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Briefing Paper
South Stratford Canal

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Background

The South Stratford Canal is a particularly attractive waterway running for 21 km from Lapworth to Stratford on Avon. The canal was never a great commercial success and throughout its lifetime has suffered from underfunding. It was rescued from abandonment by public interest in 1958 and owes its current navigable status to a Herculean effort by the National Trust in the 1960s.

The last commercial use of the waterway was in the 1920s and from then the canal started a long period of decline. The situation was only reversed when the Warwickshire County Council (WCC) applied formally to abandon the canal to assist a road development it was implementing.

The public interest to prevent abandonment was led by the Inland Waterways Association. After a successful campaign to persuade WCC to alter the plans, the Association was then successful in persuading the National Trust to take an interest in the canal. The Trust owned and managed the canal from 1960 to 1988, when they handed ownership to British Waterways as a remainder canal.

It was the efforts of the National Trust in the early 1960s which restored the canal to a standard where the present canal user, predominantly the tourist, was interested in using the navigation and was able to do so safely. The National Trust was able to tackle the backlog of maintenance on the canal with plenty of enthusiasm, some skill base but with severe restriction on the funding available to them.

The works

With these resources the essential works were completed and the primary aim of opening the canal was achieved. Unfortunately, some of the works were not as robust as necessary to meet the long-term requirements of the structures, or they could not be achieved with the desired sympathy to the heritage of the canal. The current owner, British Waterways (BW), is now seeking to redress these shortcomings.

In 1997 BW assembled a team to consider the further restoration of the canal to meet the present needs of a tourist attraction. Bullen Consultants were appointed to consider the engineering and heritage restoration of the canal, alongside the BW team, looking at tourism, environmental sustainability and funding.

Considering the three critical issues of technical ability, community support and financial backing, the project can be reviewed as follows. First, the team certainly had the expertise to achieve the aim of a fully restored canal that would be an example of sympathetic restoration and development throughout the canal network.

Second, public support for the project existed and gained favour with the Inland Waterways Association, the local tourist development offices, the Sustrans Cycle Network and boat users.

Unfortunately, with regard to the third issue of financial backing, the proposals again stumbled against the block of funding. The aim was to achieve the restoration within a six-year plan while keeping the canal open for 36 weeks of the year. This programme has, unfortunately, been delayed but the works are continuing to a more modest programme. It is still hoped that eventually BW will achieve its aim of having a restoration jewel for the full 21 km of the canal. It will just take a little longer than originally planned.

Figures 1–10 show various types of works undertaken along the canal to give examples of expedient repair and what can be achieved with the right balance of expertise and sufficient funding.

Edstone Aqueduct

The restoration works to the channel and towpath have been carried out using materials which match those used in the original construction and which present a pleasing and workmanlike result (Fig. 1). However, although the strengthening of the abutment may give an adequate technical solution with a layer of gunite and drainage pipes, it is just as well that it is only seen by the inhabitants of the field and inspecting engineers (Fig. 2).

Packhorse bridges

The original bricks used to build these bridges have suffered from frost damage in many locations. In some cases this is apparent over large areas of the elevation and in others it is concentrated in a band where water has permeated through the wall from the retained ground behind the wing walls. In some instances there has also been significant impact damage at the edges of the bridge and at the 'rubbing line' just above water level.

Previous methods of repair have relied on

Fig. 1. Edstone Aqueduct—sympathetic restoration

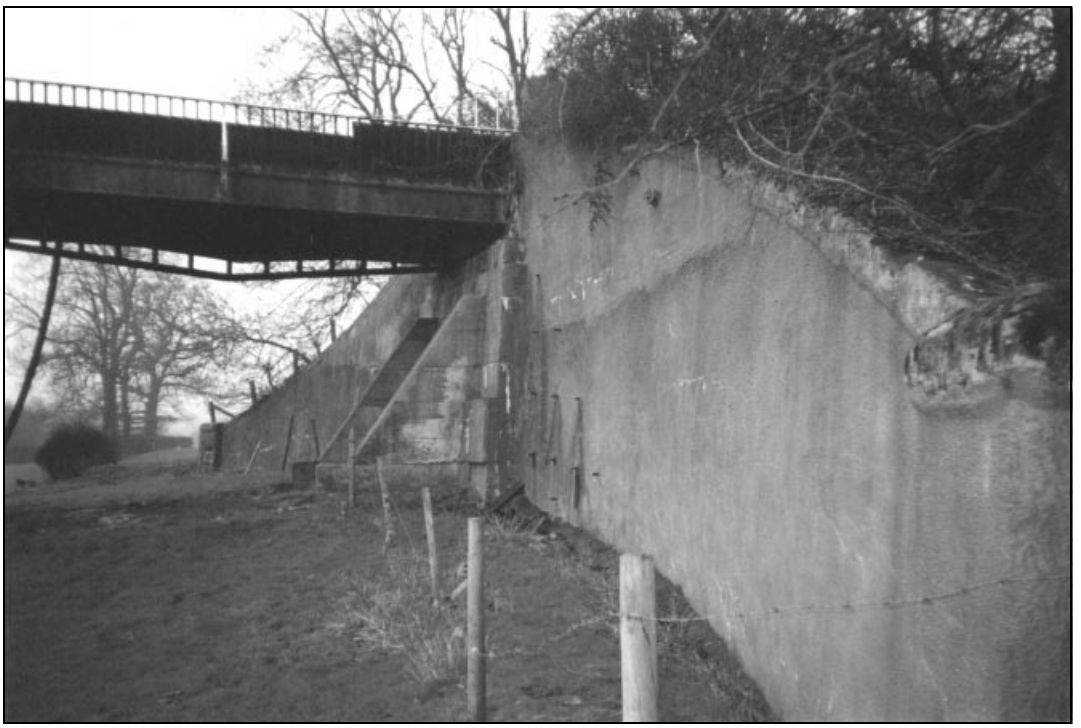

Fig. 2. Edstone Aqueduct—non-sympathetic restoration

Fig. 3. Packhorse bridge—long-term damage and unsympathetic repair

Fig. 4. Packhorse bridge—long-term damage and unsympathetic repair

Fig. 5. Packhorse bridge—substantial rebuild

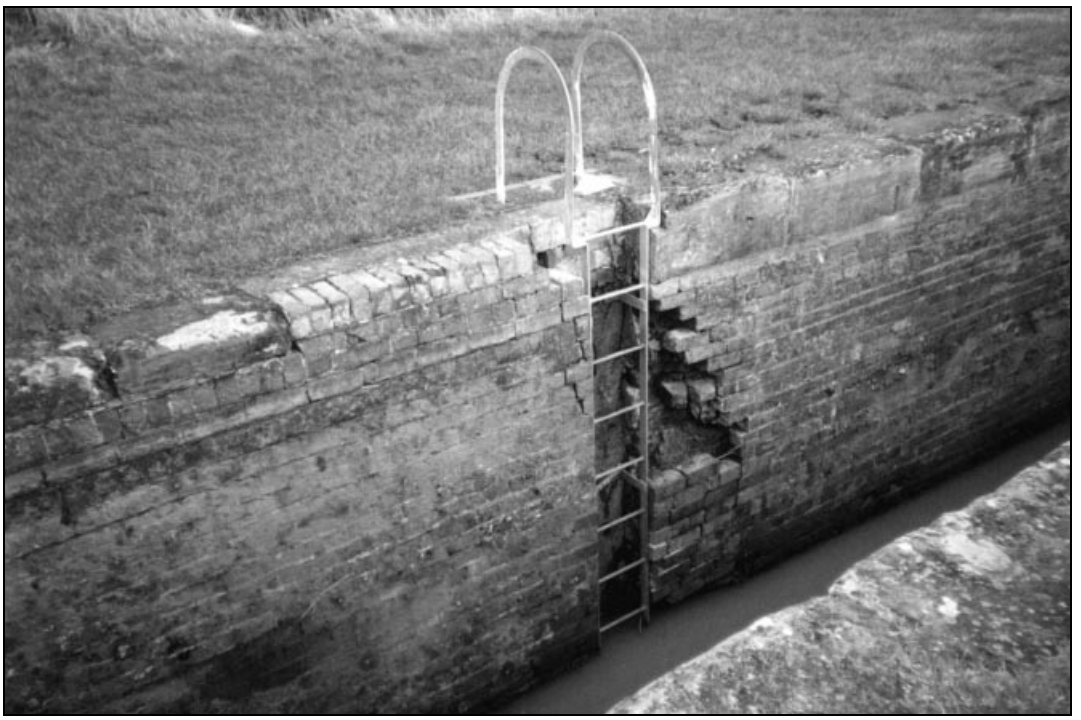

Fig. 6. Failure of unbonded facing skin to lock

Fig. 7. Severe damage above and below water line (lock 50)

Fig. 8. Major repair of lock walls (lock 50)

applying a mortar render to the brickwork. This has slowed down the deterioration but is unsightly and is now in need of substantial repair itself (Figs 3 and 4).

The current method of repair is to replace the defective bricks with a modern, harder brick and sometimes this can be done as patch repairs and in other locations requires a substantial rebuild (Fig. 5). Considerable research has gone into choosing the correct bricks to maintain the appearance and in specifying the mortar so as not to damage the original bricks along the interface.

Locks

The original construction of the locks was a mixture of brickwork and stone. The original brickwork suffered from frost and impact due to the soft bricks and this led to the wholescale repair of many locks by the Trust. The technique used in many instances was to take down the whole of the front skin of brickwork and then replace. Unfortunately, the new brickwork could not be effectively bonded into the remaining mass of the wall and it is now separating to form an independent skin that is one or one-and-a-half bricks thick (Figs 6 and 7).

Techniques are being considered that involve pinning and grouting the front skin but in cases where there are other problems to be addressed then the most cost-effective solution is to replace the defective areas with a fully bonded wall (Fig. 8).