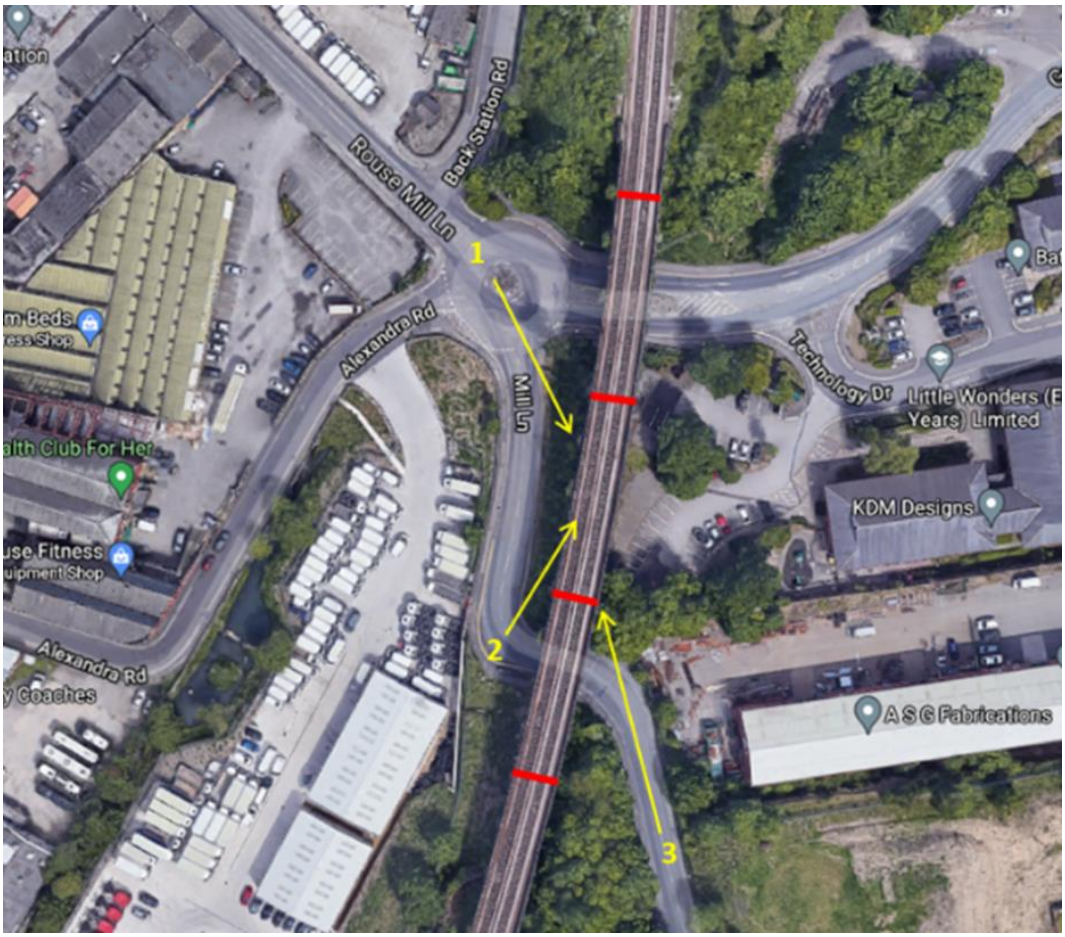
3.3.1 It is proposed to install four OLE portals on Union Mill (Batley) Viaduct (MDL 1/27), to carry the OLE wires along this section of the railway. Construction of the proposed OLE would involve attaching the portals to the exterior of the viaduct with V-shaped brackets.

3.3.2 The proposed works relating to the installation of the OLE portals over the length of the viaduct will involve the following main elements:

- The OLE portals will be placed over piers 3,7,11 and 15. Each portal will comprise wall brackets that will be attached to piers on either side of the viaduct.
- The bracket anchors will be installed into the masonry piers, the construction of which will involve drilling holes to insert the anchors and attach the bracket steelwork on to them.
- Any stonework that will be concealed by wall brackets will be repointed prior to being covered by the brackets. Any repairs will be sympathetic and match the strength, bond, and colour of the existing masonry, reusing existing stonework where possible.
- Where the wall face surface is steeply inclined an inclined wall bracket mount will be proposed to suit the inclination of the wall surface. These assumptions shall be verified and validated by site testing and proof loading.
- Bespoke V-shaped OLE bracket detail has been proposed to avoid any clash with the viaduct's existing pattress plates and drainage downpipes on the face of the walls. Detailed design of the OLE brackets would be agreed by condition attached to the Listed Building Consent.
- OLE equipment finishes and materials will comprise stainless steel anchor bars and proprietary anchors, vinylester resin or similar approved non-shrink cementitious / resinous grout, and galvanised steel OLE brackets.

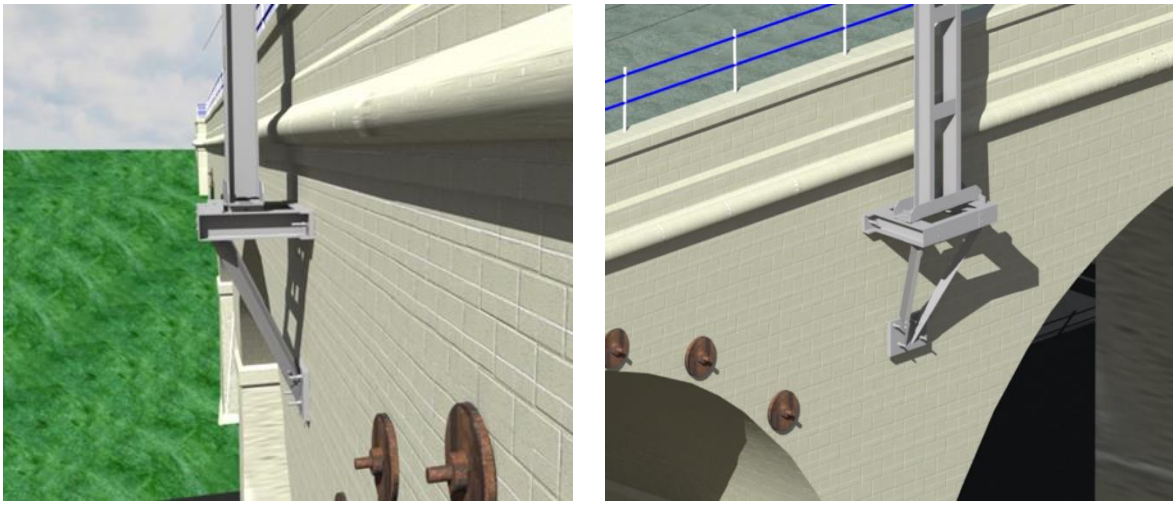
- Vegetation will be removed at the vicinity of the bracket locations and will be treated to prevent regrowth.

3.3.3 The proposed works will be carried out as sympathetically as possible. As previously mentioned, the OLE portals and brackets will align with the piers to minimise the OLE visual impact, and their positioning on the piers will be designed to avoid clashing with the viaduct's architectural details such as the moulded string course along the base of the parapet (see Insert 3-3). This will ensure retaining elements of historic fabric contributing to the structure's significance.



Insert 3-1 Aerial view showing locations of OLE portals (represented by the red lines across the structure). The yellow numbers and arrows indicate the locations of viewpoints (see Insert 3-2 below).

Insert 3-2 Indicative visualisation showing the OLE portals along the viaduct. Note the position of this visualisation is represented by viewpoint 1 indicated by the map in Insert 3-1 above.



Insert 3-3 Indicative visualisation showing an OLE bracket attached to the viaduct pier, avoiding physical impacts on the string course

3.3.4 The proposed works to Union Mill (Batley) Viaduct (MDL 1/27) are shown in the following drawings which accompany this application:

- Existing General Arrangement (151667-TSA-41-MDL1-DRG-T-LP-160051)
- Proposed General Arrangement (151667-TSA-41-MDL1-DRG-T-LP-160052)
- Existing and proposed Sections and Details (151667-TSA-41-MDL1-DRG-T-LP-160053, 151667-TSA-41-MDL1-DRG-T-LP-160054)

4. IMPACT OF PROPOSALS

4.1 Impact on heritage assets

Impact on Union Mill (Batley) Viaduct (MDL 1/27)

4.1.1 The proposed works would involve permanent alterations to the historic fabric of the Grade II Listed Union Mill (Batley) Viaduct (MDL 1/27), comprising the permanent installation of four OLE portals onto the Listed structure. This would alter the appearance of the structure, although the positioning of the OLE has been designed sympathetically to respond to the character of the viaduct and limit the impact of the proposals on its appearance as much as is reasonably practicable.

4.1.2 The Listed structure derives significance from its aesthetic value, due to both the architectural quality of Grainger's design and its presence within the surrounding townscape. The installation of the OLE portals on the viaduct would permanently alter the appearance of the structure, while also entailing localised permanent changes to the fabric of the structure to facilitate attaching of the portals to the external face of the viaduct. This would slightly reduce the significance which the Listed viaduct derives from its aesthetic value, and this impact would be limited. The architectural detail of its engineering would still be able to be appreciated, albeit the structure would incorporate more modern elements such as the OLE. Though the OLE portals would be attached to the external face of the structure, the design of the OLE brackets have avoided physical alterations to the string course which is a key decorative feature of the viaduct's original design, thus the notable detailing of Grainger's design would remain legible and the overall design language of the scale and form of the viaduct would still be understood. The majority of the historic fabric of the viaduct would remain unaltered.

4.1.3 The viaduct's architectural interest is further enhanced by its monumental presence which forms a recognisable element of Batley's townscape. The viaduct symbolises the economic prosperity of the town that occurred with the coming of the railway as well as evidencing the engineering achievement of the construction of the railway. The presence of the structure within the townscape retains its current and historic monumentality, experienced through views towards it and movement along and under it (see below, 4.1.5), and though the nature of its prominence would change with the addition of OLE portals, the understanding of the historic and architectural interest of the structure derived from this would be maintained.

4.1.4 As detailed above in paragraph 2.1.17, Union Mill (Batley) Viaduct (MDL 1/27) also derives considerable significance from its association with the historic railway, its development during the Heroic Age (1841-50) and the engineering of Thomas Grainger. The permanent changes to the historic fabric and appearance of the viaduct required for the proposed works would have a small impact on the extent to which the structure derives significance from its historical value. The alteration to its historic fabric and character is limited due to the sensitive placement of the OLE portals which aim to minimise impact on the structure's rhythm and the legibility of its historic form. It is recognised that the proposals to install OLE on the structure would represent one of the few alterations which the structure has undergone since its construction. However, the historical associative value that the structure derives from its associations with the Heroic Age (1841-50) of railway building, the engineering design of Thomas Grainger and the Leeds, Dewsbury & Manchester Railway route itself would all still be able to be understood.

4.1.5 Union Mill (Batley) Viaduct (MDL 1/27) derives significance from its setting, particularly through its prominence within the surrounding townscape, evidenced in views towards and from it, as discussed above in paragraph 2.1.21. The proposals would have some impact on this setting, with the changes in the appearance of the structure altering how it is experienced

in such views. However, views towards the viaduct have been subject to change over the years due to alterations in its surrounding area such as the removal of historic railway infrastructure (see paragraph 2.1.9) and later 20th and 21st century clearance and infill around the structure. The addition of OLE would act as part of the continued development of the viaduct's immediate surroundings and the way it's experienced in views. The OLE would also form a new element of such views that would enhance the structure's prominence, and the understanding of it as an operational element of the historic railway. Views from atop the structure offered to rail passengers would continue to define the experience of the structure and surrounding townscape, while the permeability of the structure would also not be altered. The historic connections between the viaduct and surrounding townscape, particularly the views afforded passengers towards the Station Road area of Batley (see below, 4.1.10) evidencing the development of the town during the mid-late 19th century, would remain legible, in spite of the visibility of the proposed OLE on the structure. Though the proposals would result in notable alterations to elements of the viaduct's setting, these would only slightly affect appreciation of it and its significance, and the extent to which the structure derives significance from its setting only slightly reduced.

4.1.6 The proposals would have only a slight impact on the significance that Union Mill (Batley) Viaduct (MDL 1/27) draws from its group value shared with other Grainger-designed structures along the historic Leeds, Dewsbury & Manchester Railway, as well as other contemporary viaducts along the wider Trans-Pennine Route. Though the proposed changes to the structure will alter its appearance, the similarities between the design language of those other viaducts designed by Thomas Grainger for the Leeds, Dewsbury & Manchester Railway (see above, paragraphs 2.1.23 and 2.1.24) would still be legible, and these would still be able to be understood as a group of structures originating from the same phase of railway development. It is noted that Listed Building Consent is also being sought for similar proposals to install OLE on Dewsbury Viaduct (MDL 1/19) (Grade II Listed, NHLE 1313659) and Churwell Viaduct (MDL 1/40) (Grade II Listed, NHLE 1451053); the design of these works has been developed to match that proposed for Union Mill (Batley) Viaduct (MDL 1/27), thereby ensuring the retention of similarities between the structure in spite of the proposed changes. Additionally, the architectural detailing which places Union Mill (Batley) Viaduct (MDL 1/27) in a wider group of Grainger-designed structures on the railway would be unchanged by the proposals and its contribution to this group of structures would also be able to be understood. Similarly, the commonalities between Union Mill (Batley) Viaduct (MDL 1/27) and other contemporary viaducts along the wider Trans-Pennine Route (such as those identified above in paragraphs 2.1.26 and 2.1.27) would also remain legible in spite of the proposed alterations[15]. The collective experience of the assets through their continued operational use would not be altered by the proposals. The extent to which Union Mill (Batley) Viaduct (MDL 1/27) derives its overall significance from the group value it draws from such relationships would be little reduced by the proposals.

Impact on other heritage assets

Listed Buildings

4.1.7 The proposals would not result in physical impacts to any other Listed Buildings.

4.1.8 The proposals would alter the appearance of Union Mill (Batley) Viaduct (MDL 1/27) in views between the structure and the group of Grade II Listed Buildings, nucleated around Station Road, particularly 32-40 Station Road (Grade II Listed, NHLE 1300286), The former Xclusiv nightclub adjoining Number 51 (Grade II Listed, NHLE 1134617) and 51 Station Road (Grade II Listed, NHLE 1134616). As discussed above in paragraph 2.2.3, these buildings form the crescent curve of Station Road opposite Batley Station, clearly visible from the viaduct, and

[15] A number of these viaducts will also be subject to change due to OLE as part of the wider TRU programme. The programme will aim to realise a common design approach to such proposals to ensure minimal impact on group value.

derive some significance from their setting, including this intervisibility, characterising the railway's approach to Batley. The proposed OLE on the structure would be visible from these Listed Buildings, altering the viaduct's appearance, however the legibility of the structure as part of the wider contemporary development of this area of the town during the mid-19th century would be retained. The view afforded passengers crossing the viaduct towards these buildings would also feature the proposed OLE structures, albeit this visibility would be fleeting given the kinetic nature of the view and the overall ability to understand and appreciate the significance of these Listed Buildings and the wider townscape in such views would not be degraded (see above,paragraph 2.2.3). Though the proposals would constitute a small-scale change to the setting of these Listed Buildings, this would not impact on the extent to which they derive their overall significance from their settings. There would be no impact on the significance of these Listed Buildings as a result of the proposals.

Conservation Areas

4.1.9 The proposals would not result in any physical changes to any buildings located within a Conservation Area.

4.1.10 The proposals would alter the appearance of Union Mill (Batley) Viaduct (MDL 1/27) in views from and towards the Station Road Batley Conservation Area. As discussed above in paragraphs 2.2.6 and 2.2.7, though the viaduct is located outside the boundary of the Conservation Area, the view towards the Conservation Area afforded passengers traveling over the viaduct is identified as a key view in appreciating the character and significance of the buildings and skyline around Station Road. The proposed OLE on the viaduct would be visible in such views between the viaduct and the Conservation Area. The nature of the OLE and its visibility in the views would vary, however, with the OLE portals introducing fleeting modern features into the kinetic views afforded passengers traveling along the viaduct, the view noted as being of particular importance to the character and special interest of the Conservation Area. Though the proposals would consequently constitute a small change within the setting of the Conservation Area, the overall character of this view in particular will be little degraded and, as such, the contribution of such a view to the overall significance of the Conservation Area will be retained. The character, appearance and special interest of the historic built environment around Station Road will still be able to be appreciated and understood. There will be no appreciable impact on the overall significance of the Conservation Area as a result of the proposals.

Non-Designated Heritage Assets

4.1.11 As discussed above in paragraph 2.2.10, there are two non-designated heritage assets which derive limited significance from their historic associative relationships with Union Mill (Batley) Viaduct (MDL 1/27): Batley Station (HER 8330) and a former railway goods shed to the north of the station (HER 7101). Though the proposals will alter the appearance of the viaduct, this will not reduce the extent to which the relationship between these assets contributes to their respective overall significance. The legibility of the group of assets as belonging to contemporary historic railway infrastructure will be maintained, as will the ability to understand the historical associations between the station, goods shed and Grade II Listed viaduct. There will be no impact on the significance of either of these non-designated heritage assets as a result of the proposals.

4.1.12 Though the West Yorkshire HER identifies a number of non-designated heritage assets located within the valley on either side of Union Mill (Batley) Viaduct (MDL 1/27) (see above, paragraph 2.2.9), there will be no impact on the significance of these assets as a result of the proposals. These non-designated assets derive very limited significance from relationships with the viaduct or their setting, and the installation of OLE on the structure will not alter these interrelationships.

4.1.13 The proposals will not result in any impact on the setting or physical remains of any other non-

designated assets.

4.2 Mitigation and compensation

4.2.1 Mitigation has been used in three separate ways: embedded mitigation; additional mitigation measures and compensation. These are briefly described below and have their basis in the hierarchy of mitigation as detailed in the Design Manual for Roads and Bridges LA 104 Environmental Assessment and Monitoring[16].

4.2.2 Embedded mitigation occurs within the design stage and is intended to include elements within the design that avoid or substantially reduce negative change to the significance of a historic asset. It can also include elements where loss of historic significance is compensated through high quality new design and use of materials. There may also be changes that enhance or improve the historic asset. Embedded mitigation is discussed as part of the design development (see above, Section 3.2).

4.2.3 Additional mitigation measures are applied post-design stage and are intended to include processes and activities that will reduce the level of negative change to the significance of an historic asset.

4.2.4 Compensation measures are applied post-design stage and recognise that the impacts cannot be removed or reduced. These measures are intended as a means of recording the negative change to the significance of an historic asset and enabling future dissemination of information about this change.

Mitigation

4.2.5 The design of the proposals has been shaped to incorporate elements which mitigate potential impacts to the Listed structure as far as possible. These elements have been developed in discussions with Kirklees Council and Historic England. Additional information with respect to these elements of design development is included above in Section 3.2.

4.2.6 The design development process has resulted in mitigation being embedded within the design proposals regarding a number of elements of the historic structure. The following design considerations have been taken into account in response to the proposed alterations to the Listed structure:

- The siting of OLE portals over piers of the viaduct and maximising the distance between portals to ensure the minimum number of portals on the structure;
- The minimising of the size of the portals themselves, to provide as lightweight a portal structure as practicable; and
- The design of the brackets to provide spacing between the portal arm and the string course of the viaduct, to avoid physical impacts on this architectural detail.

4.2.7 The design development process for the Scheme has identified further mitigation measures which aim to reduce potential impacts on the significance of heritage assets arising as a result of the Scheme. Network Rail commits to undertaking such additional mitigation measures as part of the implementation of the construction of the Scheme. In the case of Union Mill (Batley) Viaduct (MDL 1/27), the additional mitigation measures would comprise:

- Measures to minimise the visibility of construction activity, plant and hoardings, and to reduce dust and noise; and

[16] Design Manual for Roads and Bridges, LA 104, Sustainability & Environmental Appraisal, Environmental assessment and monitoring. Revision 1 (August 2020).

- Toolbox talks to disseminate best practice for reducing potential impacts in relation to construction activity associated with Union Mill (Batley) Viaduct (MDL 1/27), for example to help avoid accidental damage.

Recommended compensation

4.2.8 Requirements to undertake compensation in relation to historic buildings, including Listed Buildings, where the proposals of the Scheme would result in physical impacts to them, have been identified. These compensation measures would be secured as conditions of the Listed Building Consent and aim to offset some of the harm which may occur to the assets' significance as a result of the Scheme.

4.2.9 **Historic building recording**: A historic building recording of Union Mill (Batley) Viaduct (MDL 1/27) would be required prior to, or during, the construction phase of the Scheme, as agreed with the appropriate historic environment stakeholders. This would help to compensate the harm to significance resulting from the installation of OLE portals by providing opportunity for recording of the structure and furthering understanding of its development and value. The historic building recording would be undertaken to Level 1 in accordance with Historic England guidance[17], and would include a photographic record, focusing on the sections of the structure which require alteration as a result of the proposals.

4.3 Public benefit

4.3.1 The proposed alterations to install OLE over Union Mill (Batley) Viaduct (MDL 1/27) are required to realise the public benefits of the W4 Scheme between Dewsbury and Leeds.

4.3.2 The Scheme, as part of the wider TRU Programme, would play a critical role in improving connectivity through journey time, capacity and reliability improvements, enhancing some of Britain's busiest rail network. The purpose of the Scheme is to increase capacity and improve journey time and performance reliability of rail services on the Trans-Pennine Route between both Dewsbury and Leeds and Manchester, Leeds and York.

4.3.3 The Trans-Pennine Route is identified as a key transport corridor for providing connections between cities in the North of England so to support the delivery of economic growth and "levelling up" opportunities across the North of England. The Scheme is vital in supporting the North of England's long-term, low-carbon economic growth, and better-connecting people to jobs, services, education and leisure. The vital connection between effective transport systems and local business productivity and district prosperity as well as the full support of the Trans-Pennine upgrade is recognised in the Kirklees Local Plan 2019 Policy LP19 and the Local Plan Allocations and Designations document (TS7 Public Transport Infrastructure Schemes).

4.3.4 The proposals at Union Mill (Batley) Viaduct (MDL 1/27) are essential to achieving the overall benefits of the Scheme and wider TRU Programme, and without these changes the Scheme would be unable to go ahead.

4.3.5 There are economic and social benefits to be had from the improved Trans-Pennine Route proposals. These include reduction in journey times along this part of the Scheme with the aim of achieving 43-44 minutes between Manchester Victoria and Leeds. This will be partially facilitated by enabling line speeds of between 70 -100mph along the Scheme as well as through other projects on the Route. Electrification also assists with journey time and performance by allowing trains to accelerate faster, and brake more efficiently. The increase in capacity through more train services and longer trains will reduce congestion, increase passenger comfort and improve journey quality. Future passenger modelling has indicated

[17] Historic England, 2016. Understanding Historic Buildings: A Guide to Good Recording Practice.

that the numbers of people using the Trans-Pennine Route will increase considerably by the early 2040s. This would be partially achieved through the creation or enhancement of four tracking along other sections of the Route, allowing for express trains to by-pass slower trains and freight services. The Scheme helps to deliver capacity improvements to provide the capability to operate eight 'express services' and two 'local services' an hour, plus a freight path, on the Route. The increased movement of people and goods along this key part of the railway network that connects major cities, towns and transport hubs supports a more economic and socially viable transport solution. It forms part of the West Yorkshire Transport Strategy for harnessing economic prosperity through a better-connected transport network.

4.3.6 Though rail travel has been impacted by the COVID-19 pandemic, rail use in the north of England seems to have been sustained better than elsewhere in the UK. Over the longer term, once the immediate crisis has subsided, there is uncertainty regarding any impact on long-term travel demand, and within that, the demand for rail services. The latest Department for Transport (DfT) analysis of post-COVID rail usage scenarios suggests that even in a lower-demand case, demand is likely to have come back to at least the levels seen in 2018/19 by the end of this decade (and may have grown further). Moreover, it is known that, even at static 2018/19 levels of demand, the Scheme route has real and chronic problems that need early investment to rectify existing issues and secure the required improvements in services and performance.

4.3.7 As part of the Scheme, there are environmental and sustainable benefits that arise from the improvements to public transport services and the introduction of more environmentally viable energy solutions. The electrification of the line (through this part of the Scheme) is an investment in 'greener' energy technology meeting Network Rail's Decarbonisation Strategy and bolstering national targets for reducing harmful emissions that cause climate change, which are set out in Government legislation for achieving net zero carbon by 2050.

4.4 Assessment of Level of Harm

4.4.1 As discussed in section 4.1, there will be changes to the setting of the viaduct and small-scale physical alterations from the installation of OLE portals. In examining the level of harm from the W4 Scheme on the significance of Union Mill (Batley) Viaduct (MDL 1/27) it is considered that this would amount to less than substantial harm under NPPF (para 202). It is demonstrated that the impacts to significance of the viaduct is limited and that the installation of the OLE would enable the viaduct to continue in its optimum viable use as a railway structure carrying the Trans-Pennine Route. The retention of the overall significance of the viaduct, has, in part, been achieved through the embedded mitigation through design process, which has developed solutions that minimise impacts on the viaduct.

4.4.2 Section 4.3 summarises the economic, social and environmental benefits through delivering an improved rail network to meet public demand and better services, along with the transformation to electrified trains to meet decarbonisation strategies. These public benefits are extremely significant and when applied to the NPPF balance test, outweighing the less than substantial harm identified.

4.4.3 The Scheme proposals would preserve the significance of the viaduct, securing its future use as an historic component of the Trans-Pennine Route and appreciation of it as a nationally important listed historic structure. This accords with less than substantial harm in Kirklees Local Plan Policy LP35 (policy 1). It would also meet policy 3d in using new technology to combat the effects of climate change, which brings public benefits that, on balance, mitigate any harm to heritage assets.

4.4.4 It is concluded that the proposal would result in less than substantial harm in line with the NPPF (para 202) and meet the test of achieving public benefits which outweigh the harm to the significance of the viaduct, in line with Kirklees Council Local Plan Policy LP35.

5. CONCLUSION

5.1.1 Union Mill (Batley) Viaduct (MDL 1/27) is an element of the historic railway infrastructure of the Trans-Pennine Route, still forming part of the operational railway today. The Grade II Listed structure is significant as a largely unaltered example of a masonry viaduct, dating to the Heroic Age (1841-50) of railway building. The viaduct derives its significance from its historical association with this period of railway development and the engineering design of Thomas Grainger, as well as from the aesthetic value of its architectural quality as a large-scale piece of engineering which incorporates design elements lifting its aesthetic above the purely functional. It shares group value with other viaducts designed by Grainger along the historic Leeds, Dewsbury & Manchester Railway and other routes, as well as contemporary structures along the wider Trans-Pennine Route. Union Mill (Batley) Viaduct (MDL 1/27) also derives some significance from its setting, notably from the prominence of the structure within the surrounding historic townscape, evidenced in views towards and from the viaduct, particularly the intervisibility with the historic buildings around Station Road.

5.1.2 The proposed installation of OLE portals would have a limited effect on the significance of the Grade II Listed viaduct. Attaching the OLE portals to the external face of the viaduct would impact the significance derived from its aesthetic value, however the impact would be minor due to the sympathetic design and positioning of the OLE brackets and portals which would align with the piers and avoid key decorative features. This would result in the retention of the legibility of Grainger's design language as well as the viaduct's scale and form. Although the permanent changes to the, largely unaltered, viaduct would have a small impact on the significance derived from its historic value, the historical value which the listed structure derives from its associations with the Heroic Age (1841-50) of railway building, the engineering design of Thomas Grainger and with the Trans-Pennine Route itself would all still be understood. Though the proposals would result in notable alterations to elements of the viaduct's setting, these would only slightly affect appreciation of it and its significance. The historic connections between the viaduct and surrounding townscape, particularly the views afforded passengers towards the Station Road area of Batley evidencing the development of the town during the mid-late 19th century, would remain legible even with the introduction of OLE on the structure. Furthermore, the proposals would only have a slight impact on the significance derived from the structure's group value due to its continued legibility as a Grainger bridge and the retention of the elements that contribute to its group value with other Grainger bridges on the route. Similarly, the group value from which other similar structures on the railway derive significance will not be degraded by the proposals. Overall, it is considered that the impacts to significance would constitute less than substantial harm in respect of NPPF and Kirklees Local Plan Policy LP35.

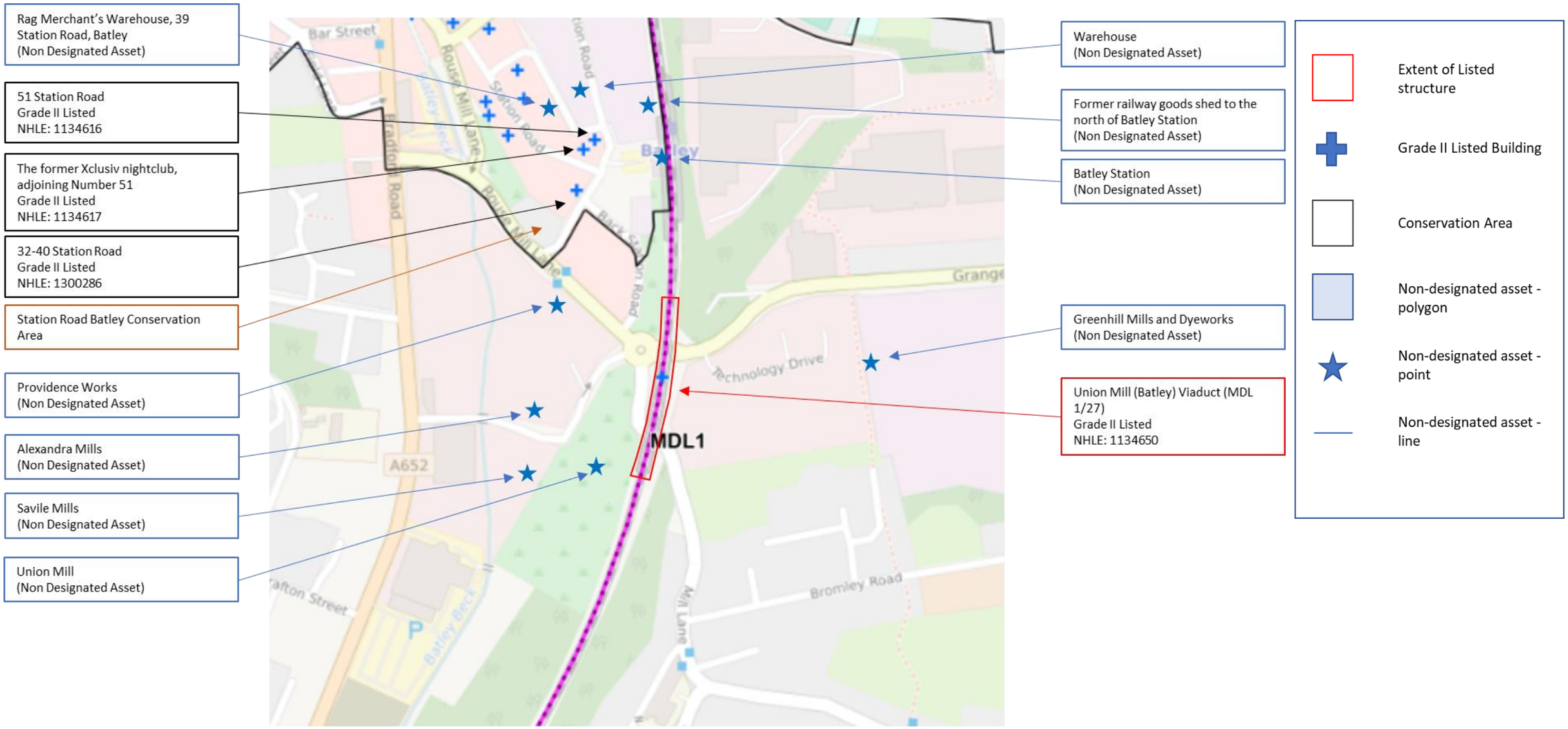
5.1.3 The proposals would result in no appreciable impacts on the significance of any other designated or non-designated heritage assets. Although the proposals would result in small-scale changes to the setting of nearby Listed Buildings and Station Road Batley Conservation Area, they would not have their setting appreciably degraded and their overall significance would not be affected. Similarly, the proposals would not reduce the extent to which nearby non-designated assets derive significance from their historic associative relationship with the viaduct, and there would be no impact on the significance of these assets as a result of the proposals.

5.1.4 Though the installation of OLE on Union Mill (Batley) Viaduct (MDL 1/27) would impact on its appearance, the proposals would result in only limited impact on the structure's overall significance. As such, the proposals would constitute less than substantial harm to the significance of the Listed structure, as defined under NPPF and Kirklees Local Plan Policy LP35. As an element of the wider Scheme of interventions, which will bring significant economic, environmental and social benefits across the north of England through the improvements to the rail line between Leeds and Manchester, the required work to the Grade II Listed viaduct is integral to the major public benefit realised by the overall TRU project, in

line with the Kirklees Local Plan Policy LP19. These public benefits delivered by the fulfilment of the objectives of the Scheme would outweigh the level of harm to the significance of the Listed Building.

5.1.5 The proposals therefore satisfy both national and local planning policy regarding the balance test of the impact of development on significance of heritage assets and their setting, and the public benefits to be realised.

APPENDIX A – LOCATION PLAN



APPENDIX B – HISTORIC ENGLAND LIST DESCRIPTION

Overview

Heritage Category: Listed Building

Grade: II

List Entry Number: 1134650

Date first listed: 13-Jan-1984

Statutory Address: RAILWAY VIADUCT, MILL LANE

Location

The building or site itself may lie within the boundary of more than one authority.

District: Kirklees (Metropolitan Authority)

Parish: Non Civil Parish

National Grid Reference: SE 24976 23586

Details

SE 22 SW BATLEY MB MILL LANE BATLEY

4/37 Railway Viaduct

II

Railway Viaduct on L & NWR line, opened 1848. Rock faced stone with dressed stone vaults. 16 arches on slender piers. Moulded impost band. Large moulded ashlar base to parapet.

On east side is adjoining later viaduct not included in the item.

Listing NGR: SE2497623586

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