

ARBORICULTURAL REPORT
at
1a Durley Avenue
Waterlooville
Hampshire
PO8 8XA

Client:

360Globalnet, Castle Donington
on behalf of LV Insurance

Client Address:

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

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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 soil shrinkage subsidence damage at:

1a Durley Avenue, Waterlooville, Hampshire, PO8 8XA.

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 a detached residential dwelling with a detached garage.
- 1.3.2 Damage has occurred to the garage. 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 structures is measured from the closest structure.

2. Survey Conditions and Methods

2.1 Date of Inspection and name of Inspector

- 2.1.1 The site was surveyed during January 2023 by Richard Daubeney Level 3 Arboriculture.

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/borehole locations.
- 3.2.2 Trial pit/borehole 1 revealed a concrete foundation at a maximum depth of 800mm below ground level.
- 3.2.3 Borehole 2 was a remote borehole only and therefore did not reveal a foundation.

3.3 Soil Types

3.3.1 Trial Pit/Borehole 1:

- The soils plasticity index ranged from 27% to 57%.
- Moisture contents within the soil samples ranged from 26% to 37%.
- The plastic limit of the soils ranged from 23% to 32%.
- The liquid limit of the soils ranged from 50% to 89%.

The results indicate that the clay soil found within Trial Pit/Borehole 1 is of medium to high shrinkability and that the soil is desiccated between the depths of 2m - 4m.

3.3.2 Borehole 2:

- The soils plasticity index ranged from 23% to 48%.
- Moisture contents within the soil samples ranged from 23% to 40%.
- The plastic limit of the soils ranged from 21% to 31%.
- The liquid limit of the soils ranged from 44% to 79%.

The results indicate that the clay soil found within Borehole 2 is of medium to high shrinkability and that the soil is desiccated between the depths of 1m - 1.5m.

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

26/04/2023

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

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Web: www.botanical.net

Your ref: **LIV-SN-22-005818**

Our ref: 86/3303

Dear Sirs

1a Durley Avenue PO8 8XA

The samples you sent in relation to the above on 20/02/2023 have been examined. Their structures were referable as follows:

TP/BH1, 0.8-1.8m		
23 no.	Examined root: QUERCUS (Oak).	Alive, recently* .
1 no.	A piece of BARK only, insufficient material for identification.	
3 no.	Unfortunately all with insufficient cells for identification.	
TP/BH2, 0.8-1.8m		
10 no.	Examined root: the family SALICACEAE (Salix (Willows) and Populus (Poplars)).	Dead* .
1 no.	Examined sample: a section of TWIG only - not a root. Could be an herbaceous (non-woody) type.	
5 no.	All pieces of BARK only - not enough material for identification.	
8 no.	Unfortunately all with insufficient cells for identification.	

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

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.

Address: 1a DURLEY AVENUE, WATERLOOVILLE, PO8 8XA

4. Status of the Trees

- 4.1 A Tree Preservation Order (TPO) and Conservation Area check was made in January 2023 with Havant Borough Council.
- 4.2 We are informed that there is no Tree Preservation Order (TPO) in force and that the property is not situated within a Conservation Area.
- 4.3 Prior to any tree works being undertaken, we advise that those instructing and proposing to carry the work should satisfy themselves that all appropriate consents are in place to prevent a potential breach of legislation.

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 T1, as identified in this report. In order to negate its influence, the only vegetation management option available is to remove T1 to ground level and treat its stump to prevent regrowth.
- 6.3 We consider the vegetation identified as G2 and S3 to be of possible future concern to the subject property, if left unmanaged. We have therefore recommended that these items of vegetation be maintained at their current height and spread over the forthcoming years.
- 6.4 We have summarised all our tree specific recommendations in Section 7 and made general recommendations in Section 8.

7. Summary of Tree Specific Recommendations

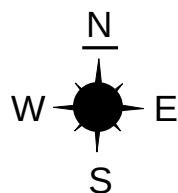
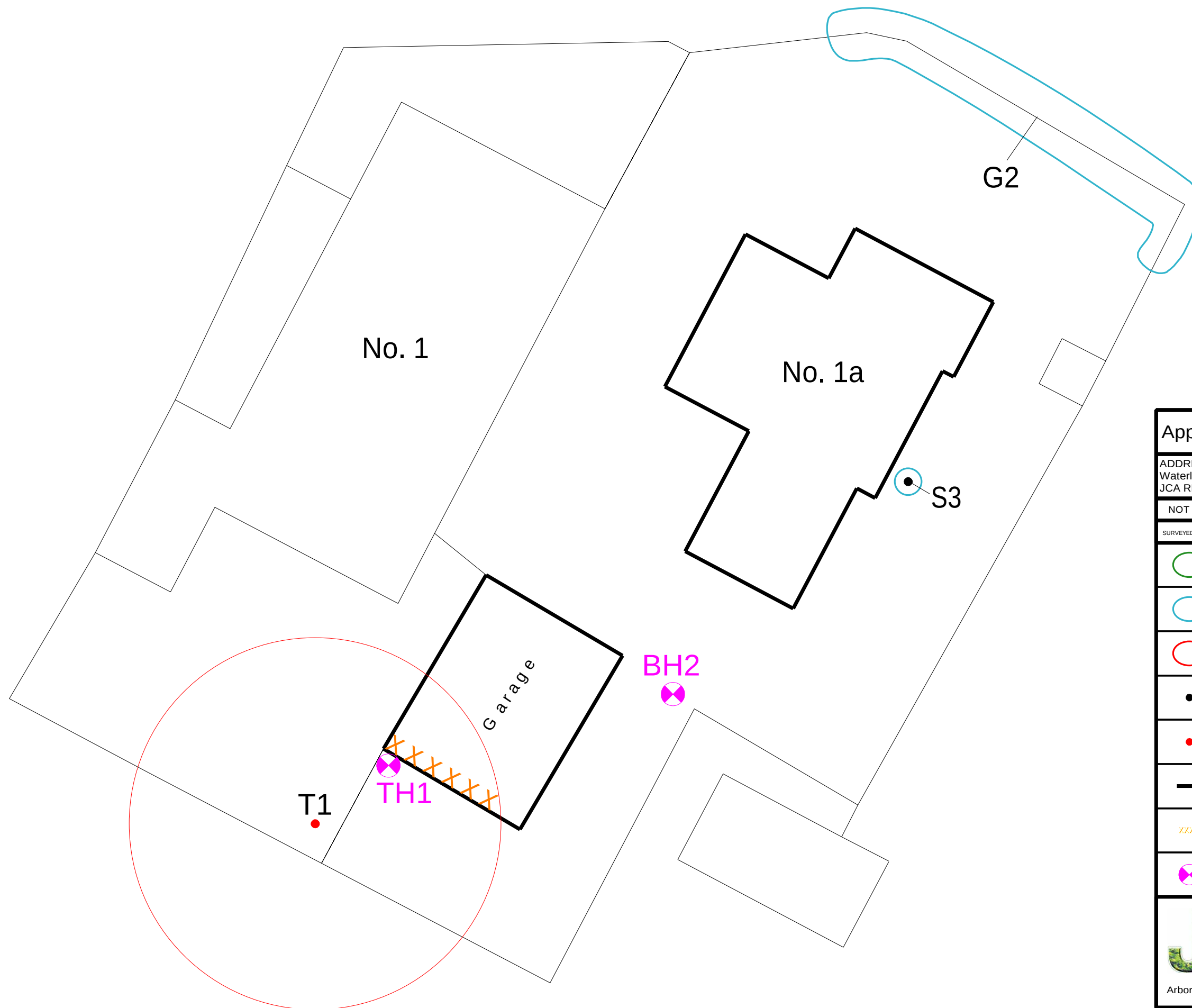
Item	Species	Recommended Actions	Location/Ownership	Planning Restriction
T1	English Oak	Remove to ground level and treat the stump to prevent regrowth.	Third Party - No. 1 (Primrose Cottage)	None
G2	Mixed	Maintain at current height and spread.	Policy Holder	None
S3	Privet	Maintain at current height and spread.	Policy Holder	None

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	Height (m)	DBH (cm)	Spreads (m)	Owner / Occupier	Condition	Health (m)	Canopy	Spread	Flowering	Seedling	Vegetation Management Option		
	Common Name				Botanical Name								Observations	
T 1	Mature	16	60	14	Third Party - No. 1 (Primrose Cottage)	FAIR	3.5	HIGH	40+	Yes	Yes	Yes	Remove to ground level and treat the stump to prevent regrowth.	
	English Oak													No significant recent management noted.
	Quercus robur													
G 2	Mature	To 14	Avg. 30	5	Policy Holder	FAIR	5.7	LOW to HIGH	40+	Yes	No	No	Maintain at current height and spread.	
	Mixed													Western Red Cedar, Silver Birch, Leyland Cypress. No significant recent management noted.
S 3	Mature	2	3	1	Policy Holder	FAIR	0.85	NO DATA	20+	Yes	No	No	Maintain at current height and spread.	
	Privet													No significant recent management noted.
	Ligustrum ovalifolium													



Appendix 2: Site Plan

ADDRESS: 1a, Durley Avenue,
Waterlooville, Hampshire, PO8 8XA.
JCA REF: 19997/ChC

NOT TO SCALE		PAPER SIZE: A3
SURVEYED BY: RD	DRAWN BY: CC	APPROVED BY: AJB

	CANOPY OF TREE/SHRUB/GROUP TO BE RETAINED; NO ACTION REQUIRED
	CANOPY OF TREE/SHRUB/GROUP TO BE RETAINED; CURRENT OR FUTURE MANAGEMENT REQUIRED
	CANOPY OF TREE/SHRUB/GROUP TO BE REMOVED
	STEM OF TREE/SHRUB TO BE RETAINED
	STEM OF TREE/SHRUB TO BE REMOVED
	OUTLINE OF SUBJECT PROPERTY
	APPROXIMATE LOCATION OF THE DAMAGE
	BOREHOLE/TRIAL PIT LOCATIONS

Arboricultural & Forestry Consultants

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.

Hazel Irving FdSc (Arboriculture and Urban Forestry). Hazel joined JCA in 2022 after obtaining her Foundation Degree in Arboriculture and Urban Forestry at Askham Bryan College. She has previously worked in the horticulture industry, volunteered with the National Trust and Yorkshire Arboretum and completed the 2021 student research internship at the RHS Wisley Plant Health Centre.

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.

Appendix 4: Photos



Photo 1: Showing T1 (English Oak)

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.

Charles Cocking FdSc (Arboriculture) MArborA.

8th May 2023

For and on behalf of JCA Ltd

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- Invasive Species Surveys
- Code for Sustainable Homes

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

HEAD QUARTERS:

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