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ENVIRONMENT
SCOTLAND

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ALBA

Property in Care (PIC) ID: PIC327

Designations: Listed Building (LB1872 Category A)

Taken into State care: 1996 (Ownership)

Last reviewed: 2004

STATEMENT OF SIGNIFICANCE

BRIDGE OF OICH SUSPENSION BRIDGE



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BRIDGE OF OICH SUSPENSION BRIDGE

BRIEF DESCRIPTION

The monument comprises a mid-19th-century suspension bridge crossing the River Oich at Aberchalder, together with a causeway or embankment leading south to the site of a swing bridge, which crossed the Caledonian Canal. The bridge is situated between Fort Augustus and Fort William, that is just to the south-west of Loch Ness and towards the west end of the Great Glen. The bridge, which was designed to take vehicular traffic, was bypassed in 1932 and brought into State care in May 1996.

The bridge is 46m long and comprises three main parts: arched granite pylons set on granite piers with earth embankments; a slender wrought iron structure, which takes support over the pylons and is anchored into the embankments behind; and a timber deck. The main chains supporting the bridge are formed of iron links approximately 1m in length. At each junction between the links, the two outermost bars are taken down as wires to support the bridge deck, and so the number of separate bars in the link reduces by one. The battered pylons have arches with pediments above and are constructed of rusticated stonework, each standing on the banks of the river. The granite used for these was probably surplus from the construction of the Caledonian Canal

On the south side, a causeway leads around in a shallow curve and the road was taken across the canal. This was probably constructed from redeposited material originally derived from the cutting of the canal around 1815.

CHARACTER OF THE MONUMENT

Historical Overview

- The bridge, which took five years to complete, was constructed after its predecessor was destroyed by floods in spring 1849. At the same time the adjacent Caledonian Canal was also breached.
- Until the 1830s there were few roads in the Highlands. This changed with the building of an improved and extended road network (previously largely limited to tracks and 18th-century military roads), and the construction of the Caledonian Canal by Thomas Telford. The Canal enabled maritime traffic to use the Great Glen rather than travel all the way around northern Scotland. A swing bridge allowed road traffic to cross the Canal, and the adjacent Bridge of Oich crossed the nearby river.
- Its designer was James Dredge, a brewer-turned-engineer from Bath.
- In 1932 the Bridge of Oich and nearby swing-bridge were both closed because the increase in traffic required larger bridges, themselves recently replaced.
- Historic Scotland purchased the bridge in 1996 and opened it to the public in 1997.

Archaeological Overview

- The only archaeological work to take place has been monitoring of ground disturbance during renovation works in the 1990s. Some evidence was found for different road surfaces.

Artistic/Architectural Overview

- Well-preserved example of Victorian suspension road bridge construction in the period c. 1820-70 (earlier bridges just for pedestrian use).
- Broadly speaking, there are two groups of early suspension bridges in Scotland, those designed by Captain Samuel Brown and those designed by James Dredge. This design uses Dredge's patented 'taper principle', which involved the use of the cantilever principle and a diminishing structural arrangement together with the use of suspension rods at an incline. The bridge is in effect two cantilevers, which are joined in the middle. Although resembling a suspension bridge, these advanced design solutions produced a structure that was far more efficient (more stable) and less expensive to construct (because it was lighter).
- The design of the bridge shows a deep understanding of the structural properties of the materials used. The primary structure is constructed from a kit of repeating iron parts utilising both cast and wrought iron, to their particular structural strengths. The links of the chain are in tension so they are made of wrought iron which is good in tension but weak in compression. The fixings onto which the compressive loads of the bridge are taken are in cast iron which is good in compression but weak in tension.
- Dredge's bridges were built in India and Jamaica (none survives in these ex-colonies). The bridge is one of only seven still standing of the 30 built by Dredge in the British Isles (2 in England, 1 in Wales, 3 in Northern Ireland) and recorded by the Institution of Civil Engineers. The same patent can be seen in two bridges over the River Ness that were destroyed in 1987-8; a mis-shapen remnant of one of them is now propped up in an adjacent park.

Social Overview

- Part of the network of roads that opened up the Highlands for development, subsequently becoming an estate bridge.
- Not formally assessed.

Spiritual Overview

- Not formally assessed.

Aesthetic Overview

- The bridge is a particularly elegant example of Victorian bridge engineering.
- Having crossed the bridge from the south, the visitor encounters locked gates to a private estate. Little sense remains of the original road and where it

might have led to, although it is possible to see over the modern gate to where the road turns.

What are the major gaps in understanding of the property?

- While the patent belongs to James Dredge, was he actually involved in the construction of this particular bridge? If not, who?
 - What form did the predecessor bridge(s) take?
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ASSESSMENT OF SIGNIFICANCE

Key points

- Well-preserved example of early Victorian suspension bridge, exemplifying the technical skills of Victorian road engineers. The only example of a suspension bridge in Historic Scotland's care.
- James Dredge's patented design for a suspension bridge is unusual. Bridge of Oich was one of 30 bridges built using this technique, of which only seven now survive anywhere.
- The design of the bridge is particularly elegant.
- The bridge is sited at an important nodal point along the Great Glen (a natural route of communication for millennia) where road, river and canal meet.
- Having been one of three Dredge bridges that survived in Inverness-shire, all along the Great Glen, it is now the only one to survive in situ and in a good state of conservation.
- The portals of the bridge are of stone, like the Dredge bridge in Bath and the Wellington, Hutton, Montrose and Portland Place, Glasgow, suspension bridges. The Ness Island bridges had cast iron portals.
- Following exemplary conservation work by HES using blacksmithing skills to preserve the original links in the chain, the fabric is now much more valuable than reworked bridges, such as Gattonside, Melrose.

Associated Properties

Other HES sites along Great Glen: **Urquhart, Corrimony, Inverloch**

Other HES sites to do with communication: **Stirling Old Bridge**, Shira Bridge at Inverary.

Other suspension bridges in Scotland, including Union Bridge, Hutton (Berwickshire), Wellington Bridge (Aberdeen), Melrose, Wooden (nr Kelso), Dryburgh Abbey Bridge, Kalemouth, St Devenick (Cults, Aberdeenshire), Kirkton of Glenisla (Angus), Crathie, Haughs of Drimmie, Inverness, Aberlour (Banffshire), Pitlochry.

Wire bridges are more common, and later, e.g. Aberlour (Banffshire), Pitlochry (Perthshire) and the Forth Bridge.

Keywords Suspension bridge, river, canal, Victorians, James Dredge, Highland, Great Glen.