

Retaining Structure to Pilgrims Way East Otford, Kent.

Structural Inspection Report



Reference: 23-0522

Revision: A

Date: 4th July 2024

DRAINAGE

- Drainage Strategies
- S104 Drainage Design
- SUDS
- Flood Risk Assessments
- CSH SUR1

HIGHWAYS

- Transportation Assessments
- S38/278 Highway Design
- Junction Modelling
- Traffic & Parking Surveys
- Remedial Assessments

STRUCTURAL ENGINEERING

- All Structural Design
- Temporary Works
- Specialist Foundations
- Multi Storey & Basements
- RC Detailing

SPECIALIST SERVICES

- Site Assessments
- CDM 2015 Support
- TEKLA - Steelwork
Fabrication drawings
- Expert Witness

Document Control Sheet

Issue	Status	Prepared / Revised by	Verified By	Date
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Rev A				

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Please note that this report is not a full Structural, Building, or Valuation Survey but is confined to the matters described therein. It does not include any mechanical, heating or electrical systems, external surfaces or landscaping features, nor any fixtures, fittings or sanitary ware.

We have not inspected woodwork or any parts of the structure which are covered, inaccessible or otherwise unexposed and we are therefore unable to report whether any such part of the property is free from defect.

1.0 Introduction

BdR was commissioned by Trevor Kennett of Sevenoaks District Council to undertake a structural appraisal of the retaining structure and earth embankment adjacent to Pilgrims Way East, Otford.

The survey was carried out on 15th November 2023.

Access to the retaining structure was limited, due to the heavy vegetation and that the recreation area on the old chalk pit was closed off due to a risk of sink holes.

A previous report carried out by TSC Designs Ltd in May 2017 is used for reference and is attached in Appendix A.

2.0 Observations

The existing chalk pit sides have been reinforced with concrete piles which appear to be in pairs which have then been tied back using rock anchors top and bottom.

The exact construction of the remedial works, that were carried out in the 1980's are not known and as stated above access was limited and only a visual inspection was possible, from a distance.

What could be seen of the piles and embankment from the lower levels, was that the area was heavily covered in vegetation and that the trees that were growing were generally vertical and hence not showing signs of any ground movement.

Along the top of the chalk face the footpath, kerb line and carriageway showed no signs of wall or embankment failure, being in a good condition (see photos 2 & 3). It should be noted that, we do not know if the road has been resurfaced since the works to the chalk face were carried out.

3.0 Conclusion and Recommendations

From the limited visual inspection that has been possible, we are of the opinion that the chalk pit embankment adjacent to Pilgrims Way East is stable and at present requires no remedial works.

We would recommend that, following the remedial works to the Chalk pit itself and when the lower recreation area has been fully reopened, a topographical survey be carried out, which identifies the locations of the embankment supports. Monitoring stations can then be fixed to the concrete piles and to the footpath above, which could then be checked on a regular basis and would give a more accurate record of any movement, if it occurs.

The retaining structure should be inspected on a minimum 2 yearly basis.



Photo 1 – Location Plan.



Photo 2 – Looking west along Pilgrims Way East.



Photo 3 – Looking East along Pilgrims Way East.



Photo 4 – Concrete piles with ties visible.



Photo 5 – Vegetation growing on embankment.



Photo 6 – Concrete piles to wall.

Appendix A



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STRUCTURAL REPORT
THE RETAINING WALL TO THE CHALK PIT
OTFORD, KENT

CLIENT: SEVENOAKS DISTRICT COUNCIL

DATE: MAY 2017



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RETAINING WALL – CHALK PIT

1.0 BRIEF

We have been requested by Sevenoaks District Council to carry out a structural appraisal of the retaining wall and earth face adjacent to Pilgrims Way East. Direct access to the area was challenging but achieved in some locations which proved rewarding.

2.0 HISTORY AND FINDINGS

Local history regarding the Chalk Pit is well documented but in the early 1980s a land slip did occur adjacent to Pilgrims Way East which resulted in extensive engineering works being carried out. To stabilise the chalk face vertical precast concrete piles were driven into the bedrock and then tied back using rock anchors. In between the piles steel mesh was pinned to the chalk. The chalk face was then sprayed using concrete (gunite) for protection and structural reasons. The full extent of the works is difficult to establish but is thought to relate to the length of the metal railing adjacent to the footpath. Observations from the playing field and when traversing the earth face since the remedial works revealed that the area has become completely wooded. The concrete piles and gunite faces can be seen in some areas but full access is difficult due to the steepness of the embankment and tree/shrub cover.

In one location some recent excavations have been carried out forming a pathway and plateau, but the reasons for this work is unclear. In summary, the structural stability of the embankment face appears sound with no obvious signs of distress. It is considered that the tree growth and associated roots generally stabilises the chalk face against frost damage and locks the surface together maintaining a homogenous matrix.

At the upper level of the chalk face the pavement and kerb lines are sound showing no signs of vertical or horizontal displacement suggesting that the embankment has remained stable since the works were carried out. When walking the footpath not only adjacent to the piling works but along the full length of the road from Tudor Drive to the A225 no evidence of ground movement was noted.



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3.0 CONCLUSIONS

From our observations we are of the opinion that the Chalk Pit embankment adjacent to Pilgrims Way East is stable and at present requires no remedial works. It is recommended that the trees/shrubs growing on the chalk face are left in position as they are providing ground cover, protection against frost damage and the roots are bonding the surface forming a homogenous matrix.

As with any structure of this nature it is recommended that an inspection is carried out on a 2-3 year cycle to monitor and then report accordingly.

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