The Leoni Bridge and Lower Town Pond; a short report

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Introduction

The desilting/cleaning of the Carshalton ponds during September/October 2023 has allowed a brief inspection of the Leoni Bridge (fig 1) and the Lower Town Pond for architectural and structural history purposes, courtesy of the London Borough of Sutton (Councillor Andrew Jenner, Ian Wolstoncroft, Bill Wyatt *et al*), and the site contractors Land&Water (on site Tony Squires and Simon Brown). The writer would like to thank them for permitting and arranging access, and to John Phillips for comments on the draft.

The following report also includes observations on the condition of these structures, although the writer stresses that he is not a structural assessor, and these remarks are purely incidental.

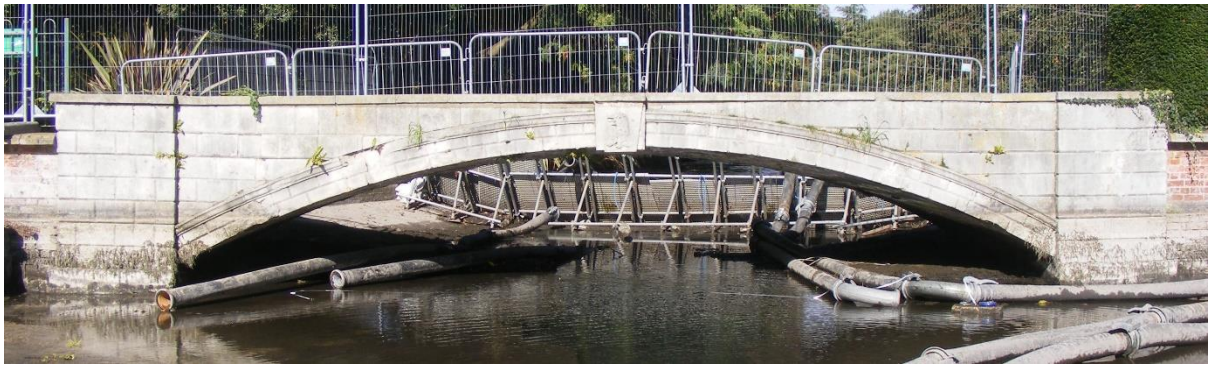


Fig 1 – The Leoni Bridge, south elevation from the Lower Town Pond bed.

Part 1; The Leoni Bridge - structure

The structure spans the north flowing canal exiting from the south side of the eastern or Lower Town Pond. It consists of a brick core forming a single vaulted segmental span approximately 9.07m wide, 4.18m deep and 1.46m high. The core is veneered with south and north facing Portland stone rusticated ashlar facades or elevations, of which the southern is most visible from the main Croydon to Sutton Road (A232) and North Street (B277).

The ashlar courses, with a deep 'V' cut rustication, extend to seven courses in number, the uppermost course being deeper than the rest. On the north (canal) side, the parapet structure is *c*.11.60m long, extended to *c*.13.90m with the attached elongated volutes, with pitted surfaces, to east and west (fig 2). The central part of the volute is missing.

Fig 2 – north elevation, eastern volute

The brick arch vault springs from shallow but wide Portland stone plinths which form the lowest, deepest course of the bridge abutments, clearly visible under the arch and extending west and east (fig 3). These plinths are offset only to the south and north where they slightly break forward from the bridge elevations; and to the east of the east of abutment, etc); it is likely that the abutments built on them (which continue the break upwards through the elevation), are also of brick faced with stone.

Fig 3 – the Portland stone base of the western abutment, and the springing of the brick vault.

Fig 4 - the vault soffit, looking east.

The soffit of the brick arch is mostly covered with a thin cement scree, much eroded in the centre but surviving virtually intact near the elevations. Where it has eroded, the rusticated ashlar elevations are about 120-150mm deep, through-bonded into the brickwork of the vault (fig 4). Close inspection of the surfaces indicate that the stone elevations above the ornamentation of the arch are comprised of variable sized, geometrically cut, stone panels displaying multiple whole or part rusticated ashlar blocks. This is shown on fig 5, where the functioning joints of the south face of the east abutment are outlined in red.

Fig 5 - the south elevation of the eastern bridge abutment, stone panels jointing.

The cyma moulding and double rustication course which define the arch are independent of these panels; they are cut into voussoir-shaped segments of variable length. The application of all these stone panels to the brickwork of the vault is similar to wood panelling laid against an internal wall and are assembled like a simple jigsaw; all neatly coursed and jointed throughout to form a homogenous elevation. It is a cheaper and easier manner of application than the more expensive alternative of individual rusticated blocks. The beautiful curve of the arch is only broken at the apex by a projecting block approximately *c*.500mm wide, *c*.600mm high and *c*.400mm deep; that in the north elevation being a tapering keystone, that to the south being a roughly square block with a tapering keystone carved in relief – a subtle but interesting difference. Both keystones are carved with a '*Gryphon's head, erased'*, an element from the Scawen family arms (fig 6 and 7); these are worth comparing with their arms displayed on the Scawen monument in Carshalton Church (fig 8).

Fig 6 and 7 (left and centre); The north and south facing keystones. Note the thick band of mortar between the top of each stone and the coping above. Fig 8 (right) – The Scawen arms impaled with those of the family of Dame Mary Scawen *nee* Maynard, from her monument in All Saints Parish Church, Carshalton, *c*.1700.

The level parapet and coping of the north and south elevations are approximately *c*.2.05m above the present pond floor, while the surface of the tarmac walkway between them, some *c*.3.55m wide, rises and falls no more than *c*.300mm, in tandem with the brick vaulted arch below. At the apex (i.e, between the two keystones) the vault and overlying tarmac are roughly calculated as being no more than *c*.550-600mm deep, comprising perhaps no more than three or four courses of brickwork, on which is laid *c*.20-300mm of path makeup and finish. It seems likely that the present tarmac surface is higher than the original as designed. A pointer to that is that the internal faces of the parapet walls replicate the rusticated elevations visible to south and north, although there is very little to see due to the path makeup.

The parapet is capped with a plain coping course, but this has been reset on a concrete/mortar base which is deepest over the keystone (figs 6 and 7). Views of the façade from the pond floor confirm that the vaulted span has almost imperceptibly sagged between the abutments, necessitating at some point the relevelling of the coping, not expertly done (figs 1). This appears to have been executed before 1974, perhaps as early as the 1920s and 30s (based on historical photographic evidence; Sutton Local Studies, SBC 712 and 91, 'Grove'). The copings over the eastern abutments have the remains of a matching iron spigot set in their far south- and north-west corners, while central to the keystone copings is a similar iron spigot set in lead, perhaps to secure small decorative statuary.

The pond walls which abut the bridge structure were also observed, particular note being taken of the flanking south-facing wall on the eastern side of the bridge from which the following observations were made (fig 9).

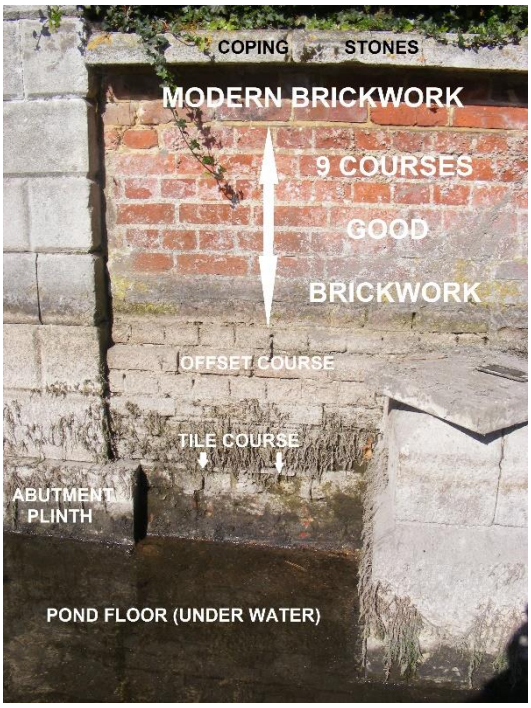


Fig 9 – the pond south wall to the east of the bridge, facing south.

The wall is of simple brick construction with one offset set just below the present waterline, with coping it is 1.52m above the pond floor. The brickwork cleanly abuts up to the stonework of the bridge abutments, without any visible through-bonding. This indicates that, stratigraphically, it postdates the bridge although some or all of it is likely to be part of the same construction phase. With respect to the rusticated stonework of the bridge, three brickwork courses exactly butt up to a single stone ashlar course, all laid expertly in this respect. Beneath the ornamental stone coping, bearing a quarter-roll moulded on each edge, the upper two courses are of recent (post 1945) construction, set in cement mortar. Set below these are nine courses of a good quality consistently orange/red brick with wide sandy mortar joints, but neatly jointed and laid in English Bond (ie, a course of header bricks – the end of a brick- over a course of stretchers – the long side of a brick - all repeated). These brick courses are bedded on the offset (at 1.25m below top of coping). This offset is five courses deep, also laid in English bond but comparison of the brick sizes here with the nine courses above tentatively suggests that they are probably from a different brick source, perhaps indicating an earlier phase than those above. These five courses are bedded on a single course of roof tiles which abut up to the uppermost part of the plinth course; below are three courses of brick much eroded by water. As the plinth is deeper than the ashlar courses it is possible that the tiles were added to compensate for this, allowing the courses above to be married in triplets with the shallower ashlar courses of the abutment.

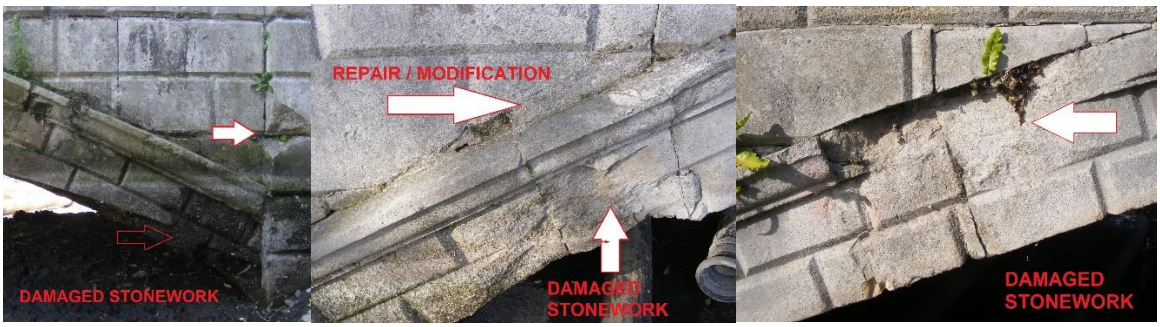
Part 2; The Leoni Bridge - Condition

Fig 10 – the vault soffit, showing the degraded concrete scree and brickwork.

The writer noted that the cement coating of the soffit of the arch vault has exfoilated in places, leaving large areas exposed, especially in the centre. The vault brickwork appeared generally good, although there were one or two patches where individual bricks have eroded to a depth of 5mm or so (fig 10). The historic sagging of the vault has already been mentioned. The rusticated stone facing in the elevations also appears in general sound, although one panel on the north-facing elevation (west side) has slightly come away from the backing brickwork

Figs 11 and 12 – spalled stone panels on the north and south elevations

(fig 11), as with one panel on the south (also west side, indicated on fig 12). Despite this, the masonry appears solid but could deteriorate with the ingress of percolating water/ice. Elsewhere, a few stone panels have been defaced and details lost, including sections of the arch moulding and rustication (figs 13, 14 and 15). Most of the joints appear clean, with only a little vegetation growing within degraded mortar joints. Finally, it should be noted that the northern elevation is 'dirtier' than that to the south.



Examples of damage to the elevations - Fig 13 (left) North elevation, west side; figs 14 and 15 (centre and right) South elevation, west side.

Part 3; The Leoni Bridge - historical context

The name of the Venetian Giacomo or James Leoni (*c*.1686-1746), nominally a Palladian architect, has been associated with this bridge since at least 1912, when Dr A V Peatling called it 'Leoni's Bridge', although in July 1872 the Sale catalogue for the Grove estate records it (in an early example of 'Estate Agent's speak) as a '*Portland-Stone Bridge (designed by Sir Christopher Wren)'* (Peatling Papers, vol 8, F-G, *The Grove*). Leoni published the first English edition of the Venetian architect Andrea Palladio's great work the '*Four Books of Architecture'* in the 1710s, and his reputation must have brought him to the notice of Thomas Scawen (1702-

1774), owner of Carshalton Park and Lord of the Manor, who made payments to him in the 1720s for his work on a never-completed mansion within the Park.

The manor of Stone Court, which consisted of much of the area now known as the Grove, and containing the area of the Lower Town Pond, was bought by Scawen's uncle by marriage, John Cator (died 1726) in 1693. After several abortive auctions during the late 1720s (at one of which he acquired the estate to have the purchase annulled), Scawen finally purchased the estate at the end of 1729. In 1734, in a Parliamentary application to sell some of his entailed estates, Scawen argued that he had '*laid out a great sum of money in the improvement of the said estate at Carshalton aforesaid, and . . is about to make considerable greater improvements upon the same*'. This writer is certain that, in either case, the remodelling of the Lower Town Pond with the Leoni Bridge took place under his ownership, creating a piazza – not unfavourable to a Palladian follower - in water. By this activity, Scawen appears to have visually joined his two estates – Carshalton Park and Stone Court – together across the High Street; an 'ornament' (most likely an obelisk) erected behind the present Coach and Horses was to be seen across the Leoni Bridge from the front steps of Scawen's now demolished house at Stone Court, situated on the lawn in front of the existing buildings known as Stone Court.

The connection of Leoni to the bridge remains unproven, as there is no direct evidence that it was designed by him. By 1730, when Scawen finally acquired the Stone Court estate, it seems likely that Leoni had left his employ. However, during the previous four years, during which Leoni was almost certainly in his employ, it is plausible that Scawen with or without Leoni would have had plans drawn up for the estate in expectation of purchase. Even if untrue, the legend of the failed Carshalton Park mansion and its main cast, Scawen and Leoni, remained long in the memory of Carshalton's villagers and may indeed have led to the architect's name being linked with the fine bridge. A further indicator is that while Palladio's illustrations of bridges, either of 'ancient' (ie, Roman) or his own design, do not exactly parallel the Leoni Bridge, those built in stone have similar treatment in their ashlar elevations and decorative arch mouldings, and a design was modified to the specifications of the Stone Court watercourses.

Part 4; Other features in the Lower Town Pond (fig 16).

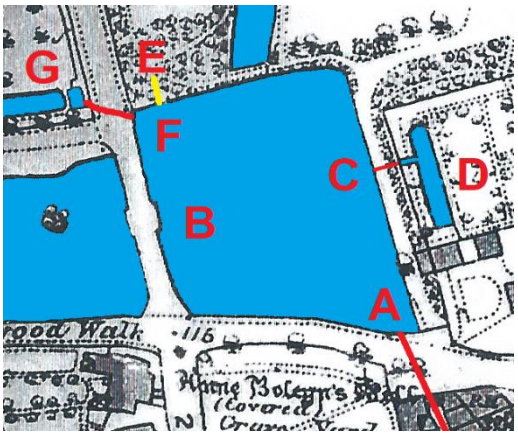


Fig 16 -The Lower Town Pond in 1868 (OS Ist edition, 25 inch = 1 mile).

The Hog Pit culvert arch, North Street Bridge, and Dower House Pond outfall arch/pipe.

The Hog Pit culvert arch, situated in the south-east corner of the pond, is the outfall of the culvert from the Hog Pit pond in Carshalton Park (fig 16. **A**). It has a datestone of 1823, which comes within the ownership of the Pond by Joshua Ryle of the Grove. Ryle (died 1828) appears to have refurbished parts of his Grove estate before he built his house in the late 1820s; a boundary stone inscribed 'JR 1826' survived into the early 20th century. The Hog Pit arch brickwork appears contemporary, although the upper parts and coping are a rebuilding (fig 17). The culvert is segmental in section (fig 18).

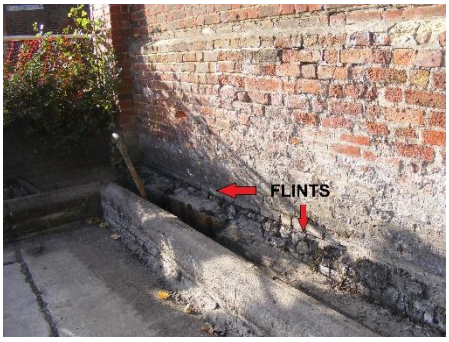
Fig 17 and 18; Lower Town Pond, south east corner, the Hog Pit arch (1823).

The North Street Bridge (fig 16, **B**) has a datestone of 1828, and has a later inscription added on completion of the bridge widening in 1909 (fig 19). The view of the vault shows the bridge extension on the Upper Town Pond side, away from the camera (fig 20).

Figs 19 and 20; Lower Town Pond, North Road Bridge datestone (1828/1909) and vault soffit.

Along the pond east wall, virtually opposite to the North Road Bridge, is a small culvert containing a pipe (fig 16, **C**) which discharges water from the pond formerly inside the Dower House walled garden, now railed off from the car-park (fig 16, **D**).

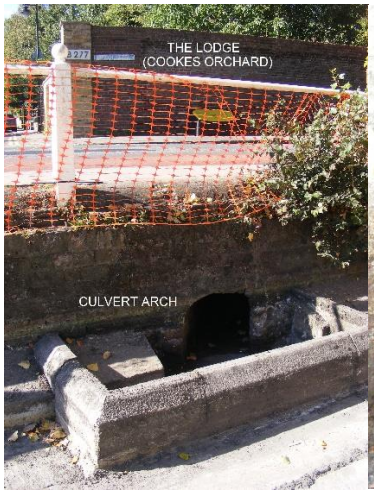
The north-west corner; flint layer and Lodge lands culvert.



There are two features of interest in this area of the pond. The first is a thin deposit of nodular flint located beneath the pond north wall (fig 16, **E**); this feature is unexplained; it may be the remains of an earlier watercourse or pond wall, or a hard standing surface, perhaps a yard or a thoroughfare (fig 21).

Fig 21 – Lower Town Pond, north wall; the flint layer stratified beneath the wall brickwork.

The second feature is an arched outfall in the pond west wall for a culvert running diagonally west of north-west from it under North Street towards the corner of the Lodge Lands – formerly Cookes Orchard, the kitchen garden to Stone Court until 1785. This drained a short canal and bathing place which lay along the southern boundary of the Lodge estate, shown on plans from the later 18th century (fig 16, **F** and **G**). The canal has been cut in half by the War Memorial Garden, and the surviving eastern half with the bathing place was filled in (figs 22-23).



Figs 22 and 23 – Lower Town Pond, arch and culvert from the Lodge Lands

Part 5; The Leoni Bridge – conclusions

The Leoni Bridge forms a significant element of a landscaping programme implemented by Thomas Scawen in the 1730s, after his acquisition of the Stone Court Estate. This programme has few parallels in England, and its survival is of great importance not only locally - as a product of the ambitious mind of its creator/owner - but nationally in the use of water in such a formal way to beautify and benefit a townscape in addition to the improvement of a private estate. The opportunity taken to survey its structure has enabled a better understanding of its construction that would otherwise remain unrecorded, and highlights the need for its continued care, maintenance and preservation.

Andrew C. Skelton - 12/10/2023, revised 28/10/2023.