

# **Rucks Bridge & Eysey Lock Project**

## **Introduction**

Rucks Bridge and Eysey Lock are located about 6 miles from the eastern end of the Thames & Severn Canal. Neither structure has been maintained since the canal became disused sometime around 1920.

Both structures are now owned by CWS as part of their Down Ampney Estate and the surrounding land is currently used for agriculture but likely to be subject to gravel and aggregate extraction in the coming years.

The structures fall into the length of canal generally defined as Phase 2; the length of canal between the Thames and the Cotswold Water Park. Large scale funding is not likely to become available until Phase 1A and Phase 1B funding is secure and issues such as water supply for the eastern end of the canal have been agreed with the EA.

A Section 106 agreement with Tarmac who are extracting gravel about 2km west of the site will start to provide £5000 of funding (for 20 years) and the location of Eysey Lock and Rucks Bridge make them appropriate targets for some of this funding.

The CWS has already granted permission to work on Rucks Bridge and have indicated their willingness to do the same for Eysey Lock.

There is a provisional 2007 WRG summer camp scheduled for next summer and WRG BITM want to work on the site for one weekend in February 2007 . The site also offers the opportunity to develop volunteering management and skills towards the eastern end of the canal.

This document outlines the work needed on both structures and outlines the way that they might be achieved.

## **Rucks Bridge**

### **History**

Rucks Bridge was built towards the end of the main construction phase of the Thames & Severn Canal, probably in 1788. It was probably originally built of rough stone with a brick arch and stone copings. The towpath wall at the bridge appears to have brick approach walls with stone copings but a dry stone wall with stone copings on the straight length under the bridge itself.

The offside (north) abutment between the waterline and the arch was rebuilt using T&SC stamped bricks and lime mortar perhaps about 40 years after the canal was opened.

A radical rebuild took place late in the canal's working life when most of the outer structure and a substantial part of the arch was rebuilt in red engineering brick using portland cement. This may have been in the 1895-1905 period when much restoration work was carried out along the whole length of the canal. Lengths of the coping stones were replaced with cast concrete.

Following the closure of the canal and prior to 1978, the parapets of Rucks Bridge have been demolished to allow wide farm vehicles to pass over the bridge unhindered. Much of the parapet brickwork and copings are in the canal under the bridge with the rest on the banks.

## Restoration

Rucks Bridge is an ongoing restoration project which started in 2006. The initial works have mainly been aimed at repairs to the offside (north) lower abutment which was becoming compromised due to the disintegration of a row of stones at what was the original waterline. Some of these had broken up and sections of the brick wall above had collapsed due to lack of support. The damaged section of stonework are being replaced by hard engineering bricks following advice from British Waterways.



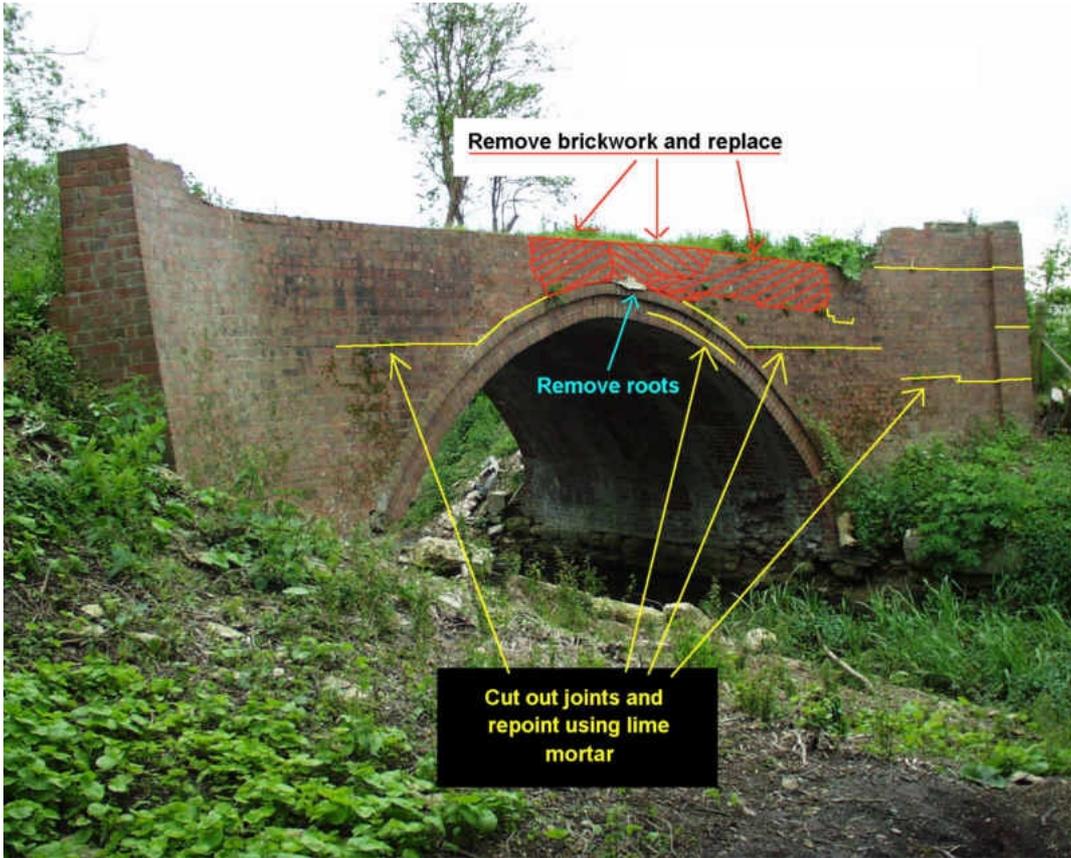
Working on the lower parts of the structure is difficult due to the presence of rubble, silt and water both upstream and downstream of the bridge. Water flows down the canal for much of the year so it is not possible to simply dam off each side of the bridge and pump out the middle except potentially during long dry periods in the summer.

The remaining work at Rucks Bridge includes:

- 1) Completion of the repair work to the offside abutment wall
- 2) Removals of large stumps and roots from towpath wall
- 3) Repair of the towpath wall in brick and dry stone walling to match original
- 4) Repair of the offside approach walls
- 5) Dismantling of upper brickwork displaced by root damage and root removal (east side)
- 6) Repair of upper brickwork (east side) using cleaned original bricks and portland cement
- 7) Removal and replacement of damaged upper courses (west side)
- 8) Cutting out and pointing of cracks caused by settlement of the bridge using lime mortar

Items 5 & 6 will require the erection of scaffolding on the east side of the bridge by suitable external contractors. Due to the costs, the duration the scaffolding needs to be in place wants to be kept to a minimum so this should go up just prior to the WRG summer camp and completion of these works should be prioritised.

Ideally this will be followed by excavating out the bridge hole and the repair of any defects in the lower towpath wall and abutments.



# Eysey Lock

## History

Eysey Lock is an un-shortened eastern T&S Canal lock designed to take Thames (Western) Barges of 90ft x 12ft approx with a draught of 4 ft. The lock had a fall of only 7ft rather than the more normal 9ft 4ins.

It seems likely that the brick walls were re-skinned at some point and there are some later patches. The surface brickwork has parted company from the wall behind in many places and sections have fallen off completely indicating that the repair work was not tied in sufficiently.

Both of the top paddle arches have partially collapsed at the face. The overflow weir appears to be in better a condition than most with the crest stones in place. The condition of the outflow culvert is unknown.

The bottom gates remain in situ but are very decayed above the water line and likely to collapse at any time. The paddle gear was "rescued" by the Trust in the mid 1970s and one set was restored to working order; they were subsequently lost from the Eastington depot in comparatively recent times (probably scrapped in a clear out).

Just above the lock is the lock cottage which is very remote and now in a poor condition having been abandoned in 1969 by the Laver-Preddy(sp?) family.

## Restoration

The restoration of the lock presents a number of challenges. Access to the lock by vehicles is non-existent and the towpath between it and Rucks Bridge is in a different ownership (Clarke Trust). The main chamber has between 3ft and 5ft of water and silt in it depending on the time of year. A feeder enters the canal immediately below the lock and the pound below is in water for perhaps half a mile.

The canal above the lock is dry with minimal silt and access to work on the top sill area is good.



The lock is surrounded by trees of various ages and sizes. Many are elms which have dutch elm disease and are dead or dying. There are perhaps half a dozen larger trees growing on, or out of, the structure including a particularly large one growing on the top sill and another at the bottom of the the lock.

Some smaller trees have already been removed by a working party. The ground surrounding the lock is somewhat uneven and the copings should not be trusted due to the condition of the walls underneath.

The restoration is perhaps viewed in 3 phases with each successive phase involving more work and complexity. Each successive phase has value of its own with or without the subsequent phases.

### **Phase 1 - Removal of trees growing in or close to the structure.**

The aim will be to remove all trees and saplings from within 2.5m of the lock edge or associated structures. This should prevent or at least slow down further deterioration due to root growth as well as being a prerequisite for creating a safe working area for later phases of work.

This requires perhaps 3 or 4 days of working party effort but will require certificated chainsaw operators. There will be plenty of clearing up work for others.

### **Phase 2 - Repairs to the head of the lock**

The aim will be to carry out repairs to the head walls, paddle holes, gate recesses and overflow weir which are accessible at the top end of the lock without clearing and draining the main chamber.



This is likely to involve the removal and replacement of areas damaged brickwork, repointing and the lifting and resetting of some of the coping stones. Work of this nature is best carried out in dry weather and when the temperature at night is unlikely to fall below about 5 C. Much of this work will employ lime mortar and there will be a need for a quantity of replacement bricks of the right size, colour and specification (Coleford Brick Company being the source used by BW). If not in stock, these will need to be ordered at least 3 months prior to delivery.

The top sill area will need to be cleared and surfaced in such a way as to prevent future vegetation damage.

The key issue to address prior to, or at the commencement of, this work is the creation of adequate

access for the delivery of materials to site. It is proposed that this be gained along the north (offside) bank from Rucks Bridge along the edge of a field. By carefully planning the timing of the delivery of bulky materials to coincide with dry periods in the summer, it should be possible to do this without creating a surfaced track.

There is a fence and a small feeder running between the field and the lock which needs to be crossed. There is a small crossing of the ditch about 10m upstream of the lock which would be sufficient for the manual handling of materials for this phase of the work. However, the next phase and, in the longer term access for re-gating, will require a more substantial crossing towards the tail of the lock. This could be achieved by culverting the feeder in a 500mm pipe over a distance of 5m (say) and running a track over the top. CWS understand and accept the need for a new access to the lock.

The amount of work in this phase of the project is likely to exceed the amount which can be completed by single week of WRG camp, especially since this will be split between this task and those still to be completed at Rucks Bridge. The work is therefore likely to be continued by CCT volunteers and other visiting groups at other times but the opportunity to work will be limited in the winter. If an opportunity arises to host a second WRG camp, sufficient work is likely to be available for it.

### **Phase 3 - The Main Lock Chamber**

Restoration of the main lock chamber has a number of challenges associated with it. The principle ones include damming off the tail of the lock, the removal of the silt and debris from the chamber and pumping down the lock when work is taking place. The condition of the walls is such that initial work will have to be planned carefully to avoid the risk of collapse on to anyone working near them.

Since this work is not likely to take place until 2008, details at this stage will be kept to a minimum but the works will require a substantial amount of volunteer input and it is worth considering having this phase of the project adopted by Dig Deep who are interested in this type and scale of work.

## Key Issues

### Cost Estimates (rough at this stage)

#### Rucks Bridge

£500 Scaffolding (erection and hire)  
£2500 materials (brick, dry stone, sand, lime mortar, concrete)  
£500 sundry  
**£4000 total (2007)**

#### Eysey Lock

Phase 1: £250 weekend WRG Hall hire + sundry

Phase 2: £300 Hall hire  
£500 WRG expenses  
£2000 bricks, lime mortar, sand, cement  
£1200 to build access to lock side and culvert  
£500 sundry  
**£4500 total (2007 -8)**

#### Phase 3: (very rough)

£2500 Pile dam at tail of lock  
£2500 Scaffold erection & hire  
£10000 Bricks  
£3000 Lime Mortar, cement, concrete  
£500 Fuel  
£1000 Plant hire  
£2000 sundry  
**£26,500 total (2008 -9)**

## Management

At present there is no obvious candidate to look after the overall project. However, the project itself can be used as a means of attracting such a person (or people).

Fred Clifford is the team leader for the small weekday working parties which have been carrying out the brickwork repairs to Rucks bridge. Keith Harding has undertaken some vegetation clearance at Eysey Lock. Harry Edwards has also organised some weekend work and has been in contact with WRG BITM.

Assuming the above programme is to proceed, immediate steps should commence to find a volunteer project manager who lives reasonably close to the eastern end of the canal.

Ken Burgin

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