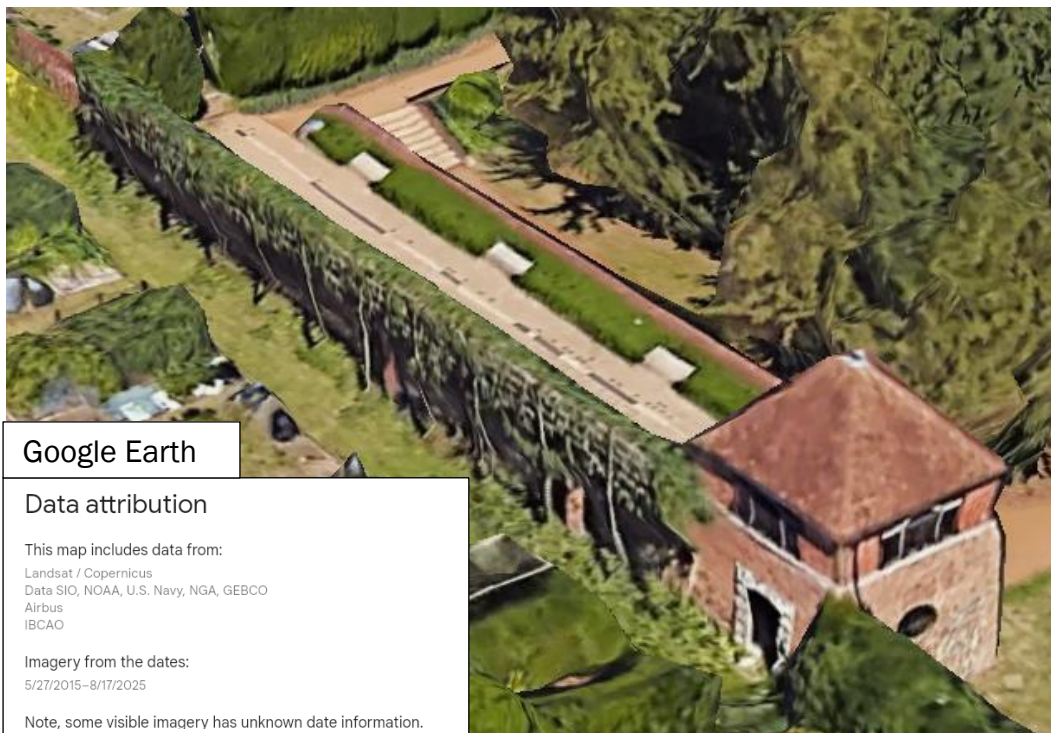


CAVERSHAM COURT GARDENS, CAUSEWAY

STRUCTURAL REPORT



Google Earth

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Note, some visible imagery has unknown date information.

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CAVERSHAM COURT GARDENS, CAUSEWAY

STRUCTURAL REPORT

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CAVERSHAM COURT GARDENS, CAUSEWAY**STRUCTURAL REPORT****C O N T E N T S**

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1. INTRODUCTION

This structural report has been prepared following the inspection of a localised area of the Causeway west retaining wall at Caversham Court Gardens, Church Road, Reading, RG4 7AD. SFK were appointed to inspect the wall locally and provide advice on appropriate investigation and structural repairs. This report will be used to support the application for listed building consent to carry out investigations and repairs.

2. BACKGROUND & INFORMATION AVAILABLE

The Causeway underwent a major restoration and repair project in 2008 which was designed and supervised by Hampshire County Council. Most of the east retaining wall was fully rebuilt. The west wall had previously had soil banked up against it over its full height. This was removed and extensive repairs and rebuilding was carried out.

- Hampshire County Council – Caversham Court Garden Restoration – construction issue drawings and NBS specification. Dated Sep 2008 ref: E1280 – Rev C1. This includes the following Causeway drawings.

Sheet Contents	Drawing No.	Revision
Plan of Causeway as proposed	E1280-221	C1
Causeway East and West elevations (part 1) as existing	E1280-222	C1
Causeway East and West elevations (part 2) as existing	E1280-223	C1
Causeway East and West elevations (part 1) as proposed	E1280-224	C1
Causeway East and West elevations (part 2) as proposed	E1280-225	C1
Causeway Elevations	E1280-226	C1
Causeway existing and proposed sections	E1280-227	C1
Section through Causeway as extg and proposed	E1280-230	C1

- A selection of photographs from former Hampshire County Council Architect, Giles Pritchard, showing the Causeway repair work undertaken in 2008.

3. DESCRIPTION

The Causeway, Fig. 3.1, is part of Caversham Court Gardens which is owned by Reading Borough Council. The Causeway is Grade II listed and the listing details are reproduced below. The Causeway was first listed on 14-Dec-1978.

“Details

CHURCH ROAD 1. 5128 (South Side) Caversham Retaining walls to raised walk to Riverside Garden Pavilion at Caversham Court SU 7074 11/446 II 2. C17. Mostly brick, partly flint with brick banding and buttresses (to west). Varies from 8 to 5 foot high (lower to east, formal side). The retaining wall of the terrace walk is continued north up to the church yard retaining wall (qv) although interrupted by the allotments entrance (flint base with brick lacing courses, buttresses and upper courses).

Listing NGR: SU7083474829”



Fig. 3.1 Aerial view showing the Causeway at Caversham Court Gardens (Gazebo is at south end).

(Imagery ©2025 Airbus, Maxar Technologies, Map Data © 2025)

Elevation photos are shown in Fig. 3.2 to 3.7. The west wall outer elevation face is largely obscured from general views by a line of trees planted in front of the wall.



Fig. 3.2 Causeway, east wall elevation looking north



Fig. 3.3 Causeway, east wall elevation looking south (towards Gazebo)



Fig. 3.4 Causeway, west wall elevation looking north



Fig. 3.5 Causeway, west wall elevation looking south



Fig. 3.6 Causeway, west wall elevation looking south at south end



Fig. 3.7 Causeway, west wall elevation from walkway level looking north

The Causeway is located at the west end of Caversham Court Gardens. The east side has a pathway that is part of the Gardens. From the Gardens, the west side can only be accessed through the ground floor of the Gazebo through metal gates which at the present time are usually kept locked. The west side is adjacent to public allotments which also provide another means of access.

The causeway is approximately 5.2m wide and 24m long. The retained height varies from approximately 2m at the south end to approximately 1.3m at the north end. The structure of the walls is described based on the HCC construction drawings and on photographs taken during the restoration work carried out in 2008. The height of the brick walls on both sides was increased to form new parapet walls to a central path leading to the Gazebo at the south end.

The east wall was largely rebuilt with a new stepped concrete foundation. The wall comprised a blockwork cavity wall infilled with concrete and assumed reinforced. This wall was faced with brickwork and flint, Fig. 3.8. The wall also had metal tie rods taken through to the west side of the wall.



Fig. 3.8 Causeway, east wall during restoration works in 2008

For the west wall much of the brick and flint wall was rebuilt matching the existing. At the southern end panels were repaired. This included repair and strengthening of brick piers, an additional pier, ties rods through to the east side and ground anchors, see Fig. 3.9. Drawings also indicate horizontal Helifix Helibars in the brick bands, but the photos available do not confirm if this was installed.



Fig. 3.9 Causeway, west wall at south end during restoration work in 2008

For the first bay, Bay 1, adjacent to the Gazebo on the west side the rear of the wall appears to have been largely rebuilt, Fig. 3.10.



Fig. 3.10 Causeway, rear of west wall at south end, first bay adjacent to Gazebo during restoration work in 2008

From the photos it is noted that the repaired west wall was left with an existing bulge in Bay 2 as shown in Fig. 3.11 and 3.12.



Fig. 3.11 Causeway, west wall at south end, bulge in repaired Bay 2 in 2008



Fig. 3.12 Causeway, west wall at south end, bulge in repaired Bay 2 in 2008

3.1 Geology

With reference to the British Geological Survey (BGS) maps, for Superficial Deposits, the site is close to a boundary between an area with no records and an area with records of Alluvium – clay, silt, sand and gravel. The Bedrock is described as Seaford Chalk Formation and Newhaven Chalk Formation (Undifferentiated)-Chalk.

4. SFK INSPECTION

The initial inspection was undertaken on 22 October 2025 by Nigel Winterbottom, Associate Structural Engineer at SFK Consulting, with a further inspection on 30 October 2025. The inspections were recorded through photos included in the report and through the drawing provided in Appendix A. The inspections were limited to the west wall at the south end to the first three bays and a short length just north of Bay 3. Bay 2 was the particular focus as this is where concern had been raised over a large bulge in the wall.

Following the first inspection (due to the bulge in Bay 2) it was recommended to:

1. Add Heras fencing and signage to close off the top level of the southern half end of the causeway to the public.
2. Add Heras fencing and signage to close off access around the bulged section of the wall from the RBC allotments (lower level).

Just in front of the wall there are a series of trees (possibly small-leaved lime) at approximately 2.5m centres. In front of each tree trunk is a metal T post which is embedded in the ground. Four lines of wires run between the posts at the top and these have been used to train the tree branches to grow horizontally.

There are a series of clay, weep hole pipes along the bottom of the wall. In Bays 1-3 there are typically two per bay. All the pipes were dry at the time of inspection and there was no evidence of staining below the pipes to indicate they are active. The depth of a few weep holes was probed and found to be typically around 500mm.

4.1 West wall - Bay 1

Bay 1 abuts the Gazebo at the south end and has a brick pier at the north end, Fig. 4.1. It comprises horizontal and vertical brick bands with flint infill panels. The bay is in good condition with no signs of movement or cracking.



Fig. 4.1 West wall Bay 1

4.2 West wall - Bay 2

Bay 2 sits between two brick piers and comprises horizontal and vertical brick bands with flint infill panels, Fig. 4.2.



Fig. 4.2 West wall Bay 2

The panel has a significant bulge over an approximate area of 2m wide and 1.5m high, Fig. 4.3 & 4.4. The peak of the bulge is around 900mm above ground level and projects approximately 150mm from the general wall face, Fig. 4.5. Although bulged the flint and brickwork has not spalled. There is some local cracking to the mortar around the flintwork around the peak area of the bulge, Fig. 4.6. The mortar may appear slightly darker in this area which could indicate a degree of dampness.



Fig. 4.3 West wall Bay 2



*Fig. 4.4 West wall Bay 2
looking south along wall to
highlight bulge*



*Fig. 4.5 West wall Bay 2
bulge projects approx.
150mm at peak*



Fig. 4.6 West wall Bay 2 – local mortar cracking at peak of bulge

4.3 West wall - Bay 3

Bay 3 sits between two brick piers and comprises horizontal and vertical brick bands with flint infill panels, Fig. 4.7.



Fig. 4.7 West wall Bay 3

The panel has a small area of bulging in the bottom right-hand corner. There is no cracking to the mortar and no loose material. The projection of the bulge is approximately 50mm, Fig. 4.8. Other than this defect the panel is in generally good condition.

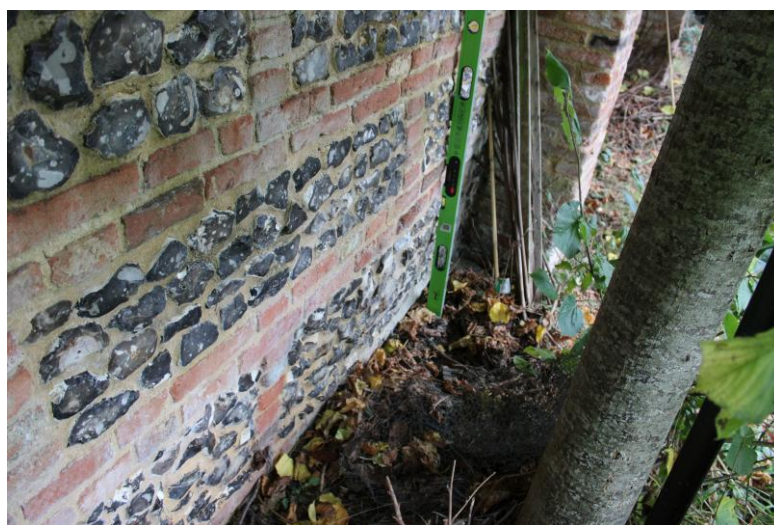


Fig. 4.8 West wall Bay 3 – small local bulge at bottom right hand corner

The wall north of Bay 3 was generally in good condition. Just north of pier 3 to Bay 3 is a series of four ground anchors through the wall which is mainly brick with flint banding at the bottom, Fig. 4.9. Adjacent to the first anchor there was a very small area of local bulge projecting approximately 50mm, Fig. 4.10.



Fig. 4.9 West wall just north of Bay 3



Fig. 4.10 West wall just north of pier 3 (to Bay 3) – small local bulge

4.4 Inspection from walkway level

The walkway comprises planting beds either side of a central pathway. The beds also have concrete benches positioned within them, two along the west side and three along the east side.

On the west side to Bay 2 (with the large bulge) the parapet, planting bed and path were inspected, Fig. 4.11. There was no indication of movement to the parapet and no sign of movement or depression in the soil or path surface.



Fig. 4.11 West wall parapet and planting bed at Bay 2 from walkway level

5. DISCUSSION & RECOMMENDATIONS

As the Causeway is listed any repairs are likely to require listed building consent. This should be checked and obtained before commencing any work.

For Bay 2 the 2008 photographs show that at the time of repairs the wall was left with a large bulge. It is assumed this was left to retain original materials and minimise intervention. With the additional strengthening and tying of the piers and the possible introduction of Helifix Helibars to the brick bands, it is assumed this was considered to provide sufficient strength to the wall to prevent any further movement.

Comparing Fig. 3.11 to Fig.4.3 and Fig. 3.12 to Fig. 4.4 the extent and projection of bulge do appear very similar. However, this is subjective and no measurements are available of the original bulge. The current peak bulge is around 150mm. If the bulge had significantly worsened since 2008, then it would be expected that the flints would have loosened and fallen out. This has not occurred but some cracking around the flints has occurred. This may be due to water ingress through the wall.

It is considered that the west Bay 2 is not at immediate risk of collapse as the bulge has been present since 2008 and has only marginally worsened since then over 18 years. However, it is important that local investigation is carried out together with repairs. The investigations should aim to establish the following.

1. Determine the overall thickness of the wall (this is estimated to be between 400 and 500mm).
2. Confirm the condition of the rear of the wall in the area of the bulge and if this is also bulged or near vertical. Establish if there is any obvious route/cause of water/damp penetration through the wall from the rear and if possible if the drainage path to the weepholes is clear.
3. Determine the thickness of flint facing (this is likely to be 100-200mm) and the condition of the brickwork behind.

To carry out this investigation in a practical and safe way it is proposed that the first step would be to add temporary propping in front of the bulged section. This would help stabilise the wall and prevent further loosening of any materials during investigations and repairs. The second step would be to locally excavate by hand to the rear of the wall behind the bulge. This will enable items 1 and 2 above to be established. This also locally relieves the wall of the ground pressure from behind and enables the next step to be carry out more safely. Step 3 would be to carefully remove local flints from the front in the areas of cracked mortar and set them aside for reuse. This will establish the depth of the flintwork (item 3 above) and allow the condition of the brickwork behind to be checked. It is hoped that the extent of repairs required will be limited to locally replacing the original flints in new lime mortar and repointing around the flint and brickwork. However, this can only be confirmed once the investigation work is undertaken. To help improve the bond of the flint with the brick wall, short lengths of Helifix Helibar can, if necessary, be fixed into the brick and bent at 90 degrees to sit within the joints between the flints. A conservation architect's advice should be sought for details of the lime mortar for repairs.

Should the condition of the rear of the wall be of concern then additional repair work may be required but the type of repair will depend on what is discovered. With the excavation proposed only up to the edge of the path, working space will be limited. One approach to repair if required, may for example, be to introduce a mass concrete backing behind the brick wall. However, this would require further design and sequencing consideration.

Once repairs are complete the excavation can be infilled with the original excavated material. The temporary propping can then be removed. It is recommended the general wall condition is inspected, and in particular checked at the bulge, at intervals not exceeding five years.

Two further bulges were noted but these were much smaller, near the bottom of the wall and adjacent to the brick piers. Studying the 2008 photo suggests these were

probably present at that time. There is no cracking of the mortar at these locations. No action is recommended to these areas, other than regular inspection as noted above.

The trees have been planted close to the wall. They have some potential to cause damage to the wall either from their roots or if soil type at founding level is susceptible to volume change, then through shrinkage or heave movement. However, from the inspection there were no signs of tree induced damage. This should be checked as part of regular inspections.

5.1 Summary

As the Causeway is listed any repairs are likely to require listed building consent. This should be checked and obtained before commencing any work.

For full details of proposed repairs and sequence of works refer to SFK drawing in Appendix A.

West retaining wall – Bay 2

Step 1. Add temporary propping to front of wall at bulge position.

Step 2. Hand excavate behind the wall at the bulge position. Inspect rear condition of wall and determine if additional repairs are required.

Step 3. Carefully remove local flints from the front in the areas of cracked mortar and set them aside for reuse. Inspect and repair.

Step 4. Backfill the excavated material at the rear of the wall.

Step 5. Remove temporary propping to front of wall.

The above repairs should be carried out as soon as possible and within one year. Following repair, the wall should be inspected for its condition at regular intervals not exceeding five years.

6. APPENDIX A – SFK DRAWING

25143-SFK-CW-ZZ-DR-S-0001 P01 Causeway – Investigation and Repair to local bulged area of west retaining wall

(Note, Appendix A has an A3 reduction of the original A1 drawing which is available separately)

