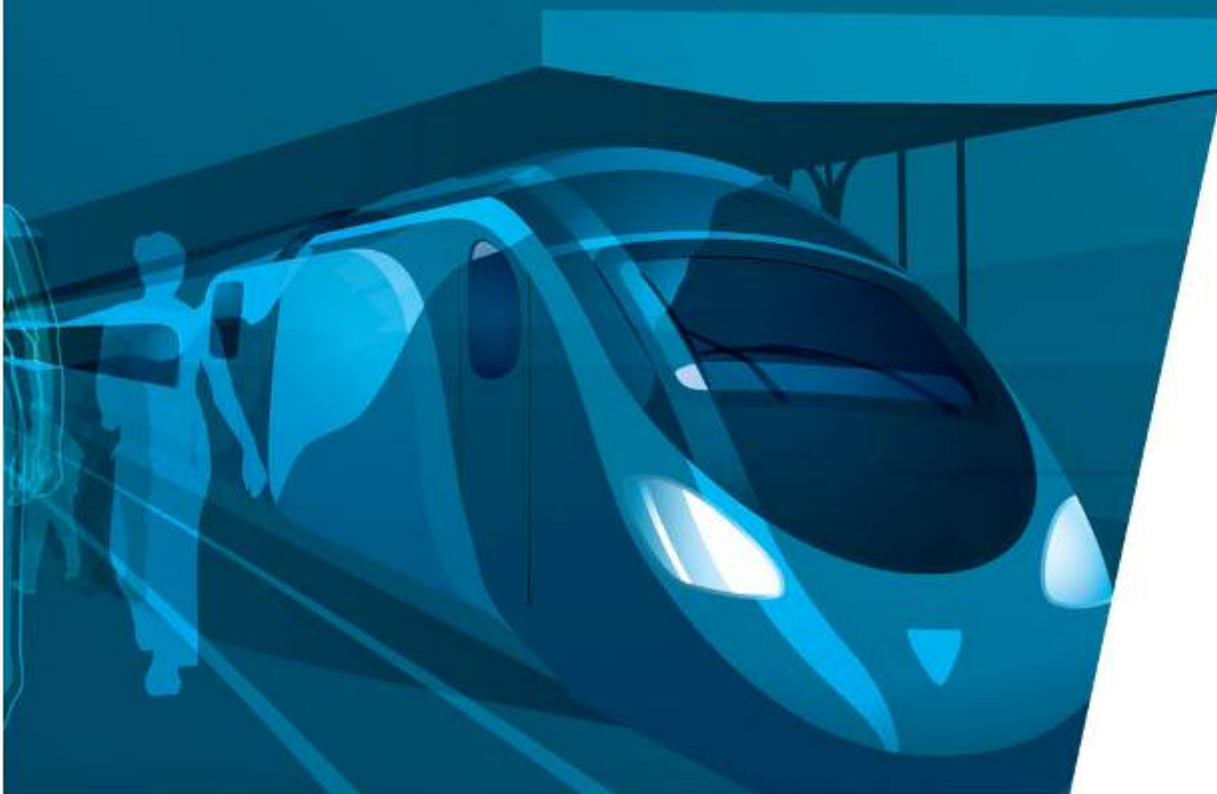


Tilehurst Road Overbridge *(BKE 3709)*

*Alterations to bridge parapets and carrying out of
anti-climb works.*

Design and Access Statement

Date: 10th August 2017



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1 Introduction

- 1.1 In accordance with National Planning Requirements this Design and Access Statement has been prepared by Network Rail in support of an application for Listed Building Consent for alterations to bridge parapets and carrying out of anti-climb works at Tilehurst Road, Overbridge which is a grade II listed structure.
- 1.2 This statement provides design information on the proposed alterations relating to amount, appearance, scale, layout/siting and access. This statement should be read in conjunction with the accompanying Heritage Statement prepared by Alan Baxter, Heritage Consultants for Network Rail in connection with this project. In addition to describing the proposed work and the bridge's historic significance, the Heritage Statement also contains detailed sections on relevant planning policy and an assessment of the heritage impact. It is pointed out that the bridge is not sited in a Conservation Area.
- 1.3 In terms of planning legislation Network Rail is able to make use of their permitted development rights under Class A, Part 18 of the Town and Country (Planning General Permitted Development) Order 2015 as the construction of this bridge was included in the Local Act of Parliament that authorised this section of the Great Western Railway. As required by Part 18 of the GDPO 2015 an application for the council's prior approval is also submitted alongside this LBC application.

2 Background Information

Site Description and Surrounding Area

- 2.1 Tilehurst Road Overbridge is on the Berkshire Line (BKE) at location 37m 09ch and supports a public highway that crosses the railway line. The bridge is a tall triple-arch overbridge with semi-elliptical spans, set in a cutting, erected c1845-47. The central arch is slightly taller and wider than the side arches. Originally constructed from handmade red bricks with some red engineering brick patching and replacements. The carriageway is 24 ft (7.3 m.) wide between parapets. A distinguishing feature is its tall tapering piers, each originally pierced by two tapered transverse arches, now infilled so that they read as blind arches. Abutments/wing walls are gently curved, the north-west abutment has a shallow engineering brick buttress of c. 1896. Each face of the bridge displays stepped string courses.
- 2.2 Parapets were raised in the twentieth century by four courses of engineering brick above the original stone coping (left in situ), with pitched tile coping topped by small iron anti-climbing spikes. The western (Up) ends of both parapet recently rebuilt in engineering brick, but apparently reusing the original coping in situ, with the north (low mileage) parapet stepping up towards a rectangular brick pier which forms part of the approach to the neighbouring modern steel footbridge.
- 2.3 The bridge is not visible in the wider landscape due to topography as it is located in a cutting. From the north it is also screened by an adjacent footbridge.
- 2.4 In general the bridge is a good example of a typical Brunel design adapted to the

circumstance of the site and has an imposing presence due to the height of the structure above rail level. The bridge is of medium historic and architectural interest but no archaeological. However, the adjoining steel footbridge is unsympathetic and detracts from the significance of this 1840s road bridge.

- 2.5 A more detailed account of the bridge's history is contained in the accompanying Heritage Statement

Need for proposed alterations

- 2.6 The Great Western mainline from London to Bristol and Cardiff/Swansea is to be electrified. The lines from Didcot to Oxford and Reading to Newbury will also be electrified in order to provide continuity of services. Electrification is the favoured method of propulsion for new railway projects because electric trains are cleaner, cheaper, quieter, faster to accelerate and lighter. The electrification programme will result in a significant reduction in carbon emissions and all in all will be a far more sustainable method of propulsion than the current diesel trains. Further information relating to environmental factors surrounding this project are contained in the Environmental Statement for the Reading Borough Council area, a copy of which has already been sent to the council electronically.
- 2.7 The new regulations require a minimum parapet height of 1.85m where the standing surface on the bridge is less than 2.25m from the nearest piece of electrified equipment. Although the distance between the standing surface and the nearest piece of electrified equipment at Tilehurst Road Overbridge is more than 2.25m, a parapet height of 1.85 is still necessary. This gauge height and the introduction of electrified equipment below means there is a perceived high suicide risk from this structure and therefore it has been decided to raise the parapets to 1.8m high in order to minimise this suicide risk. As the heights of both the existing parapets are only 1400-1500mm high, it will be necessary to raise both parapets to the required height. This height should extend 3m beyond either side of the live tracks below. It will also be necessary to carry out anti-climb work to the external elevations of the bridge.
- 2.8 The intrusive survey also highlighted a number of structural defects with the bridge. Most of these defects can be addressed by remedial repair work to the masonry carried out on a sympathetic like for like basis and therefore do not require LBC. Details of these repairs are included in the submitted drawings for sake of completeness.

Principle of Development

- 2.9 Although reconstruction of this structure is not required, works to bring the parapets up to the necessary standards are. Development on the railways must meet minimum conditions set out in the Railway Standards and Design Codes. These are more stringent than other building or safety regulations and therefore meet the required legal standards. As such, railway development is exempt from these considerations as they are incorporated into the Railway Standards.
- 2.10 This electrification scheme is of national significance and will benefit the local area with improved rail services and reduced journey times.

Pre-application Consultation

- 2.11 The issue of how parapets over listed bridges were to be raised was the subject of an initial pre-application submission made in 14/08/2014. This pre-application enquiry followed a workshop run by Network Rail in conjunction with their Heritage Consultants, Alan Baxter Associates, where a detailed justification for the alterations required was presented and possible design solutions for all listed bridges discussed.
- 2.12 In January 2017 a formal pre-application submission was made to the council for the design of parapet extension work proposed at Bath Road A4 Overbridge which is located approximately 400m to the south. It is considered that the council's response to the pre-app at Bath Road is equally relevant to Tilehurst Road as Bath Road is also a Brunel designed bridge of similar age and very similar appearance to Tilehurst Road. Also the design approach for raising the parapet is the same for the two bridges. In their response the council considered the proposed design was acceptable providing the works were 'reversible' and minimised impact on historic fabric. In this context the council did have the following reservations:

The proposed 70mm cores into the masonry are not considered to be acceptable as they would result in direct loss of fabric and over time would be likely to introduce moisture and also cracking from differential expansion of the metal and masonry. It was therefore recommended that fixing a similar barrier in a way which does not involve drilling into the masonry, other than for reversible fixings into the mortar joints, should be explored. The idea of a solution that sat above the parapet and clamped onto either side of the parapet wall was suggested. Additional support could possibly be provided by legs that continued down to the ledge on the track side of the bridge and to the bridge deck on the other.

- 1. Further detail on the finish of the perforated plate was requested with the advice that a powder coated finish should be avoided.*

- 2.13 Following the pre-application submission the proposed design was amended to reflect the advice in point 1 above. With regard to point 2 the perforated plates will be painted to a colour to be agreed with the local authority

Planning Policy Context

- 2.14 As the bridge is a grade II listed structure both national and local planning policies relating to design and the conservation of historic assets are relevant. Reference is therefore made to section 2 of the Heritage Statement which provides a detailed account of relevant national and local planning policies. As this proposal relates to railway infrastructure transport and sustainable policies are also relevant, however, these are addressed in the application for the council's Prior Approval under Part 18 of the GDPO 2015.

3 Proposed Development

3.1 The proposed work to this bridge involves the following elements:

- I. Outside of the 'Danger Zone' (3m either side of a railway line), the parapet wall will be extended to a height of 1250mm with high steel panels. Inside of the 'Danger Zone', the steel sheets will continue, but with steel perforated plates above the existing parapet walls raising to 1850mm. The plates will be supported on a steel framework which in turn is supported on steel legs extending from the bridge deck on the on the internal elevation and a ledge on the external elevation. An inclined mesh panel is positioned at either end to prevent people climbing around rear of the barrier. The parapet extension will continue for 3m either side of the track below and will be painted in a colour to suit local authority requirements.
- II. Carryout anti-climb work which will consist of installing 3m lengths of chamfered block/brickwork to the double string courses on either side of bridge immediately below each end of the railings.
- III. Installation of warning signs to internal (public side) bridge elevations.

4 Assessment of Design and Access issues

Design Issues

Amount/Scale

- 4.1 The parapet walls will be raised as per above to achieve the required height of 1.85m. This extension will be restricted to the central section of the bridge which spans the tracks plus a further 3m either side i.e. the raised section will 13.5m out of a total parapet length of approximately 63.7m. It is considered that this alteration when compared with the overall scale of the existing structure is modest. The anti-climb work to be added on both elevations is also minor in scale being just one course high and each length only 3m long. Overall the alterations will be subservient to both the existing bridge and the dominant linear form of the railway.

Appearance

- 4.2 The parapet walls will be extended with steel perforated plates above the existing parapet walls. In line with the comments made by the council at pre-application stage the plates will be supported on a steel framework which in turn is supported on steel legs extending from the bridge deck on the on the internal elevation and a ledge on the external elevation. This method of support will avoid the need to drill into the top of the parapet to secure fixings thereby preserving the bridge's historic fabric. The supporting legs will also secured to side

of parapet by drilling into mortar joints rather than into bricks. An inclined mesh panel is positioned at either end to prevent people climbing around rear of the barrier.

- 4.3 The use of steel for the perforated plates and supporting legs is a traditional material in a railway setting and will be finished to a colour to be agreed with the local planning authority. The parapet will also be legible as a later but distinct minor addition to the original Brunel structure. It is therefore considered aesthetically appropriate for use on this heritage asset.
- 4.4 The anti-climb work will be carried out in chamfered bricks to match existing brickwork. These alterations will have minimal impact on the bridge's appearance.

Siting/layout

- 4.5 This application relates to increasing the height of the parapets, anti-climb and repairs works to an existing structure which carries a right of way over the railway line. Therefore siting and layout are fixed by the parameters of the existing bridge and an alternative location for these works would not be possible.

Access Issues

- 4.6 The proposed bridge alterations will ensure that users of this bridge will continue to have safe access following electrification and minimize suicide risk. In a wider context the alterations form an essential part of the electrification programme the access benefits of which are substantial as electrification of this line will improve access to the surrounding area from other towns and regions on the rail network and provide a strategic enhancement of the existing infrastructure. Electrification will also introduce trains which are less environmentally damaging.

5 Conclusion

- 5.1 Electrification is a project of national significance. These specific works are being undertaken to reduce suicide risk by increasing parapet heights and to deter people from climbing along the external faces of the bridge to reach the electric wires. The works are therefore essential for the electrification of the railway line. The opportunity will also be taken to carry out structural repairs which will also be sympathetic to the bridge's appearance and will ensure the long term future of this structure. For the reasons set out in this statement and the accompanying Heritage Statement, the design of the proposed alterations will not detract from the historic character of this structure or injure the amenities of the area. Importantly, this work will also facilitate significant improvements to rail services which will have substantial public benefits. Consequently, this proposal accords with both national and local planning policies.

