PRP:
consulting engineers & surveyors

**PRP Northampton**
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# Further Structural Inspection Report

# for

# 8, Vine Terrace, Alwalton

for:

[redacted]
Amplius
1 Crown Court
Crown Way
Rushden
NN10 6BS

| Date | Issued | Revision |
|---|---|---|
| 29 July 2026 | | |

Reference: 64288-02

Prepared by: [redacted]
BEng(Hons) CEng
MIStructE FGS ACIArb MAE
Associate

## 1. INTRODUCTION

1.1 Following our initial inspection of the above property and the issue of our structural inspection report (Reference 64288-01 dated 5th March 2025), we revisited the property to inspect and report upon the following items:

i) The external test pit excavated to the rear left hand corner of the property as referred to in items 4.6 and 4.7 of our initial report.

1.2 Only the aspect of the property noted in item 1.1 above was inspected in detail, and this report is strictly limited to those observations. No opinion is provided on other elements. This report should be read in conjunction with our initial report (reference 64288-01, dated 5th March 2025).

1.3 The further visit to inspect the external test pit was carried out on Monday 29th June 2026 when the weather was warm and sunny. Photographs taken at the time of inspection (and referred to in sections 2 and 3 of this report) are provided in Appendix I.

1.4 A CCTV survey of the drainage serving the property had been commissioned by Amplius (as per items 4.3 and 4.4 of our initial report) and was undertaken on Tuesday 23rd September 2025 by Northants Drainage Limited. The report was provided to PRP on Thursday 21st May 2026 for our information.

1.5 References to left and right are given as viewing the property from the front elevation.

1.6 The laboratory results obtained from the geotechnical soils testing of the samples and root samples retrieved from the excavated test pits are provided in Appendix II and III respectively.

## 2. THE PROPERTY

2.1 The property was a two bedroom end of terrace dwelling house located at 8, Vine Terrace, Oundle Road, Alwalton, and according to the historical mapping available was likely to have been constructed circa 1990 (see photographs 1, 2 and 3).

2.2 The form of construction appeared to comprise loadbearing masonry walls supporting timber upper floors and an asymmetric pitched, tiled roof which spanned front to back. The property was arranged with two bedrooms and a bathroom at first floor level with a hallway, living room and kitchen at ground floor level. It was noted that the front roof pitch extended down, over the front section of the house, to a lower eaves level (see photograph 1).

2.3 It was noted that the external leaves of the external walls were of stone construction to the front and left hand gable walls, with brickwork present to the rear external wall.

2.4 Drainage was present to the front, left hand side and rear of the property as evidenced by a kitchen waste and associated gulley below the front kitchen window, a rainwater down pipe to the front left hand corner of the property, two manhole covers proximal to the front left hand corner of the property, two manhole covers proximal to the rear left hand corner of the property, a rainwater down pipe and an inspection cover to the rear left corner of the property, and a rainwater down pipe to the rear right hand corner of the property.

2.5 With regard to significant vegetation, a pine tree was present to the front right hand corner of the property and a laurel hedge was present to the front and part of the front left hand boundary, a small shrub was noted to the rear left hand corner of the property, and a mature tree was present beyond the rear garden boundary approximately 10m from the rear external wall of the property.

## 3. OBSERVATIONS AND DISCUSSION

3.1 As per items 4.6 and 4.7 of the initial report, a test pit was excavated adjacent to the rear external wall of the property (see photographs 4 and 5). It is noted that the excavation of the test pit had been arranged by Amplius and had been excavated on the day of PRP's further visit to the site.

3.2 The test pit had been excavated adjacent to the rear external wall of the property (see photographs 4, 5, 6, and 7) and revealed brickwork which extended to a depth of four courses below damp proof course level, below which a single course of blockwork was present (see photographs 5, 6, and 7). The masonry forming the external wall was supported by a 750mm deep concrete foundation which projected approximately 160mm from the face of the external wall. The total depth to the underside of the foundation was approximately 975mm below external ground level.

3.3 The ground encountered in the test pit varied with depth with the sides of the excavation noted to comprise made ground which transitioned to clay soils towards the base of the excavation. Roots were noted to be present within the depth of the test pit.

3.4 A sample of the soil from the base of the test pit was retrieved and sent to an accredited laboratory for testing of the soil's geotechnical properties, and a sample of the roots present in the test pit were retrieved and sent for identification.

3.5 The nature of the soils revealed in the base of test pit was consistent with the upper horizons of the Oxford Clay Formation which the geological map for the area indicated should underlie the site.

3.6 The results of the laboratory testing on the soil sample retrieved at a depth of 1m below existing ground level from the test pit (a copy of which is provided in Appendix II) indicated that the Plasticity Index of the soils was 53% and therefore possessed a high potential for change in volume with change in moisture content, in accordance with NHBC guidance.

3.7 A guide to the possible desiccation of soils can be obtained using Driscoll's formulae for cohesive soils. The first equation takes into account the Moisture Content and the Liquid Limit of the tested soil sample as per the following relationship:

*Moisture Content/Liquid Limit < 0.4 = Desiccation*

3.8 In respect to the results gained from the sample retrieved from the test pit, the value of Moisture Content is 29.9% and the Liquid Limit is 81%, and using the above formula provides a value of 0.36 indicating that desiccation was likely to be present in the soils. The second formula compares Moisture Content to the Plastic Limit in accordance with the following relationship:

*Moisture Content > Plastic Limit + 2% = No Desiccation*

3.9 In respect of the results gained from the test pit, the value of Moisture Content is 29.9% and the Plastic Limit is 28%, and using the above formula this indicates that the Moisture Content is less than the Plastic Limit + 2% and therefore would indicate that desiccation was likely to be present in the soils.

3.10 Laboratory testing indicates soils beneath the foundations comprise cohesive shrinkable clay with the potential for seasonal volume change. The presence of nearby tree roots indicates the moisture content of these soils could be influenced by adjacent vegetation.

3.11 The results of the laboratory testing on the root samples retrieved from the test pit are provided in Appendix III. The root analysis confirmed that the samples submitted for identification included 3No. roots belonging to the family Prunus (cherries, plums and damsons, almonds, peaches, and apricots, blackthorn/sloe, as well as cherry laurel and Portugal laurel), 6No. roots belonging to the family Acer (maples and sycamores) and 7No. further samples which could not be positively identified.

3.12 The roots identified are considered likely to be associated with the trees and shrubs present to the rear of the property (see initial PRP report 64288-01). However, given the extent of the vegetation present, it is advised that a suitably qualified arboriculturist is appointed to confirm all the types of trees and shrubs present to the rear of the property in order that the tree vegetation present can be aligned with the root types identified in the test pit. However, among the vegetation present, the most significant was an assumed cherry tree located approximately 10m from the rear external wall of the property and estimated as being of mature height.

3.13 The NHBC guidance outlined in Chapter 4.2 classifies cherry as a medium water demand tree. An analysis was conducted in accordance with this guidance, which determined that to prevent adverse effects on the property's foundations, a foundation depth exceeding 1.25m below existing ground level would be required (see calculations in Appendix IV). The required foundation depth of 1.25m is deeper than the foundation depth of approximately 0.975m below existing ground level recorded in the excavated test pit.

3.14 From the calculations undertaken it is concluded that the presence of the nearby cherry tree (and other proximal vegetation), combined with the shrinkable clay soils and shallow foundation depth, were contributing factors to the movement observed in the property.

3.15 The CCTV survey undertaken by Northants Drainage Limited and the subsequent report did not indicate defects were present within the surveyed drainage.

3.16 The findings of the test pit investigations, laboratory soil testing, root identification and foundation assessment, collectively indicate that the movement affecting the property is considered to be attributable to the combined effects of insufficient foundations founded within shrinkable clay soils that have been subject to desiccation associated with the influence of nearby vegetation.

## 4. CONCLUSION AND RECOMMENDATIONS

4.1 The information provided by the laboratory test results indicated that the soils beneath the property foundations possessed a high potential for change in volume with change in moisture content. The existing foundations, as exposed in the excavated test pit, extended to a depth of approximately 0.975m below existing ground level and were therefore deemed insufficient for the prevailing ground conditions, particularly when considering the influence of nearby vegetation (see items 3.12 and 3.13 above).

4.2 Potential remedial options include either the removal of the trees impacting the clay soils or underpinning the foundations to an appropriate depth, either by traditional underpinning or injection grouting. The advantages and considerations of both options are discussed in the following paragraphs.

4.3 The removal of the trees would allow the underlying soils to gradually return to their natural state. However, it is important to note that the rehydration process can be prolonged and may result in further structural movement during soil recovery. Rehydration of previously desiccated clay soils may also result in clay heave, which has the potential to cause further structural movement during the recovery period. Given the potential impact of the nearby vegetation on the property, the feasibility and implications of removal should be carefully evaluated in consultation with a suitably qualified arboriculturist. **It should be noted that the assumed cherry tree appears to be located on Third Party land.**

4.4 The property could be underpinned; however, the process of these works could affect the stability of the proximal vegetation and is likely to be expensive. In addition, areas of the ground floor may need to be removed and reinstated as suspended floors. It is therefore considered that the option of removing the trees is likely to represent the least intrusive structural intervention.

4.5 We should note that the ownership of all the proximal trees/vegetation must be checked and all necessary permissions and consents must be obtained prior to any works being undertaken. If permissions cannot be obtained then underpinning of the property would need to be undertaken.

4.6 If it is decided to remove the trees, it is strongly advised that the internal and external cracking and damp course levels around the property are accurately monitored over a minimum period of twelve months following removal in order to confirm whether the property is positively reacting to the remedial measures or whether the movement and cracking is continuing to worsen and is therefore progressive and requires intervention (such as underpinning due to the shallow foundations) to arrest the movement.

4.7 Following the crack and level monitoring works noted above it would then be possible to confirm whether remedial works can be carried out to repair the cracking, or whether further investigation or monitoring works will need to be undertaken.

4.8 A summary of the noted defects, possible causes and further actions required are provided in the table below.

*Table 1*

| Defects evident from further inspection | Contributing factors | Primary affected structure | Further actions |
|---|---|---|---|
| i) Insufficient foundation depth | i) Volumetric change of clay soils below foundations exacerbated by effects of proximal vegetation | i) Masonry external walls<br>ii) Foundations | i) Suitably qualified arboriculturist to undertake full survey of existing vegetation to confirm positions and types of trees – see item 4.3<br>ii) Confirmation of ownership and permissions required relating to proximal vegetation – see item 4.5<br>iii) Subject to confirmation by arboricultural survey and all necessary permissions, consider removal of influencing vegetation followed by a minimum twelve month monitoring period. If this is not feasible, consider underpinning – see items 4.2 to 4.7 |

The notes below form an integral part of this report.

Please note that:

1. We did not inspect woodwork or other parts of the structure which were covered, unexposed or inaccessible, and we are therefore unable to report that any such part of the property is free from defect.
2. No attempt has been made to establish and no liability whatsoever is accepted for the possible presence of heavy metals, chemical, biological, electromagnetic or radioactive contamination or pollution, or asbestos or mould of any kind, or radon, methane or other gases, or springs, water courses, sink holes or the like, or noise or vibratory pollution.
3. This report was prepared on the instructions of the client(s) at the address shown at the beginning of this report and is exclusively for his/her/their benefit. Complete copies of this report may, however, be made available to parties having a direct interest with or on behalf of the client(s) in matters related to the contents of this report.
4. No reliance may be placed in the contents of this report by any third party except with the express agreement of the original client and the written agreement of PRP. Such written agreement may require the payment of an additional fee.
5. For the avoidance of doubt, the parties confirm that this report shall not and the parties do not intend that this report shall be construed as confering on any party any rights to enforce any term of this Agreement pursuant to the Contracts (Rights of Third Parties) Act 1999.

## APPENDIX I

## PHOTOGRAPHS



Photograph 1 – A view of the front elevation of the property.



Photograph 2 – A view of the left hand gable elevation of the property.



Photograph 3 – A view of the rear elevation of the property.



Photograph 4 – A view of the excavated test pit to the rear of the property.



Photograph 5 – A further view of the excavated test pit to the rear of the property.



Photograph 6 – A further view of the excavated test pit to the rear of the property.



Photograph 7 – A further view of the excavated test pit to the rear of the property.

## APPENDIX II

## GEOTECHNICAL SOILS TESTING RESULTS

# TEST REPORT

**ISSUED BY SOIL PROPERTY TESTING LTD**

**DATE ISSUED: 09/07/2026**

UKAS TESTING 0998

| | |
|---|---|
| **Contract** | **8 Vine Terrace, Alwalton** |
| **Serial No.** | **50433_1** |

**Client:**

PRP UK Ltd

[redacted]
Old Harborough Road
Brixworth
Northampton
NN6 9BX


***Soil Property Testing Ltd***

**15, 16, 18 Halcyon Court, St Margaret's Way,**
**Stukeley Meadows, Huntingdon,**
**Cambridgeshire, PE29 6DG**

**Tel: 01480 455579**
**Email:** enquiries@soilpropertytesting.com
**Website:** www.soilpropertytesting.com


**Samples Submitted By:**

PRP UK Ltd

**Samples Labelled:**

8 Vine Terrace, Alwalton

**Approved Signatories:**

[redacted]
Technical Director

[redacted]
Operations Manager

[redacted]
Site Services Manager

[redacted]

**Date Received:** 30/06/2026

**Samples Tested Between:** 30/06/2026 **and** 09/07/2026

**Remarks:**

For the attention of [redacted]
Your Reference No: 64288

**Notes:**

1. All remaining samples or remnants from this contract will be disposed of after 21 days from today, unless we are notified to the contrary.
2. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.
3. Tests marked "NOT UKAS ACCREDITED" in this test report are not included in the UKAS Accreditation Schedule for this testing laboratory.
4. This test report may not be reproduced other than in full except with the prior written approval of the issuing laboratory.
5. The results within this report only relate to the items tested or sampled.

# TEST REPORT

**ISSUED BY SOIL PROPERTY TESTING LTD**

**DATE ISSUED: 09/07/2026**

UKAS TESTING 0998

| | | | |
|---|---|---|---|
| **Contract** | **8 Vine Terrace, Alwalton** | | |
| **Serial No.** | **50433_1** | **Target Date** | 13/07/2026 |
| **Scheduled By** | PRP UK Ltd | | |
| | | | |
| **Schedule Remarks** | | | |

| Bore Hole No. | Type | Sample Ref. | Top Depth | Water Content (BSEN) | Liquid/Plastic Limits | Sulphate Content/pH Value | | | | | | | | | | | | | | | Sample Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TP1 | B | 1 | 0.98 | 1 | 1 | 1 | | | | | | | | | | | | | | | |
| **Totals** | | | | **1** | **1** | **1** | | | | | | | | | | | | | | | **End of Schedule** |

# TEST REPORT

**ISSUED BY SOIL PROPERTY TESTING LTD**

**DATE ISSUED: 09/07/2026**

UKAS TESTING 0998

| | |
|---|---|
| **Contract** | **8 Vine Terrace, Alwalton** |
| **Serial No.** | **50433_1** |

## SUMMARY OF WATER CONTENT

| Borehole /Pit No. | Depth (m) | Type | Ref. | Water Content (%) | Description | Remarks |
|---|---|---|---|---|---|---|
| TP1 | 0.98 | B | 1 | **29.9** | Stiff closely fissured light olive brown CLAY with occasional recently active and decayed roots and rare shell traces and orange staining. | |
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Method Of Preparation: BS EN ISO: 17892-1: 2014+A1:2022
Method of Test: BS EN ISO: 17892-1: 2014+A1:2022
Type of Sample Key: U = Undisturbed, B = Bulk, D = Disturbed, J = Jar, W = Water, SPT = Split Spoon Sample, C = Core Cutter
Comments:

Remarks to Include: Sample disturbance, loss of moisture, variation from test procedure, location and origin of test specimen within original sample, oven drying temperature if not 105-110C

# TEST REPORT

**ISSUED BY SOIL PROPERTY TESTING LTD**

**DATE ISSUED: 09/07/2026**

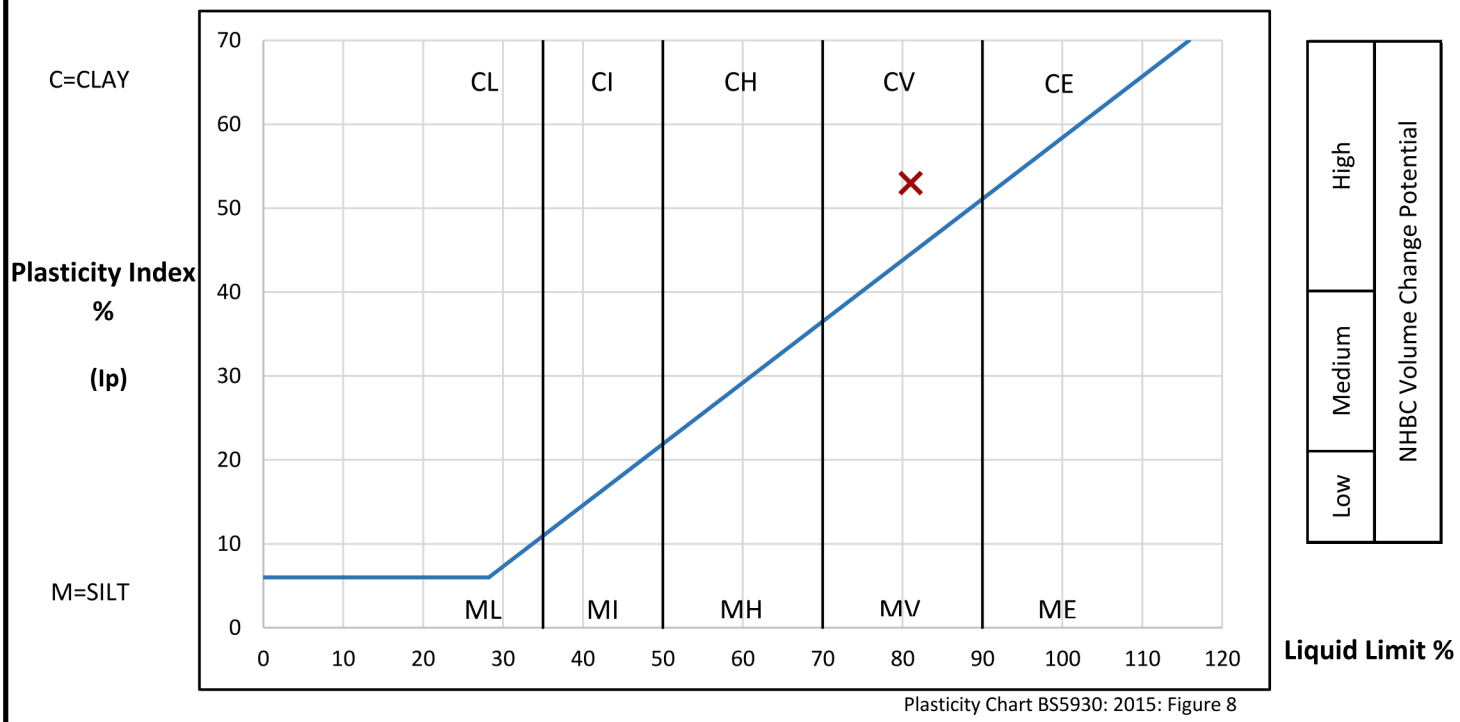
UKAS TESTING 0998

| | |
|---|---|
| **Contract** | **8 Vine Terrace, Alwalton** |
| **Serial No.** | **50433_1** |

## DETERMINATION OF WATER CONTENT, LIQUID LIMIT AND PLASTIC LIMIT AND DERIVATION OF PLASTICITY INDEX AND LIQUIDITY INDEX

| Borehole / Pit No. | Depth m | Sample Type | Sample Reference | Water Content (W) % | Description | Remarks |
|---|---|---|---|---|---|---|
| TP1 | 0.98 | B | 1 | 29.9 | Stiff closely fissured light olive brown CLAY with occasional recently active and decayed roots and rare shell traces and orange staining. | |

| PREPARATION | | | Liquid Limit | 81 % |
|---|---|---|---|---|
| Method of preparation | | From natural | Plastic Limit | 28 % |
| Sample retained 0.425mm sieve | (Assumed) | 0 % | Plasticity Index | 53 % |
| Corrected water content for material passing 0.425mm | | | Liquidity Index | 0.04 |
| Sample retained 2mm sieve | (Assumed) | 0 % | NHBC Modified (I'p) | n/a |
| Curing time | 70 hrs | Clay Content Not analysed | Derived Activity | Not analysed |




Plasticity Chart BS5930: 2015: Figure 8

| | |
|---|---|
| Method of Preparation: | BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 4.2 |
| Method of Test: | BS EN ISO: 17892-1: 2014 & BS 1377: Part 2: 1990: 3.2, 4.4, 5.3, 5.4 |
| Type of Sample Key: | U=Undisturbed, B=Bulk, D=Disturbed, J=Jar, W=Water, SPT=Split Spoon Sample, C=Core Cutter |
| Comments: | |

# TEST REPORT

**ISSUED BY SOIL PROPERTY TESTING LTD**

**DATE ISSUED: 09/07/2026**

| | |
|---|---|
| **Contract:** | **8 Vine Terrace, Alwalton** |
| **Serial No:** | **50433_1** |

## DETERMINATION OF THE SULPHATE CONTENT AND pH OF SOIL AND GROUNDWATER

| Borehole / Pit No. | Depth (m) | Sample | | Conc. of Soluble SO3 | | Calc'd Conc. Of SO4 (g/L) | pH Value | % Sample Passing 2mm Sieve | Description | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Type | Ref. | Water Soluble 2:1 (g/L) | Ground Water (g/L) | | | | | |
| TP1 | 0.98 | B | 1 | 0.14 | | 0.17 | 7.4 | 100 | Stiff closely fissured light olive brown CLAY with occasional recently active and decayed roots and rare shell traces and orange staining. | |
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| | |
|---|---|
| Method of Preparation: | BS1377: Part 1: 2016: 8.5, BS1377: Part 3: 1990: 5.3 Soil/Water Extract, 5.4 Groundwater |
| Method of Test: | BS1377: Part 3: 1990: 5.5 |
| Type of Sample Key: | U= Undisturbed, B= Bulk, D= Disturbed, J= Jar, W= Water, SPT= Split Spoon Sample, C= Core Cutter |
| Comments: | **Test not UKAS accredited** |
| Remarks to Include: | Sample disturbance, loss of moisture, variation from test procedure, location, and origin of test specimen within original sample. Oven drying temperature if not 105-110C. |

## APPENDIX III

## ROOT TESTING RESULTS

# Richardson's Botanical Identifications

Root identification
Vegetation surveys
Tree/Building investigations
Plant taxonomy

[redacted]

**Enterprise House**
**49-51 Whiteknights Road**
**Reading**
**RG6 7BB**

**Tel: (0118) 986 9552** *(Direct line)*
**E-mail:** richardsons@botanical.net
**Web:** www.botanical.net

**PRP**
**Catherine House**
**Old Harborough Road**
**BRIXWORTH**
**Northampton NN6 9BX**

*Your ref:* **64288**

*Our ref:* 91/7507

21/07/2026

Dear Sirs

**Root ID**

The samples you sent in relation to the above on 10/07/2026 have been examined. Their structures were referable as follows:

| **From site** | |
|---|---|
| 3 no. | Examined root: PRUNUS (Cherries, Plums and Damsons, Almonds, Peaches and Apricots, Blackthorn/Sloe, as well as the shrubby Cherry-laurel and Portugal-laurel). |
| 6 no. | Examined root: in some ways like ACER (Maples, Sycamores). |
| 3 no. | Examined sample: slightly unusual in structure - probably a piece of twig, rather than a root (origin - could be either ACER (Maples, Sycamores) - or - CARPINUS (Hornbeam)). |
| 2 no. | Both pieces of BARK only - insufficient material for recognition. |
| 2 no. | Both samples revealed too few cells for microscopic identification. |

Click here for more information: ACER CARPINUS PRUNUS

I trust this is of help. Please call us if you have any queries; our Invoice is enclosed.

Yours faithfully

[redacted]

* * Try out our web site on www.botanical.net * *

Identified with no information on vegetation, on or off site.

## APPENDIX IV

## FOUNDATION DEPTH CHECK

| | | | | | |
|---|---|---|---|---|---|
| PRP consulting engineers & surveyors | Project: 8 Vine Terrace, Alwalton | | | Job no.: 64288 | |
| | Calcs for: Existing Foundation Check | | | Start page no./Revision: 1 | |
| | Calcs by: CT | Calcs date: Jul-26 | Checked by: AW | Checked date: Jul-26 | Approved by: | Approved date: |

## FOUNDATIONS NEAR TREES

**In accordance with Clause 4.2.12 of NHBC Part 4: Foundations - Chapter 4.2**

Tedds calculation version 2.0.03

### Site Details

| | |
|---|---|
| Distance north of London | N = **72** mi |
| Distance west of London | W = **9** mi |
| Reduction depth due to climate variations - cl.4.2.4 | $Z_c$ = **0.05** m |

### Soil Details

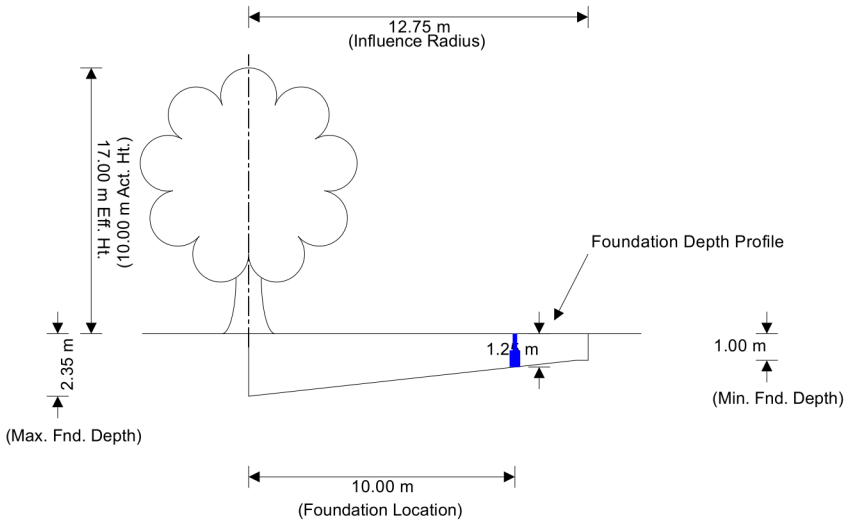
| | |
|---|---|
| Plasticity index from lab tests | $I_p$ = **53** % |
| Percentage of particles < 425 μm | $p_{425}$ = **100** % |
| Modified plasticity index - cl. 4.2.4 | $I'_p = I_p \times p_{425} / 100$ % = **53** % |
| Volume change potential - Table 1 | High |

### Details for Tree - 1

| | |
|---|---|
| Species of tree | Broad leaf - Wild Cherry |

tree is to remain at the site, with no further planting allowed.

| | |
|---|---|
| Water demand of tree - Table 3 | Moderate |
| Mature height of tree - Table 3 | $H_{m1}$ = **17.00** m |
| Influence radius - Table 3b | $r_{inf1} = 0.75 \times H_{m1}$ = **12.75** m |
| Measured height of tree | $H_{act1}$ = **10.00** m |
| Distance from centre of tree to face of foundations | $D_1$ = **10.00** m |
| Effective height of tree - Table 3a | $H_{eff1}$ = **17.00** m |




| | |
|---|---|
| Minimum foundation depth - Table 4B | $Z_{min}$ = **1.00** m |

Look up value for foundation depth - Chart 1 Soils with HIGH volume change potential

$Z_{LookUp1}$ = **1.30** m

| | |
|---|---|
| Required foundation depth | $Z_{req1} = Z_{LookUp1} - Z_c$ = **1.25** m |

| | | | | | | |
|---|---|---|---|---|---|---|
| PRP consulting engineers & surveyors | Project: 8 Vine Terrace, Alwalton | | | | Job no.: 64288 | |
| | Calcs for: Existing Foundation Check | | | | Start page no./Revision: 2 | |
| | Calcs by: CT | Calcs date: Jul-26 | Checked by: AW | Checked date: Jul-26 | Approved by: | Approved date: |

**Summary Table**

| Tree | Name | Distance (m) | Measured Height (m) | Effective Height (m) | Tree to be removed | Required Foundation Depth (m) |
|---|---|---|---|---|---|---|
| 1 | Wild Cherry | 10.0 | 10.0 | 17.0 | No | 1.25 |