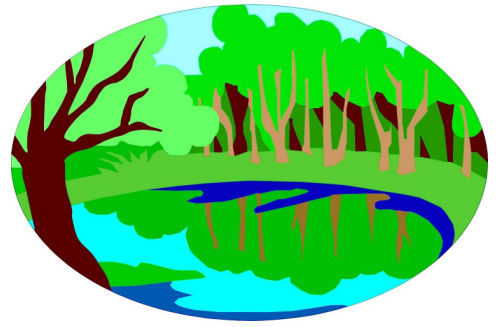


Friends of Moor Pond Woods



Grange Cottages Wood Sluice: A proposed plan of conservation

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on behalf of the
Moor Pond Woods Project Steering Group

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Introduction

The sluice in Grange Cottages Wood, Papplewick was revealed by excavation that took place between July 2011 and July 2014. The feature is located in the woodland south west of the junction of Moor Road and Papplewick Lane, at grid reference SK 54860.50374.

This report is in two parts. Firstly a brief description of the existing remains and, secondly, a proposal for their conservation.

A description of the main elements of the structure.

The sluice is aligned in a north-south direction. The northern end is approached along a section of leat that would have carried the water to the sluice. In reading the following notes reference should be made to figure 1. It will be seen that the structure comprises several elements. The northern end is considerably wider and narrows southwards.

1. The **main walls**, which are similar but not symmetrical. Each consists of 22 courses of grey Mansfield Stone in courses that range from 80mm to 140mm thick. The mortar courses are thin. The **western wall** has a pronounced parabolic shape, with near vertical top and bottom sections separated by a concavo-convex central section. The courses of stone are returned to the west, and embedded into the side of the leat. The upper courses are set well back compared to those near the base. The upper courses are missing from the northern end. At the southern end the western wall was tied into the stonework of a cross-wall. (See figure 7)

The **eastern wall** is steeper, the concavo-convex centre section is present but not as pronounced. The courses are returned to the east at the northern end. The southern half of this wall has, at some time, been demolished. (See figure 4)

2. The **northern entrance** to the feature has a pair of crude walls that extend towards the centre, narrowing the aperture from about 2.5m to about 90cm. Neither of these stub walls is tied into the stonework of the main walls. At their inner end, both are seen to be resting on a large limestone slab forming the floor at this end of the structure. (Figures 3 and 4)

The wall on the north-west side is seen to be curved at its inner end, mimicking the curve on the brick arch further south. (Figure 3)

3. In the centre of the structure is a **brick tube**. It is oblate, being 90cm high and 125cm wide. The crown is composed of bricks of different lengths ranging from 25cm to 45cm. There are 18 courses in the upper half, 9 either side of the centre line. The lower half only has 17 courses. The northern end of the tube has been broken. The crown is seen to be cracked but seems sound. (see figure 2) The crown of the arch is also missing at the southern end, but the more of the bricks that formed the floor are still in place (see figures 6 and 8). The tube was found to have been packed with 50-60cm of red clay down the sides and across the crown.

4. At the southern end of the structure there is evidence of a **cross wall** about 1.2m wide that seems to have spanned the space between the main walls. Where it was built over the brick tube it seems to have been supported on an arch. On the eastern side there is a column of mortared bricks that seems to have been the abutment for the arch. (figure 7) The cross wall was tied into the stone courses of the western wall. An arched section of the facing stones of the cross wall is

seen in situ in figure 1, and the position of the tie stones can be seen on the right hand side in figure 8. The space between the brickwork of the tube and the arch was packed with red clay.

A proposed scheme to conserve the structure.

The Friends of Moor Pond Woods propose to carry out work to conserve the structure.

The purpose of conservation

There are several reasons for wishing to carry out this work.

1. To stabilise the structure so that it can be left exposed with minimum deterioration due to the effect of the weather.
2. To make the structure safe for visitors to approach.
3. To restore the structure to reasonable representation of its appearance when the water system was in use.

The proposed work

Discussion has been carried out within the Friends group, and experienced practitioners have been consulted. It is intended that the main viewpoint for the structure should be when approaching from the north (as the water would once have done). Alternative high-level viewing will be created on the west, south and east sides of the structure. A 14-point plan has been devised, and can be seen in reference to figure 10.

1. The low wall (figure 5) that forms the eastern side of the entrance will be repaired.
2. Refer to figures 13 and 14. The surviving courses of the northern end of the east wall will be consolidated. The courses above course 8 will be rebuilt, stepping back from north to south following the profile of the embankment.
3. The low wall on the west side of the entrance will be repaired. The top stones were removed (and stored) during excavation because they were unstable (see figure 12 for the original formation and figure 11 for its present appearance). They need to be replaced on a firmer bed. To the south of the north-facing stones there was a parallel wall, this too will be replaced.
4. Refer to figures 11 and 12. The northern end of the west wall will be consolidated. The corner formed by the wall and its westward return will be replaced above course 6. Course 8 ties in the low wall at 3, and will help to stabilise it. Care must be taken to replace the two bricks that were originally found in this part of wall 3. As with the east wall it is proposed to step in all the courses above course 10 to follow the rising profile of the embankment.
5. Refer to figures 3 and 4. The low wall at 3 was observed to mirror the shape of the brick tube. It is proposed to reform the lower profile of the tube using baulks of treated timber that will serve the purpose of supporting the damaged courses at the northern end of the tube and visually connecting the missing north end of the tube to the entrance walls. The timbers will be of the same thickness as the bricks, so each course in the tube will be continued northwards with timber. They will form a secondary purpose by providing seating.
6. The timber baulks will serve to support earth fill that will be used to fill the void between the sides of the brick tube and the side walls and to support the entrance walls.

7. Refer to figure 4. The south end of the east wall was demolished at some time in the past. The replacement is compacted earth, which will not be stable if left exposed. It is proposed to dig out and install a concrete foundation layer. This will need to be done with consideration for the remains of the arch foundation (seen in figure 7) and with care not to disturb the brick tube.
8. The missing section of the east wall will be rebuilt onto the foundation layer. The face of the additional wall will be stepped back to emphasize that this is new work. This section will be tied into the surviving courses of the east wall.
9. Exploration at the southern end of the west wall will reveal whether there are foundation stones for an arch on that side too. See figure 8. It is proposed to build a brick or stone arch over the width of the feature, replacing the damaged arch that was seen in figure 1. The space between the arch and the profile of the tube will be made up with compacted earth (as it was when it was discovered). At the southern end of the brick tube a narrow shaft will be created to allow light to penetrate. This will be fitted with a grill.
10. Above the arch it is proposed to rebuild a face of the cross wall. This will be tied into the stonework of both the west wall and the new extension of the east wall. It will be built to the height of the two side walls. It is hoped that this cross wall will fulfil a function of supporting both side walls in the future. The space occupied by the lower courses of the brick tube (see figure 2) will be covered in such a way as to preserve them for future archaeologists. The spoil will be replaced on the south side of the cross wall to (a) create a walkway (and viewing platform) across the structure and (b) to restore the original profile of the embankment towards the south.
11. A wooden handrail will be installed around the highest parts of the structure allowing visitors to approach the steep walls and look down into the structure.
12. The present arrangement with a wooden barrier will be removed from the brick tube and replaced by a steel cage (that will support the cracked courses of the crown) with a grill on the front to prevent visitors entering the tube. Light will be allowed to penetrate from the grill at the back (see point 10) giving a sense of depth.
13. The floor of the feature will be covered with a layer of gravel that will aid drainage and give a sense of a stream of water 'flowing' towards the tube. The large stone slab will be left in place as a gateway feature.
14. The sides of the leat on the northern approaches to the structure will be treated to make good the disruption caused by excavation and to restore the profile of the leat.

All the above should be considered along side the proposals for access paths from the south and east.



Figure 1: The sluice, looking south (November 2012)



Figure 3: Detail of the wall at the northwest corner (November 2012)



Figure 2: Detail of the brick tube (November 2014)



Figure 4: The sluice, from above, looking east (November 2012)



Figure 5: Detail of the northeast corner (November 2012)



Figure 6: The south end of the sluice, looking east (July 2013)



Figure 7: The south end of the sluice, looking south (July 2013)



Figure 8: The south end of the sluice, looking west (July 2013)



Figure 9: The sluice facing south (November 2014), showing key existing features

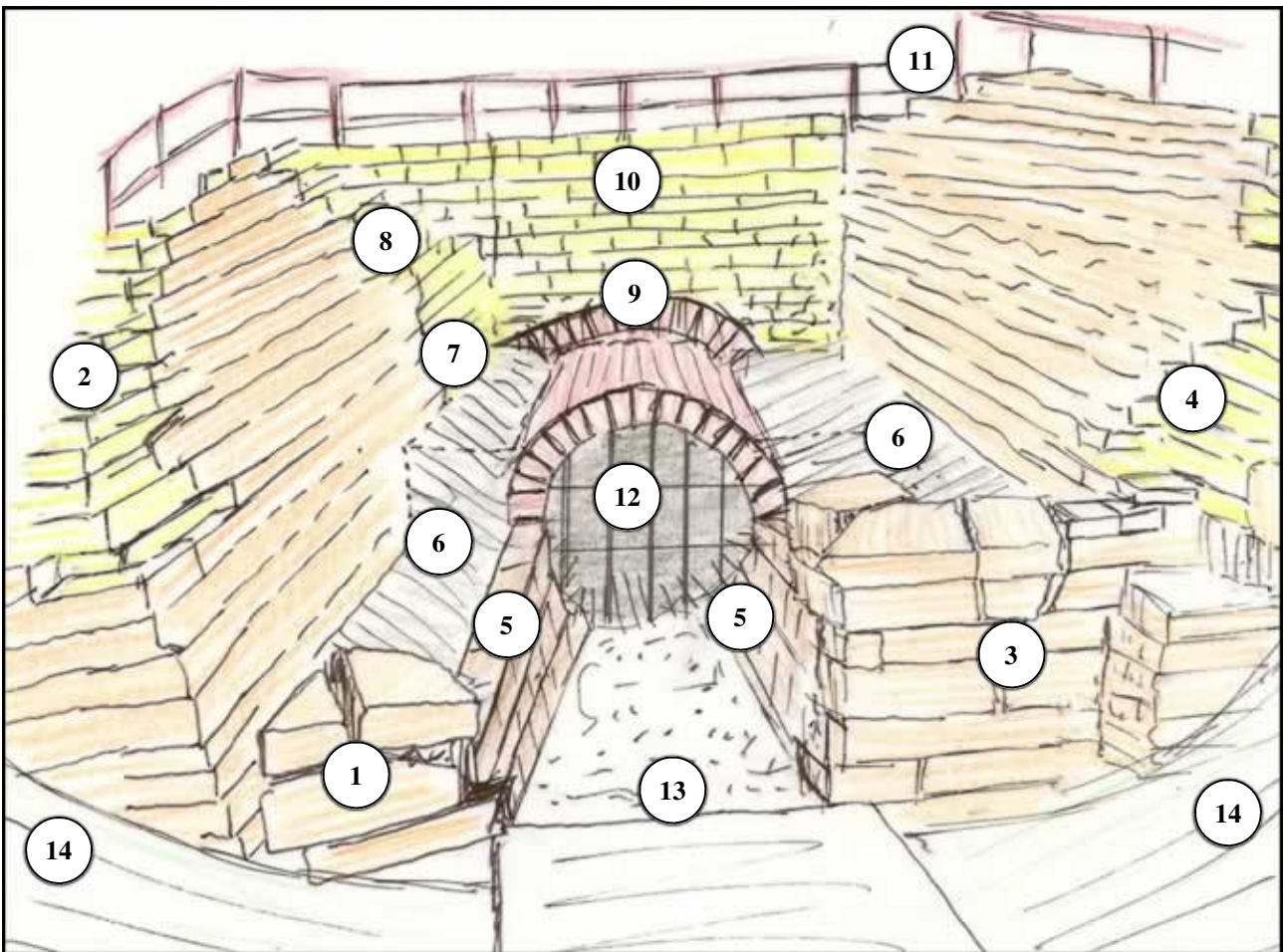


Figure 10: The proposed conservation measures, showing what the finished work will look like.



Figure 11: The west wall, facing west (November 2014), showing proposed conservation



Figure 12: The west wall, facing south (November 2012), showing proposed conservation





Figure 14: The east wall, facing south (November 2014), showing proposed conservation