

ARBORICULTURAL REPORT
at
16 Green Spring Avenue
Birdwell
Barnsley
South Yorkshire
S70 5RW

Client:
360Globalnet,
for LV Insurance

Client Address:
Regus House
Herald Way
Pegasus Business Park
Castle Donington
DE74 2TZ

Client Telephone:
0116 4781258

Insured:
Mr R Flavell

Claim Number:
LIV-SN-23-006594

JCA Ref:
20548/JC

Client Ref:
100-50-225844

Contents

Contents	2
1. Introduction	3
1.1 Purpose of the Report	3
1.2 Terms of Reference	3
1.3 Scope of the Report	3
2. Survey Conditions and Methods	4
2.1 Date of Inspection and name of Inspector	4
2.2 Data Collection Methods	4
3. Ground Investigation, Soil & Root Analysis	5
3.1 Introduction	5
3.2 Foundation Types and Depths	5
3.3 Soil Types	5
3.4 Root Analysis	6
4. Status of the Trees	7
5. Tree Descriptions & Recommendations	7
6. Discussion	8
7. Summary of Tree Specific Recommendations	8
8. General Recommendations and Observations	9
 Appendix 1: Tree Descriptions and Recommendations	 11
Appendix 2: Site Plan	12
Appendix 3: Author Qualifications	13
Appendix 4: Photos	14

1. Introduction

1.1 Purpose of the Report

- 1.1.1 This arboricultural report is required by our client as part of an investigation into suspected soil shrinkage subsidence damage at:

16 Green Spring Avenue, Birdwell, Barnsley, South Yorkshire, S70 5RW.

1.2 Terms of Reference

- 1.2.1 We are instructed by **360Globalnet** to visit the site and carry out an arboricultural survey covering all vegetation within likely influencing distance of the subject property. It has been requested that we only consider vegetation management options for the purpose of this report.
- 1.2.2 We have been supplied with details of the site investigation, which was carried out by **Drainage Repair Company**, and have included the salient points in this report. We have applied this information to our knowledge of trees and the arboricultural data we gathered on site and prescribed recommendations for current, or future action, where required.
- 1.2.3 We are to prepare our findings in a detailed report, making specific recommendations as to any arboricultural management which may be required.

1.3 Scope of the Report

- 1.3.1 The subject property is detached house with detached, prefabricated garage to the rear.
- 1.3.2 Damage has occurred to the garage only. Please see the **360 Globalnet Engineer's Report** for full details of the current damage at the subject property.
- 1.3.3 The distance between the vegetation surveyed and the buildings is measured from the closest part of the property.

2. Survey Conditions and Methods

2.1 Date of Inspection and name of Inspector

- 2.1.1 The site was surveyed during March 2023 by: **Jonathan Cocking** *F.R.E.S., Tech. Cert. (Arbor.A), PDipArb (RFS) FArborA CBiol MSB. MICFor.*

2.2 Data Collection Methods

- 2.2.1 The inspection was carried out at ground level using visual assessment of the tree canopy, stem and rooting area. No digging or drilling was carried out by JCA Ltd.
- 2.2.2 The measurements were made using instruments including clinometers for tree *HEIGHT*, diameter tapes for *STEM DIAMETER* (measured at 1.5m above ground level) and tape measures or electronic distometers for *CROWN SPREAD* and *DISTANCE TO PROPERTY*.
- 2.2.3 *AGE CLASS* and *LIFE EXPECTANCY* values are estimated based upon our knowledge of trees and the way they grow. No core sampling was carried out on this occasion.
- 2.2.4 The term *INFLUENCING DISTANCE* as used in this report is not derived from the NHBC's 'zones of influence' formula. It is merely an estimation of the potential of a tree or shrub to cause damage to the subject property after due consideration of many factors including soil characteristics, specimen size, vigour, species, likely water uptake and distance from the property.
- 2.2.5 '*NHBC WATER DEMAND*' (low, moderate or high) are categories originated by the National House Building Council. The concept was designed to be used as an aid for determining the correct foundation depths for new build situations where there are existing trees present.

3. Ground Investigation, Soil & Root Analysis

3.1 Introduction

- 3.1.1 Trees influence soil conditions, and in some soil types root activity can create a soil moisture deficit (S.M.D.), which means that the amount of water being used by the tree and by natural evaporation has exceeded the amount of water entering the ground through precipitation or other means. This deficit can lead to soil shrinkage which in turn can cause a building to move, particularly if its foundations are shallow. The result is *SUBSIDENCE*.
- 3.1.2 The soil's *PLASTICITY INDEX*, *PLASTIC LIMIT*, *MOISTURE CONTENT* and the likely water uptake of the tree/trees in question are key factors in determining whether shrinkage has occurred.
- 3.1.3 On shrinkable soils, damage to buildings can also occur as a result of tree removal. In such cases, re-hydration of the soil beyond that which would ordinarily occur prior to the removal of vegetation can cause an upwards movement of the ground which is known as *HEAVE*. Trees should not, therefore, be removed without due consideration of likely effects.
- 3.1.4 The ground investigation and root analysis at this site have been carried out by others. Results of these investigations are briefly summarised below.

3.2 Foundation Types and Depths

- 3.2.1 Please refer to the site plan at **Appendix 2** for an indication of the trial pit location.
- 3.2.2 **Trial pit/borehole 1** revealed a concrete foundation at a maximum depth of 200mm below ground level.

3.3 Soil Types

3.3.1 Trial Pit/Borehole 1:

- The soils *plasticity index* ranged from 34% to 40%.
- *Moisture contents* within the soil samples ranged from 24% to 38%.
- The *plastic limit* of the soils ranged from 21% to 23%.
- The *liquid limit* of the soils ranged from 55% to 63%.

The results indicate that the clay soil found within **Trial Pit 1** is of medium to high shrinkability and that there is an onset of desiccation between 3m – 3.5m.

3.4 Root Analysis



Root identification
Vegetation surveys
Tree/Building investigations
Plant taxonomy

Richardson's Botanical Identifications

The Drainage Repair Company
Suite 15, Leatherline House
71 Narrow Lane
AYLESTONE
Leicester LE2 8NA

19/05/2023

Dr Ian B K Richardson
BSc, MSc, PhD, MRSB, FLS
James Richardson
BSc (Hons. Biology)

Enterprise House
49-51 Whiteknights Road
Reading
RG6 7BB

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

Your ref: **Root ID**

Our ref: **86/6106**

Dear Sirs

16 Green Spring Avenue S70 5RW

The samples you sent in relation to the above on 17/04/2023 have been examined. Their structures were referable as follows:

TP/BH1, 0.2-3.7m		
6 no.	Examined root: QUERCUS (Oak).	Alive, recently*.
5 no.	Examined root: the family Rosaceae, subfamily POMOIDEAE (a group of closely related trees: Malus (Apple), Pyrus (Pear), Crataegus (Hawthorn), Sorbus (Rowan, Whitebeam, Service tree), Mespilus (Medlar), and some shrubs (Pyracantha (Firethorn), Chaenomeles (Japonica), Cydonia (Quince), Amelanchier, Cotoneaster)).	Alive, recently*.
2 no.	Examined root: FRAXINUS (Ash).	Alive, recently*.
1 no.	Examined sample: a section of TWIG only, not a root. Could also be FRAXINUS (Ash).	
4 no.	All pieces of BARK only - not enough material for identification.	
18 no.	Unfortunately all with insufficient cells for identification.	

Click here for more information: [FRAXINUS](#) [POMOIDEAE](#) [QUERCUS](#)

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

Yours faithfully



Dr Ian B K Richardson

* Based mainly on the Iodine test for starch. Starch is present in some cells of a living woody root, but is more or less rapidly broken down by soil micro-organisms on death of the root, sometimes before decay is evident. This result need not reflect the state of the parent tree.

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

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

Report commissioned by



Address: 16 GREEN SPRING AVENUE, BIRDWELL, BARNSELY, S70 5RW

4. Status of the Trees

- 4.1 A Tree Preservation Order (TPO) and Conservation Area check was made in March 2023 with **Barnsley Metropolitan Borough Council**.
- 4.2 We understand that there is a Tree Preservation Order (TPO) in force on this site covering **T2, T3, T4 & T5**.
- 4.3 Before any tree works are undertaken to protected trees, written consent from the Local Authority must first be obtained. An application for tree works form must therefore be completed and submitted to the Local Authority outlining all the proposed works along with a suitable justification. A waiting period of eight weeks is then required.
- 4.4 *No work must be done to protected trees until permission has been granted.*
- 4.5 The recommended work to **H1** can be done without any prior permission from the Local Authority.

5. Tree Descriptions & Recommendations

- 5.1 Descriptions of the surveyed vegetation and all recommended work are detailed in the tables at **Appendix 1**.
- 5.2 Please refer to the site plan at **Appendix 2** for the locations of the vegetation surveyed and all the relevant site features.

6. Discussion

- 6.1 We have been informed by our client that the damage observed at the property is due to clay shrinkage caused by vegetation.
- 6.2 Based on this information, having made a detailed survey of the site and having given due consideration to the other information supplied, it is likely that in this case some subsidence damage has occurred as a result of drying shrinkage caused by vegetation within influencing distance of the property.
- 6.3 We consider the vegetation identified as **H1 T2, T3, T4 & T5** to all be influencing factors in the damage observed to the garage.
- 6.4 In order to negate the influence of the above items, the only guaranteed vegetation management option available is to remove **T2, T3, T4 & T5** to ground level and treat the stumps to prevent regrowth. **H1** can be reduced and managed accordingly.
- 6.5 As **T2, T3, T4 & T5** are protected by a TPO, the Council will require sufficient evidence to support an application for works, if this was the proposed mitigation route as opposed to engineering solutions.
- 6.6 If the Local Authority resist the removal of these trees, it may be possible to replace the garage on a new raft and retain the trees, possibly recovering costs.
- 6.7 We have summarised all our tree specific recommendations in **Section 7** and made general recommendations in **Section 8**.

7. Summary of Tree Specific Recommendations

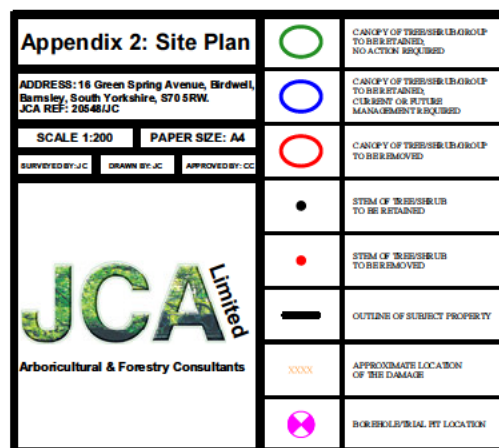
Item	Species	Recommended Actions	Location/Ownership	Planning Restriction
H1	Hawthorn	Reduce to 0.7m and allow to regrow to 1m, repeating each year.	Policy Holder	None
T2	Oak	Only vegetation management option available is to remove the tree to ground level and treat the stump to prevent regrowth. Alternative solutions may therefore need to be considered.	Third Party - Local Authority	TPO
T3	Oak	Only vegetation management option available is to remove the tree to ground level and treat the stump to prevent regrowth. Alternative solutions may therefore need to be considered.	Third Party - Local Authority	TPO
T4	Ash	Only vegetation management option available is to remove the tree to ground level and treat the stump to prevent regrowth. Alternative solutions may therefore need to be considered.	Third Party - Local Authority	TPO
T5	Oak	Only vegetation management option available is to remove the tree to ground level and treat the stump to prevent regrowth. Alternative solutions may therefore need to be considered.	Third Party - Local Authority	TPO

8. General Recommendations and Observations

- 8.1 This report is based upon a visual inspection. JCA Limited shall not be responsible for events which happen after this time due to factors which were not apparent at the time, and the acceptance of this report constitutes an agreement with the guidelines and the terms listed in this report.
- 8.2 All tree work must be carried out to BS 3998: 2010 - '*Recommendations for Tree Work*'.
- 8.3 Any tree work should be carried out by qualified, experienced and skilled arboricultural contractors covered by adequate *public liability and employers liability insurance*. Any defects seen by a contractor or the employer that were not apparent to the consultant must be brought to the consultant's attention immediately.
- 8.4 The influence of trees on the soil and on buildings may change as they grow, as climate varies or as other changes occur in the local environment. It is therefore advisable to have trees inspected by JCA Limited annually.
- 8.5 That the project engineer considers all possible solutions which may not involve vegetation works, if there is a wider public or ecological interest in retaining the trees influencing the property.
- 8.6 The property and the damage should be monitored by the project engineer on a regular basis after the recommended tree works are complete.
- 8.7 If, after the works have been carried out, there is little improvement, this may mean that the situation cannot be rectified by arboricultural means alone. If this point is reached the situation must be reassessed in conjunction with other experts.
- 8.8 No liability can be accepted by the consultant in respect of the trees unless the recommendations of this report are carried out under their supervision and within their timescale.
- 8.9 That the project engineer considers the possibility of heave.

Appendices

Tree Ref.	Age Common Name <i>Botanical Name</i>	Height (m)	Stem Diameter (cm)	Owner / Occupier Observations	Condition	Distance to Garage (m)	NHBC Water Demand	Life Expectancy (yrs)	Within Potential Influencing Distance	Root Identification Match	Contributing to Damage	Vegetation Management Option
H 1	Semi mature Hawthorn <i>Crataegus monogyna</i>	1 to 2	mix	Policy Holder A newly established hedge, planted by the home owner. Growing rapidly and in need of management.	GOOD	1+	HIGH	40+	Yes	Yes	Likely	Reduce to 0.7m and allow to regrow to 1m, repeating each year.
T 2	Mature Oak <i>Quercus robur</i>	16	65	Third Party - Local Authority Growing in adjacent Council land. Part of a wooded group covered by a TPO.	FAIR	12	HIGH	20+	Yes	Yes	Likely	Only vegetation management option available is to remove the tree to ground level and treat the stump to prevent regrowth. Alternative solutions may therefore need to be considered.
T 3	Mature Oak <i>Quercus robur</i>	14	45	Third Party - Local Authority Growing in adjacent Council land. Part of a wooded group covered by a TPO.	FAIR	9.2	HIGH	20+	Yes	Yes	Likely	Only vegetation management option available is to remove the tree to ground level and treat the stump to prevent regrowth. Alternative solutions may therefore need to be considered.
T 4	Semi mature Ash <i>Fraxinus excelsior</i>	20	45	Third Party - Local Authority Growing in adjacent Council land. Part of a wooded group covered by a TPO. Tall and narrow with suppressed crown sides. Less likely to be influencing the garage.	FAIR	11	MOD	20+	Yes	Yes	Likely	Only vegetation management option available is to remove the tree to ground level and treat the stump to prevent regrowth. Alternative solutions may therefore need to be considered.
T 5	Mature Oak <i>Quercus robur</i>	19	85	Third Party - Local Authority This is the most likely culprit. Covered by a TPO and forming a high amenity group.	GOOD	9.7	HIGH	40+	Yes	Yes	Likely	Only vegetation management option available is to remove the tree to ground level and treat the stump to prevent regrowth. Alternative solutions may therefore need to be considered.



Appendix 3: Author Qualifications

Principal Consultant and Managing Director

Jonathan Cocking *F.R.E.S., Tech. Cert. (Arbor.A), PDipArb (RFS) FArborA CBiol MSB. MICFor.* Jonathan is a Registered Consultant and Fellow of the Arboricultural Association and sits on its Professional Committee. He has 31 years' experience in the Arboricultural profession and served for eight years as Senior Arboriculturist with a large local authority before establishing JCA in 1997. Jonathan has since developed JCA's portfolio of services and its extensive client base. He is a Chartered Biologist, a Chartered Arboriculturalist and an Expert Witness with much experience of litigation work.

Technical Director

Toby Thwaites *BSc (Hons), HND (Arboriculture), MArborA.* Toby joined JCA in 1998 after graduating in Ecology at the University of Huddersfield and has since graduated in Arboriculture at the University of Central Lancashire. A former JCA team leader and Consulting Arboriculturist, Toby is now Technical Director and oversees all office and on-site activities at JCA and is on hand to offer technical support and advice.

Operations Director

Charles Cocking *FdSc (Arboriculture), MArborA.* Charles joined JCA in January 2014 having previously worked for the company on a part time basis during 2013. Charles obtained his Foundation Degree in Arboriculture at Askham Bryan College, York, and is a Professional Member of the Arboricultural Association. Charles now oversees all internal operations for the company.

Consulting Staff: Arboriculture

Andrew Bussey. Andrew started working in consultancy at JCA in 2006 having spent 12 years working as an arborist for various private companies before joining a Local Authority forestry team. He has various NPTC qualifications, is QTRA qualified and is a LANTRA Accredited Professional Tree Inspector.

Emily Wilde *FdSc (Arboriculture).* Emily joined JCA having previously worked for various private tree surgery and consultancy companies over the past 8 years. She initially obtained a ND in Forestry & Arboriculture, followed by a FdSc in Arboriculture at Askham Bryan College, York. Emily has various NPTC certificates and is QTRA qualified.

Mick Eltringham *ND (Forestry).* Mick joined JCA after spending 12 years working in the industry for various private companies in the north and south of England. He has also spent the last five years working as a consultant for two canopy research projects in the Amazon Rainforest, working with Oxford University and the University of Arizona. He has various NPTC Qualifications.

Dan Kemp *FdSc (Arboriculture).* Dan joined JCA with nearly 30 years' experience in arboriculture. He worked as a London Tree Officer for 12 years and in several arboricultural and horticultural management posts, specialising particularly in tree risk assessments and tree related subsidence.

Luke Wickham *FdSc (Arboriculture and Urban Forestry).* Luke joined JCA in 2021 after obtaining his Foundation Degree in Arboriculture and Urban Forestry at Askham Bryan College. Having previously worked within the industry for the past 4 years, running his own small business and sub-contracting for local firms, Luke brings a sound knowledge and understanding of the practical and academic sides of the industry.

Andrew McPhaden *BSc (Hons).* Andrew joined JCA in 2022 having spent 5 years working as an Arborist for various private companies in both the UK and Germany. During his time abroad he obtained the European Tree Worker Certification along with a tree inspector certification from the Forschungsgesellschaft Landschaftsentwicklung Landschaftsbau. He brings a strong understanding of the practical sides of the industry and holds various NPTC qualifications.

Matt Large *DipArb L4 (ABC) TechArborA.* Matt is based in Northampton and assists JCA by undertaking surveys in the south of the country. He has been involved in the arboricultural sector since 1996 and obtained a Level 4 Diploma in Arboriculture in 2011. Matt is a LANTRA Accredited Professional Tree Inspector.

Jonnie Setterfield *BSc (Hons) MArborA. / Richard Daubeny* *Level 3 Arboriculture / Peter Wilkins* *BA (Hons) MArborA MEnvSc.* Jonnie, Richard and Peter are based in the south-east of the UK and assist JCA by undertaking surveys in the south of the country.

Administrative Staff

Catherine Cocking Accounts Manager.
Kelly Saunders Accounts Assistant.

Lorraine Spink Administrative Assistant.
Lisa Beedham Marketing Manager.

Appendix 4: Photos

Photograph 1: Trees **T2** to **T5** from right to left. **H1** is just to the right of the garage.



We hope that this report provides all the necessary information, but should any further advice be needed please do not hesitate to contact the author.

The contents of this report are true to the best of our knowledge and belief.

Jonathan Cocking *F.R.E.S., Tech. Cert. (Arbor.A), PDipArb (RFS) FArborA CBiol MSB.
MICFor., FLS.*

6th June 2023

For and on behalf of **JCA Ltd**

Registered Office

**Unit 80
Bowers Mill
Branch Road
Barkisland
Halifax
HX4 0AD**

Tel: 01422 376335

Fax: 01422 376232

Email: info@jcaac.com

www.jcaac.com

Report printed on recycled paper

JCA Ltd. Arboricultural and Ecological Consultants

Professional Tree and Ecology Advice nationwide

ARBORICULTURAL SERVICES

Guidance for Architects and Developers

- British Standard 5837 Tree Surveys
- Arboricultural Implication Assessments (AIA)
- Arboricultural Method Statements (AMS)

Tree Advice for the Legal Profession

- Subsidence Litigation
- Personal Injury and Accident Investigation
- Expert Witness, Planning Inquiries and Appeals

Advice for Engineers, Loss Adjusters and Insurers

- Tree Surveys for Subsidence
- Heave Assessment
- Tree Root Identification

Veteran Tree Management

- Ancient Woodland Management
- Veteran Tree Management

Advice for Local Authorities and Social Housing

- Tree Safety Surveys
- Specialist Decay Detection
- Landscape and Orchard Design

Tree Health and Pest and Disease Management

- Pest and Disease Surveys
- Tree Health Checks
- Disease Mitigation and Control

ECOLOGICAL SERVICES

Ecological Pre-Planning Services

- Phase 1 Habitat Surveys
- Great Crested Newt eDNA Sampling
- Protected Species: Bat, Wintering and Nesting Bird, Badger, Amphibian, Otter, Water Vole, White-Clawed Crayfish, Dormice and Reptile Surveys.
- Preparation for Environmental Impact Assessment (EIA)
- Invasive Species Surveys
- Code for Sustainable Homes

Ecological Post-Planning Services

- Biodiversity Enhancement Plans
- Protected Species Mitigation
- Ecological Management (Bat and Bird box installation and inspection)

HEAD QUARTERS:

Unit 80 Bowers Mill,
Branch Road,
Barkisland,
Halifax, HX4 0AD.

Tel: 01422 376335
Mobile: 07778 391986
Email: jon@jcaac.com
Website: www.jcaac.com

