

**Archaeological recording at Millmead  
Lock, Guildford, Surrey**

**NGR: SU 9958 4915**

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**Report to National Trust (Southern Region)**

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### **Summary statement**

The National Trust (Southern Region) requested C K Currie for CKC Archaeology to undertake archaeological recording on Millmead Lock, Guildford, Surrey (NGR: SU 9958 4915). The lock is on the Godalming Navigation, part of the National Trust's River Wey Navigations property. The Navigations are still used for frequent boat traffic, mainly of a pleasure kind, and the locks are in regular use. This has resulted in the need for repairs from time to time in keeping with operational requirements, and safety considerations. It was proposed to rebuild the upper parts of the sides of Millmead Lock, replacing more modern materials such as concrete, with more traditional brick and stone. The work was carried out in April 2000.

The archaeological recording carried out as part of these works recorded two phases of brickwork within the lock chamber. Both sides were made of frogless bricks, suggesting a construction date before 1900 as most likely. The phases were distinguished by the different mortar types. A lime mortar, used in the majority of the west side, was thought to be the earlier. A harder whiter mortar was used on the southern 5m of the west side, and on the town (east) side. This was thought to be later, the concrete-like nature of the mortar, combined with the frogless bricks might suggest a later 19<sup>th</sup>-century date.

The use of frogless bricks in the lock chamber sides re-opens the controversy about the nature of the earliest locks. Documentary evidence suggests that at least part of the Godalming Navigation locks were originally made of brick, although this was mixed with considerable areas of timber. Although it is not possible, on the present evidence, to suggest that the lock chamber at Millmead was made of brick from the beginning, there is now some evidence to support the idea that brickwork was used in this part of the lock from an early date.

Documentary research has revealed that major repairs in concrete were carried out to the lock chamber in 1937, giving it the appearance it had prior to the present works.

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## **Archaeological recording at Millmead Lock, Guildford, Surrey (NGR: SU 9958 4915)**

This report has been written based on the format suggested by the Institute of Field Archaeologists' *Standard and guidance for archaeological watching briefs* (Birmingham 1994) and *Standard and guidance for the archaeological investigation and recording of standing buildings or structures* (Manchester, 1996). The ordering of information follows the guidelines given in this document, although alterations may have been made to fit in with the particular requirements of the work.

### **1.0 Introduction**

The National Trust (Southern Region) requested C K Currie for CKC Archaeology to undertake archaeological recording on Millmead Lock, Guildford, Surrey (NGR: SU 9958 4915). The lock is on the Godalming Navigation, part of the National Trust's River Wey Navigations property. The Navigations are still used for frequent boat traffic, mainly of a pleasure kind, and the locks are in regular use. This has resulted in the need for repairs from time to time in keeping with operational requirements, and safety considerations. It was proposed to rebuild the upper parts of the sides of Millmead Lock, replacing more modern materials such as concrete, with more traditional brick and stone. The work was carried out in April 2000.

### **2.0 Historical background**

A river navigation was created between Guildford and the River Thames along the River Wey valley from the early 1650s, to link the town with London. After some initial problems, this navigation proved to be successful. In 1760 it was decided to extend the navigable river a further four miles upstream to the market town of Godalming. A separate company was formed for this enterprise, the work largely being completed by 1764. Millmead Lock was the first lock on the new navigation, being situated below the county town of Guildford.

The Godalming Navigation never proved to be as successful as the Wey Navigation, and failed to attract traffic comparable with the earlier enterprise. Although trade on the Wey Navigation managed to survive the coming of the railways in the 1840s, the Godalming Navigation was severely affected. By the end of the 19<sup>th</sup> century trade was much reduced, and the last commercial barges to Godalming ceased operating in the 1920s. The Wey Navigation continued to operate commercial barges, on a reduced capacity until the 1960s, by which time pleasure use of the Navigations was providing alternative revenue. The last owner of the Wey Navigation, Harry Stevens, donated the property to the National Trust in 1964. In 1968 the Guildford Corporation, owners of the Godalming Navigation, followed suit, and donated it to the Trust (Currie 1996).

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### **3.0 Strategy**

The client required the author to attend the repair works, recording the structure as required by the circumstances. The work was carried out to RCHME Level 2 (RCHME 1991, 2), with modifications required to suit the nature of the structure.

### **4.0 Results**

Dams were placed across the lock cut above and below Millmead Lock to allow water to be pumped out. Having removed the water, it was possible to describe the lock structure.

The lock was mainly of brick construction, with a concrete floor and a concrete facing on the town (east) side. Elsewhere, the external facing was in brick. The gates were of wood, and were of a uniform type found throughout the Navigations. They are replaced on a regular basis (on average every 20 years), and usually have the date of the last replacement carved prominently into their upper surface. The lock can be drained by brick sluices on either side of the structure. They are situated opposite one another at the south end. The wooden sluice gate is on the south (outside) of the lock gate. The sluice gate is operated by a metal winding device called locally a penstock, which raises to allow water to pass through the brick culvert behind. The latter are built into the sides of the lock, with the unobstructed entrance to the brick culvert being on the inside of the lock chamber, 0.92m from the lock gate. The culvert entrances were 'shield' shaped, being 0.37m above the lock chamber floor. They had maximum dimensions of 0.61m wide and 0.89m high.

The lock chamber was 22.1m in length and approximately 5m across, although the latter varied because of slight bulging of the lock sides. The lock sides are an average of 3.47m high, with a slight step 1.37m up from the lock bottom. Below this step the brickwork was left intact, but above this the external faces of the lock chamber were removed and repaired. On the town (east) side the external face of the lock chamber above the step was faced in a concrete render about 0.45m thick. Inserted into the concrete, penetrating the brickwork behind with six iron ties. These were upside-down 'T' shaped, the arms of the 'T' being both approximately 60 cms in length. From the south gate they were spaced at intervals of 6.1m, 10.05m, 13.45m, 17.3m and 20.3m. There had been a sixth tie but this had been dislodged before recording began (between the south gate and the tie at 6.1m). The distance between the ties averaged between 3m and 3.85m. The ties were not set at a uniform distance from the top of the lock. The distance from the top of the lock to the bottom of the tie being (from S to N) 1.25m, 1.4m, 1.15m, 1.2m and 1.1m.

Removal of the concrete facing on the town side of the lock chamber revealed brickwork behind. This was built in a bond of alternate courses of headers and stretchers, although this included irregularities. The brick, apart from a few obviously more recent repairs near the top, was an unfrosted variety, bonded with a hard whitish mortar containing some darker grit within it. The brickwork seemed to be of a single build, apart from minor patching.

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On the other (west) side, the lock chamber side was made entirely of brick without a concrete facing. Again the bricks were a frogless variety. Removal of the outer facing of brick revealed two builds. The first 5m at the southern end of this side was in a similar build to the town side, with the characteristic whitish mortar acting as a bonding. To the north of this the brickwork was in standard English Bond, bound together with a crumbly sandy lime mortar. This had a distinctive yellow colouration, distinguishing it from the whiter mortar elsewhere.

The lock cill at the south end of the lock was topped off in concrete, with the structure below being in English Bond brickwork. The lock wings outside the lock chamber (that is outside the gates) were made of brick on both sides.

No other notable features or unusual materials were noted.

## **5.0 Discussion**

There is some controversy about whether the Godalming locks were originally built of brick, or were timber locks that were later rebuilt. The records for the Navigation are unclear on this issue. The Godalming Navigation Commissioners appointed William Jeffrey and George Broon field to build Millmead Lock in March 1762 (GMR 142/1/1, p. 47). By 1787 the lower gates of the lock were considered to be 'so decayed' that they needed repairing (ibid, p. 503).

It was not until the Stevens family started to take over the Wey Navigation at the end of the 19th century that more detailed snippets were recorded about the Godalming locks. The Commissioners employed them to oversee works on the Godalming Navigation from the later 19th century, and some of these works were recorded in their Wey Navigation accounts.

In 1887 the lock at Millmead is given a new set of upper gates. The following extract from an account of repairs to the lock made by the Stevens family in June 1891 seems to suggest that the original lock was made, at least partly, of timber.

'Put in Bay with 3 inch Deals (12 feet) at end of Mill Mead Cut, and ran the water out Tuesday morning could not keep the Water out with hand pumps there being Springs all over the Lock and cut. Steam Engine hired on Wednesday morning and kept at work till following Tuesday even, put in New Lower Lock Gates & Staple Posts at Mill Mead Lock and renewed the apron at the head of the Lock which was washed away and the ground washed out to a depth of six feet (used 2 inch Deals) the lower apron below the Lower Lock Gates lined all over with 2 inch deals this extends to 20 feet below the Lock gates, cleaned out the Cut finished all off 20th June.' (GMR 129/111/1)

In 1906 the timber aprons and the bottom of the lock were replaced in concrete, as well as building new concrete walls on both sides of the river downstream of the lock (Harry Stevens' Journal, p. 1).

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If the records for the earliest lock at Millmead are vague about exactly how much of the structure was originally of timber, records for St. Catherine's Lock upstream are a little clearer. Here it is recorded in 1909 that repairs should be carried out,

'The work included the demolishing of the existing timbers forming the sides of the Lock & replacing the same with concrete walls... The bottom of the Lock & the upper & lower aprons were not touched as they were built of bricks & were in a good state of preservation' (SRO 137/12/40)

From this reference alone one might be tempted to argue that the earliest locks on the Godalming Navigation were of timber. However, an order from the Commissioners dated July 1768 states that John Woods was to look at St. Catherine's Hill lock, and 'to make his report of what is wanted to repair the Brickwork' (GMR 142/1/1, p. 248). In 1891 new upper gates were put up, and the sides repaired. It is also recorded at this time that the bottom of St. Catherine's Lock was of brick (GMR 129/111/1).

It can be seen from these references that the evidence is inconclusive. It is certain that at least parts of both Millmead and St. Catherine's Lock were originally made of timber, but St. Catherine's had brickwork in it from the beginning. Exactly what parts were brick and what parts timber is inconclusive. The lock chambers are never referred to directly. Could the timber portions have been the bottoms and the wings, with the chamber itself of brick from the beginning?

The evidence from the present work at Millmead sheds some light on this question. There are two obvious builds of brickwork. It is not clear which build was first, but it is possible that the lime mortar on the west side is earlier than the harder whitish mortar elsewhere. The bricks are unfrogged throughout, which suggests that both builds pre-dated the 20<sup>th</sup>-century. It is unclear when frogged bricks were first used in the Guildford locality, or even if the use of unfrogged bricks extended after 1900. Generally, frogged bricks begin to become more common in the last two decades of the 19<sup>th</sup> century, and that unfrogged bricks were rarely used after 1900 unless they are recycled. The number of the unfrogged bricks in the chamber sides amounts to many thousands, and the lack of intermixed frogged varieties, except on obviously later repairs, suggests they date before 1900. Although it is impossible to be certain, it is therefore unlikely that the brickwork in Millmead Lock is later than c. 1880. The sections containing the harder mortar may date from the second half of the 19<sup>th</sup> century, but they suggest that they had replaced earlier brickwork, probably of the lime mortar type. It is therefore possible that the earliest brickwork predates 1850, and may be early work. The reader should appreciate that these estimates are purely conjectural until more positive evidence is forthcoming.

Concreting of the lock structures themselves on both navigations began mainly in the early 20<sup>th</sup> century, being commonplace from the 1920s (Currie 1996). In a report of 1928 on the River Wey drainage system by C H J Clayton, Millmead Lock was described as having a 'dilapidated appearance' (SRO 1496/1). Repairs to rectify this began soon after this observation. In 1934 the brickwork around the lower gates was repaired and partly replaced with concrete (Stevens Journal). By June 1937 the brickwork on the town (east)

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side was noted as 'moving', and it is at this date that the concrete facing was put on this side of the lock.

The repairs on this occasion are described in some detail:

'New upper gates were put in at this Lock in May-June 1937, and the timber staple posts and timber cill both replaced in concrete. The brickwork of the lock side on the right bank i.e. the Mill side, had come over some few inches at the top. The back of the wall was quite sound so the brickwork was cut out on the face for about 18" in thickness from the top down to the water line, and replaced with concrete with 6 = Tie Bolts through same. The Lock was closed to traffic from Monday May 24<sup>th</sup> to Monday June 14<sup>th</sup>. Good weather was experienced throughout.' (ibid)

This was the last time that major repairs were carried out to the structure of the lock. Hereafter repairs are largely restricted to the replacement of wooden features such as the gates.

## **6.0 Conclusions**

Archaeological recording was undertaken on the structure of Millmead Lock in Guildford, part of the River Wey Navigations (Godalming Navigation). Both sides of the lock chamber were made of frogless bricks, suggesting a construction date before 1900. The phases were distinguished by the different mortar types. A lime mortar, used in the majority of the west side, was thought to be the earlier. A harder whiter mortar was used on the southern 5m of the west side, and on the town (east) side. This was thought to be later, the concrete-like nature of the mortar, combined with the frogless bricks might suggest a later 19<sup>th</sup>-century date.

The use of frogless bricks in the lock chamber sides re-opens the controversy about the nature of the earliest locks. Documentary evidence suggests that at least part of the Godalming Navigation locks were originally made of brick, although this was mixed with considerable areas of timber. Although it is not possible, on the present evidence, to suggest that the lock chamber at Millmead was made of brick from the beginning, there is now some evidence to support the idea that brickwork was used in this part of the lock from an early date.

Documentary research has revealed that major repairs in concrete were carried out to the lock chamber in 1937, giving it the appearance it had prior to the present works.

## **7.0 Archive**

The archive for this work has been deposited with the River Wey Navigations archive at the Property Headquarters, Dapdune Wharf, Guildford, Surrey. Copies of the report were lodged with the client, the Surrey County Council Sites and Monuments Record (SMR), and the National Monuments Record in Swindon, Wiltshire.

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## **9.0 Acknowledgements**

Sincere thanks are given to all those involved with this project. The contractors are thanked for giving the author free access to the works. The Property Management are thanked for arranging access and parking. Judith Congdon liased between the parties involved, and provided plans, encouragement, and discussed the findings with the author.

## **10.0 References**

### **10.1 Original sources in the Surrey Record Office (SRO):**

These records were in the Guildford Muniment Room until 1998, and were previously referenced with the prefix 'GMR'.

SRO 129/111/1: Notebook of repairs to the Navigations 1861-93

SRO 137/12/40: Stevens' repairs and works on Navigations from 1906

SRO 142/1/1: Minute Books of Godalming Commissioners, 1760-1900

SRO Harry Stevens Journal

SRO 1496/1 C H J Clayton's report on the River Wey, 1928

### **10.3 Secondary sources**

C K Currie, *A historical and archaeological assessment of the Wey and Godalming Navigations and their visual envelopes*, 5 volumes, unpublished report to the National Trust, 1996

Institute of Field Archaeologists, *Standard and guidance for archaeological watching briefs*, Birmingham, 1994

Institute of Field Archaeologists, *Standard and guidance for the archaeological investigation and recording of standing buildings or structures* (Manchester, 1996)

Royal Commission on the Historical Monuments of England (RCHME), *Recording historic buildings. A descriptive specification*, London 1991 (2<sup>nd</sup> ed; 1<sup>st</sup> ed, 1990)

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