

# Kings Weston Footbridge Design and Access Statement

## Planning and Listed Building Application

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Figure 1: Document properties

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## Introduction

The purpose of this planning and listed building application is to secure the repair and reinstatement of the iron footbridge at Kings Weston, and to remove the future risk of vehicle traffic damage to the listed structure.

The Grade II listed footbridge crosses the B4054 Kings Weston Road cutting to provide a footpath link between the heritage estates of Kings Weston and Blaise.



In November 2015 the bridge was struck and damaged by a HGV lorry. It has since been fenced off and out of use for users of both estates.

This design and access statement sets out a proposal to repair and reinstate the bridge. Due to the risk of repeated collision damage in the future it is proposed to raise the height of the bridge by 1m during reinstatement.

The Kings Weston Footbridge is a Grade 2 listed structure from circa 1820. The bridge is located at 354458E, 177255N and spans over Kings Weston Road (B4057), northwest of Bristol and south east of Avonmouth. It is an 8.0m long cast iron arch bridge and is intended for



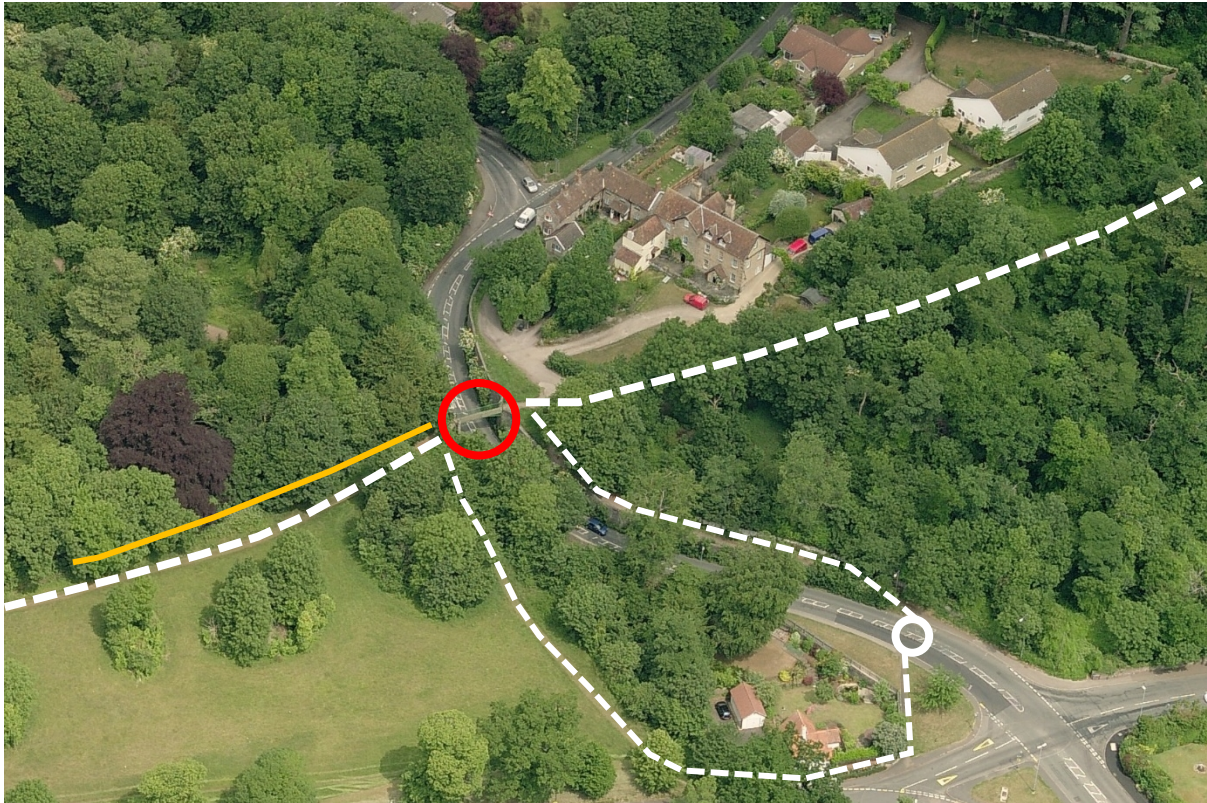
pedestrian use. In 2015 the bridge was struck by an HGV, resulting in a section of the bottom rib on the north-east side being damaged. The bridge was closed to the public and a scaffold was erected to support the bridge. In 2017, BCC commissioned CH2M to conduct a Principal Inspection Report and identify a solution to prevent future structure strikes. In April 2018, the bridge was again struck by an HGV, destroying both spandrels on the western side of the bridge and detaching the south-eastern spandrel from the abutment.

## Existing Context



Aerial photograph showing the location of the bridge (highlighted circle) within the wider setting of Kingsweston Estate





Aerial photograph showing the bridge (red circle), paths (white dashed lines) and listed terrace wall (yellow line).

The bridge is a Grade II listed structure, located within the Grade II registered park of Kings Weston House, and the Kingsweston and Trym Valley Conservation Area. Immediately adjacent to the west end of the bridge is the grade II listed 18<sup>th</sup> century viewing terrace and retaining wall.

The bridge forms part of the designated Public Right of Way between Shirehampton Road car park and the boundary of the Blaise Castle Estate. The footpaths on the west side of the bridge are informal unmade paths running through meadow grassland, one of which descends directly down to Shirehampton Road and an alternative dropped-kerb informal road crossing.

On the eastern side the footpath follows a stone track east past the listed Inn Cottages before climbing to the summit of Kingsweston Hill. A tarmac path follows the road and descends to meet the dropped kerb road crossing on Kings Weston Road.

## The Proposal

The damaged bridge will be dismantled, in accordance with the provisional method statement, to enable repair off-site. Following conservation repairs the bridge will be reassembled on site, in the same location, but raised at a height of 1m above its current elevation.

### ADD HEADROOM.

New additions will include stone steps constructed on both sides of the bridge to provide pedestrian access. These will be faced in coursed pennant stone matching the adjacent parapet walls, with pennant stone treads. New high-quality handrail railings will be mounted at each side for safety. These will be painted a dark grey colour to appear distinct and secondary to the green coloured iron bridge as the principal historic asset.

The new abutment foundations required to support the bridge will be set behind the face of the road cutting, and faced with coursed, hewn pennant stone matching the adjacent wall facings within the road cutting.

The mature yew tree located on the 18<sup>th</sup> century terrace wall at the west end of the bridge will be protected during the works and crown lifted in accordance with the Arboricultural Impact Assessment.





Above: View of existing bridge prior to safety scaffolding



Above: Photomontage view of bridge raised by 1m with new guard railings (dark grey) and steps at eastern and western ends.





Above: View of existing bridge prior to safety scaffolding



Above: Photomontage view west towards the raised bridge showing the proposed steps and railings.

## Issues of Harm

The significance of the bridge within its setting and the wider Kings Weston Estate landscape has been assessed – REF HERITAGE STATEMENT

As a Grade II listed structure, the dismantling and reinstatement of the bridge at 1m above its existing elevation, as proposed, inevitably represents a degree of harm; both to historic fabric and the presentation of the bridge within its setting.

However, by following the conservation methodology for dismantling and repair, and ensuring that the new steps and railings are of a high-quality design using sympathetic materials, the effect can be minimised to less than substantial harm.

In weighing this less than substantial harm against the public benefits, the proposal has been carefully designed, both to secure the long-term protection of the bridge against future vehicle damage, and to ensure it remains in use for the public for many more decades into the future.

ADD Undertaking/ s106 agreement to ensure reinstatement of bridge following dismantling.

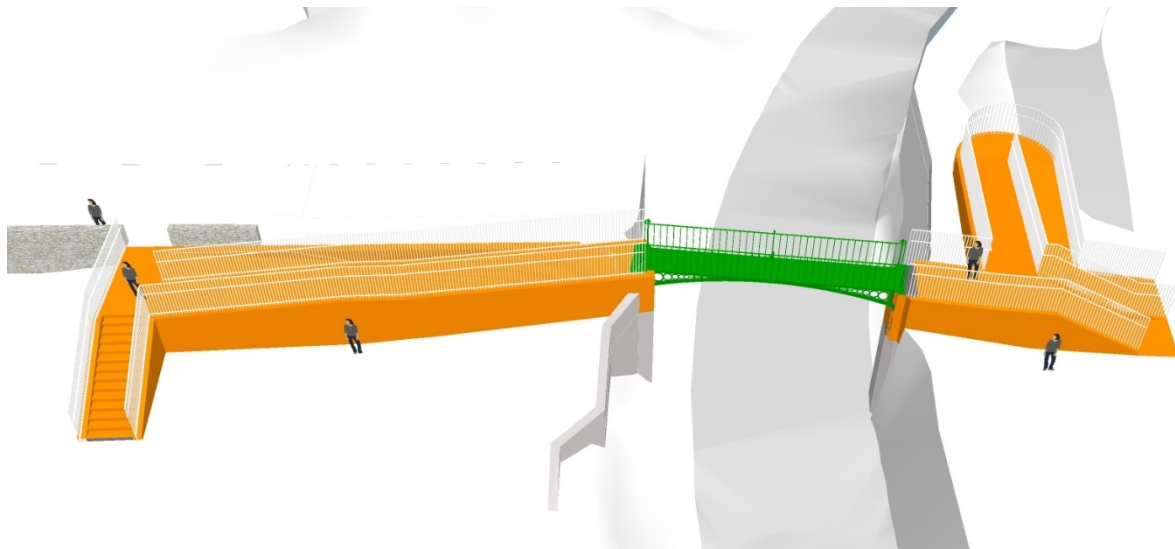
## Issues of Access

At its original elevation the bridge offers level access on both sides but, as a connecting point between the Kingsweston and Blaise estates, access to the bridge location is significantly limited by the ridgeline topography, the unmade, rough path surfaces, and the significant distances from the visitor car parks at Shirehampton Road (460m), Kingsweston House (305m) and Blaise (2150m). However, both heritage estates are large-scale landscapes and offer wider paths networks for all users to experience and enjoy.

During stakeholder consultation with Bristol Physical Access Chain, the designers were encouraged to look at the feasibility of constructing access ramps at either end of the bridge. Due to the falling ground levels leading away from the bridge, any ramps at minimum acceptable gradients of 1:12 would require a substantial ramp structure some 30m in length on the western side.



Given the issues of cost, construction and substantial harm to both the registered landscape and the listed 18<sup>th</sup> century terrace, and when there is limited accessibility to the bridge location within the surrounding landscape, such ramp structures do not represent reasonable adjustments to secure level access.



Above: Schematic aerial image showing bridge with extent of ramp structures required to facilitate level access

## Alternatives Design Options Considered

In developing this proposal to repair and raise the bridge, the following options have been considered but are not considered viable solutions for the following reasons:

	Alternative options considered	Reason discounted
1.	Permanent removal of the bridge	The bridge is a listed structure with considerable heritage significance and public interest in its reinstatement. Removal would extinguish an existing PROW.
2.	Reinstate repaired bridge at existing height. Narrow carriageway to direct vehicles under the centre of the bridge arch.	Vulnerability to future damage.

3.	Reinstate repaired bridge at existing height. Lower the carriageway to increase the headroom.	Cost
4.	Reinstate repaired bridge at existing height. Install highway warning signs in advance of the bridge.	Vulnerability to future damage.
5.	Reinstate repaired bridge at existing height. Install vehicle height restrictors in advance of the bridge.	Vulnerability to future damage
6.	Reinstate repaired bridge at existing height Installed elevated crash protection adjacent to the bridge.	Harm
7.	Reinstate repaired bridge at 1m higher with ramped access to both sides.	Cost and harm