

## HRE major work review template

### Proforma for SAF consideration



Purpose – to document the results of the lens review undertaken for the identified structure and, based on this, offer recommendations for the proposed engineering solution for the structure.

## The Structure

This section outlines the background to the structure and the issues identified with it.

Structure name	Asset ID	NH Priority Rank
Paisley Road West, Glasgow	GTB/78	P3

Structure Type	Grid Reference	Date of last assessment	Date of construction	Date of decommission
Overbridge	NS575646	October 2003	c. 1909	c. 1978

### Brief description of structure

Paisley Road West Railway Bridge carries Paisley Road West (comprising of a single two-way carriageway 11.07 metres wide and two number 3.61 metres wide foot ways) over the line of the former General Terminus Branch. The railway has been disused since the 1970s; the tracks have been removed and the track beds on both sides of the bridge have been redeveloped. The bridge is located immediately east of Seaward Street on the south-side of Glasgow in Kingston.

The structure was designed for the Caledonian Railway Company. Construction took place in 1909.

The four-span bridge comprises of 12 no. rivetted steel plate deck girders encased in concrete with a concrete slab at bottom flange level. The four service bays are located, two below each footway and seven are under the carriageway. The service bays have been formed using transverse steel joists encased within mass concrete slabs, spanning between the plate girders. The deck has zero skew and has three spans of 7.6 metres and one span varying from 7.6 metres to 5.0 metres. Masonry stone abutments and intermediate piers support the deck.

The structure has been partially stowed (under the southern footway) and fill has been placed in the three easternmost spans up to a height of 2 metres below the soffit; the highway loading is still carried by the bridge superstructure. The fourth (westernmost) span is no longer visible having been infilled for the construction of the embankment for Mavis Bank Gardens.

### Identified issues with structure

Detailed examination in October 2020 confirmed that the main girders and concrete deck are in 'Poor' condition.

However, the bridge's assessed capacity in 2003 was sufficient for 40 Tonnes assessment live loading on the carriageway and the 40 Tonne Accidental Loading on the footway. To be clear however, capacity is not the driver behind this scheme. Instead, it is being driven by the presence of anti-social behaviour and the need for alignment with the landowners to enable work to occur – which is in place at this time.

The bridge was originally constructed as a four-span structure. The western span has been completely infilled and the remaining 3 spans infilled to a height of 2m below the soffit. Although secured by palisade fencing the remaining 3 spans are frequently broken in to, not being overlooked they provide opportunities for anti-social behaviour.

The needles and waste left in the spans presents a risk to our examiners and owners of the property to the north of the structure.

A site investigation has been completed at the site to determine the competency of the existing material below the bridge and to provide parameters for earthworks design and slope stability.

By way of history, when the structure was originally transferred from British Rail to the Scottish Development Agency (SDA), a condition of that transfer was that it be removed or infilled to the satisfaction of Glasgow CC. We do not have anything on file to explain why only one span was totally infilled and three left partially infilled and it was before NH became asset managers for HRE. The bridge and land beneath was sold to the SDA and when the SDA was wound up the asset initially transferred to Scottish Enterprise. But legal opinion later determined that as Scottish Enterprise is not a statutory body it couldn't be responsible for a highway bridge and the bridge reverted back to BRBR – but the land beneath did not. HRE has no reserved rights to infill this structure, it can only be achieved with the land owner's agreement, which we currently have.

The land to the south has been totally filled and there is an office block on it. To the north the formation was partially filled to create the embankment supporting a new road (Mavis Bank Gardens). The owners to the north, Festival Park, are currently very supportive of infilling because it removes the voids and an opportunity for anti-social behaviour.

## Lens Review

This section documents the results of the lens review undertaken for the identified structure

 <p><b>New operational rail</b></p>	<p>Are there any identified linkages with English, Welsh or Scottish government new rail restoration programmes?</p> <p>None – the land to the north and south has been completely redeveloped. The former railway cuttings filled, one span filled and the remaining three partially stowed.</p>
 <p><b>Heritage Rail</b></p>	<p>Are there any identified linkages with heritage rail restoration programmes?</p> <p>None.</p>
 <p><b>Active Travel</b></p>	<p>Does the structure have potential to be repurposed for active travel use?</p> <p>Sustrans' report confirmed that "<i>Probably not useful for NCN, but may be useful for Glasgow cycle network? Given urban nature, would suggest retaining for now until we receive a response from Glasgow City Council.</i>"</p> <p>The report's recommendation for GTB/78 is "<i>Retain structure for potential future active travel use.</i>"</p> <p>Active travel use is only possible on the bridge rather than under it. None of the options presented within this paper would impact that.</p> <p>Structure has known possible future use within a 20-year time span - Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
 <p><b>Environment and Ecology</b></p>	<p>Does the structure hold significant value in ecological terms?</p> <p>Part of Site of Special Scientific Interest – Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Within a conservation area - Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Within or near to a locally designated wildlife site - Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>The following non-statutory sites are located within 2km of the structure:</p> <ul style="list-style-type: none"> <li>• River Clyde Corridor of Wildlife and Landscape Importance (CWLI) and Site of Importance for Nature Conservation (SINC) – 0.21km north</li> <li>• Festival Park Local Site of Importance for Nature Conservation (LSINC) – 0.73km west</li> <li>• River Kelvin CWLI and SINC - 1.71km northwest</li> <li>• The Cunyon LSINC – 1.89km southwest</li> <li>• There are two Inventory of Gardens &amp; Designed Landscapes sites, closest of which is 1.49km north, and 30 Sites of Special Landscape Importance, closest of which is 1.66km southeast.</li> </ul> <p>Ancient woodland within 2km of the structure:</p> <ul style="list-style-type: none"> <li>• Kelvingrove Park NW: Kelvingrove Woodland – 1.79km northwest, semi-natural ancient woodland</li> </ul> <p>Within or near to a local network recovery site - Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Any priority habitats in the vicinity - Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Any European Protected Species present - Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Preliminary ecological appraisal outcomes – Potential bat roosts have been identified in the structure and further surveys are planned for January and February, also passive bat detectors will be deployed in each span between December and the end of February. On completion of all the ecology surveys</p>

	appropriate habitat mitigation will be agreed with NatureScot and the appropriate licences obtained on completion of the planning process.
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 <p><b>Heritage</b></p>	<p>Does the structure hold significant value in heritage terms?</p> <p>Structure has significant Engineering / Architectural / historic merit - Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Listed – Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Locally listed - Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Has the Historic Environment Record been consulted - Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Rapid Heritage Assessment conducted - Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Rapid Heritage Assessment outcomes –</p> <p>The Overall Heritage Value of the bridge is <b>Negligible to Low</b>.</p> <p>The bridge is recorded by the WoSAS HER as a non-designated heritage asset. While the bridge retains some limited historical and evidential interest as part of the infrastructure facilitating the rail lines to the former General Terminus Quay, it lacks any significant architectural or engineering merit to warrant any formal heritage designation.</p> <p>A sufficient photographic record of the bridge exists from the historic inspection reports to negate the need for any heritage mitigation.</p> <p>This photographic record could be shared with the WoSAS HER if necessary.</p>
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## Other factors and considerations

This section documents any additional factors or considerations that have been taken into account as part of the review for the identified structure

Are there any other factors that affect the structure or the proposals for it?
No

Have transfer opportunities been considered? If yes, with who and why discounted
<p>The structure has been discussed with Glasgow City Council's Neighbourhoods, Regeneration and Sustainability Department. The Council isn't interested in taking ownership of a structure with no opportunity for reuse and raised a previous agreement to infill it.</p> <p>Has the structure been offered to the local authority? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>Is there another suitable owner for the structure? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>

Is the structure protected under any Local Planning policies?
No

Any significant Stakeholder comments	
<b>Local Planning Authority</b>	The structure hasn't been raised with the City Council's Planning Department though a formal application would be made
<b>Local Highways Authority</b>	Glasgow City Council's Neighbourhoods, Regeneration and Sustainability Department (includes Technical Services) offered no objections to the proposal to infill the remaining voids beneath the bridge deck.
<b>Sub-national Transport Body</b>	Not contacted.
<b>Community</b>	The owners of the Festival Park, the landowner immediately north of the structure, are supportive of the scheme as it will reduce the opportunity for anti-social behaviour on their land.
<b>Other interested parties e.g. MP, Bat Group, local active travel groups, heritage groups etc</b>	None identified.

## Engineering Proposals

Based on the review work conducted, this section documents proposals for engineering solutions for the structure and highlights the recommended solution by HRE Engineers

Sustainable management considerations	
Structure forms a current transport link	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Structural deterioration issues	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Health, safety and/or environmental concerns	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Engineering options	Pro's	Con's	Estimated cost of remedy
Do Nothing	No cost	The bridge's visible current condition is <i>Poor</i> and it will continue to deteriorate without intervention.	£0
Concrete repairs to encased girders and deck.  Install full height security fences.	Preserves the current capacity of the bridge and will retard further deterioration.	Does not deal with the anti-social behaviour and the ongoing cost of clearing sharps from the voids.  Leaves a residual risk for examiners entering the spans from litter, hypodermics, and other waste.  Future intervention will be required to maintain the girders and concrete encasement.	£300k*
Complete infill the three remaining voids.	Removes the need to examine the structure and the long-term risk of its unknown condition and capacity.  Removes the risk of continued deterioration of the concrete encasement to the girders.  Negligible future or whole life cost issues.  Works can be completed without significant disruption to traffic using the bridge.  Retains the full width of the bridge deck for mixed road and active travel.	Ongoing reduced maintenance liability for embankment and parapets.	£260k*

*\*Prices are intended as rough estimates only*

Responsible NH Engineer	Colin McNicol
Date of proforma completion	09/01/23

**Map and photos of site:**

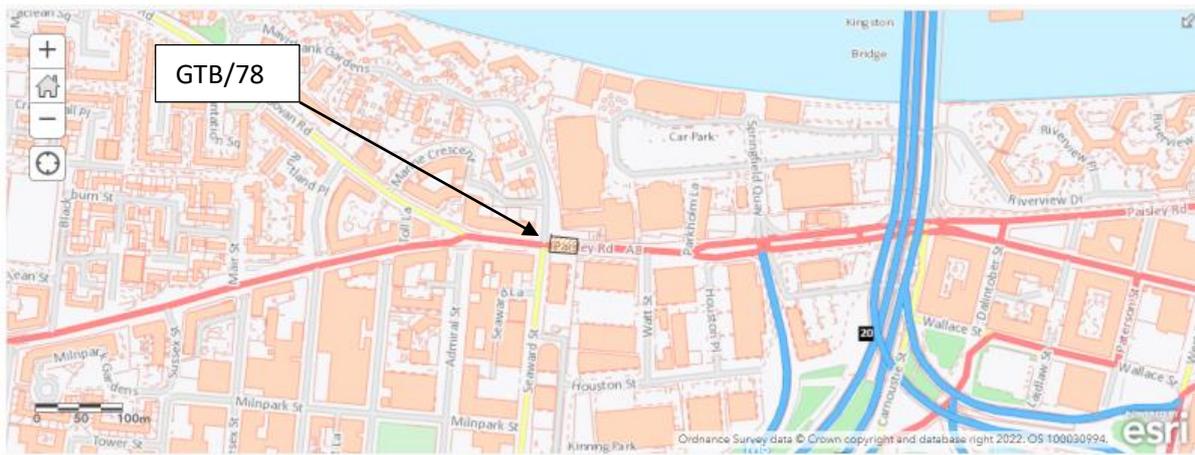


Figure 1 – GTB/78 - General Location

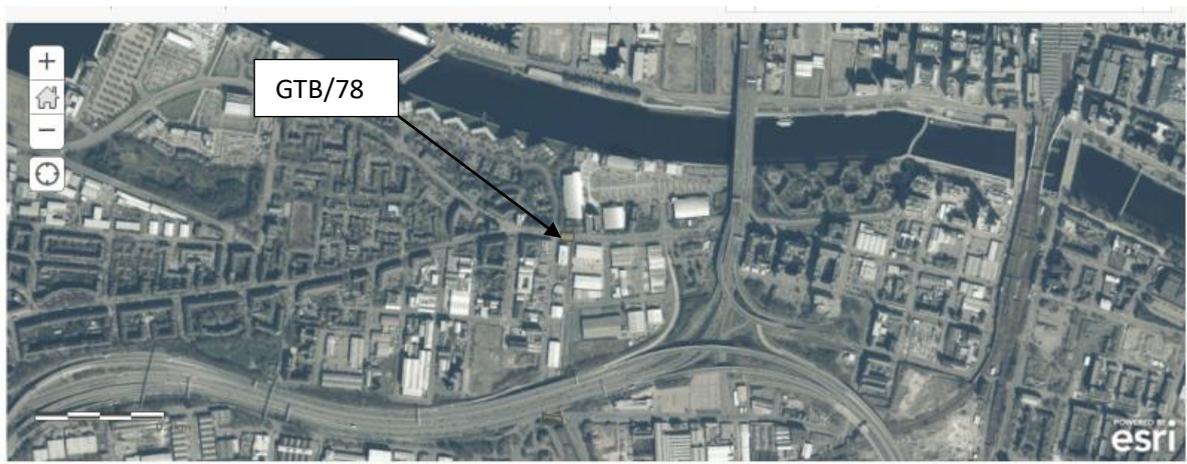


Figure 2 – GTB/78 – Location, Paisley Road West



Figure 3 – GTB/78 – Location, Paisley Road West



Figure 4 – North elevation



Figure 5 – North Parapet



*Figure 6 – South parapet – demolished. Cutting filled and redeveloped*



*Figure 7 – The top of the western embankment of the former trackbed comprises amenity grassland with a line of mature sycamore trees*



*Figure 8 – Typical defects span 1*



Figure 9 – Typical spalling to encased girder – span 3



Figure 10 -Litter and waste left in span 1.



Figure 11 -Litter and waste left in span 3.



Figure 12 -Litter and waste left in span 1.

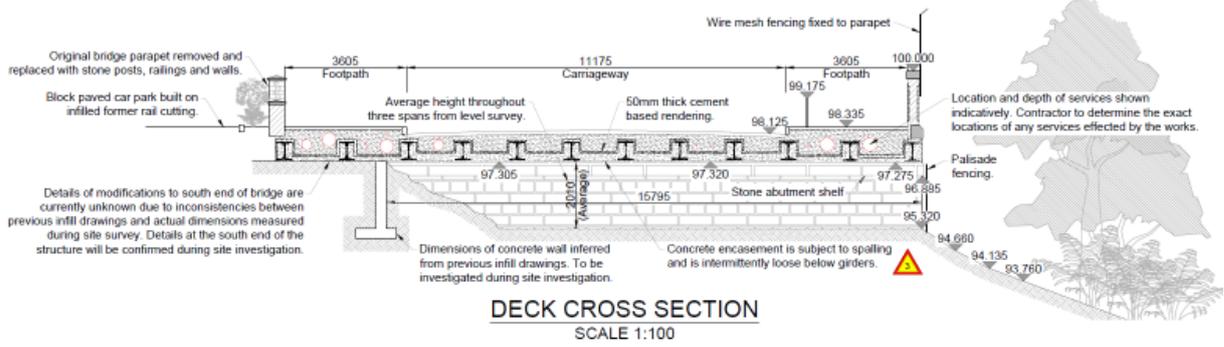


Figure 13 -Existing deck cross section (extract from Drg. B38380DE-DH-0001).