ARBORICULTURAL REPORT
AND
ARBORICULTURAL IMPACT ASSESSMENT
to BS 5837:2012
at
1 The Copse
Scholes Lane
Cleckheaton
West Yorkshire
BD19 6NE

Client:
Suzanne Celensu

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Contents

1. Introduction

1.1 Purpose of the Report

1.1.1 This report is required at **1 The Copse, Scholes Lane, Cleckheaton, West Yorkshire** to provide detailed, independent, arboricultural advice on the trees present, in the context of potential development.

1.1.2 The purpose of this report is to assess the impact of the proposals on the existing tree stock and outline mitigation actions, where appropriate, to minimise potential damage to the trees which are to be retained. The report includes an assessment of the existing vegetation, along with recommendations based on the current context of the site; clearly defined from those required to facilitate the development.

1.2 Terms of Reference

1.2.1 JCA Ltd has been instructed by **Suzanne Celensu** to survey the trees and prepare the findings in a report.

1.2.2 For this purpose, an Ordnance Survey based drawing has been used, which forms the basis for the Tree Constraints Plan at **Appendix 6**. Tree positions have been captured using GPS technology. Whilst not as accurate as a topographical survey, this method is considered to provide a fair representation of the positions of the trees surveyed. Tree positions should, however, be considered indicative on the Tree Constraints Plan.

1.3 Scope of the Report

1.3.1 This report is compiled in accordance with *BS 5837:2012 'Trees in relation to design, demolition and construction – Recommendations'* and is based on an independent and objective assessment of the existing vegetation.

1.3.2 Preliminary recommendations are given with a view to the long-term management of a sustainable tree cover and to uphold the interests of health and safety.

1.3.3 Trees are present within the entire garden boundary at 1 The Copse, however only those trees within the proposed development boundary in the western half of the site boundary have been surveyed and included within this report.

1.3.4 Where applicable trees outside the site boundary, but close enough to be affected by the proposed development, are included.

1.3.5 The specific design of the proposed development has been considered within the Arboricultural Implication Assessment in **Section 6** and is detailed on the plan at **Appendix 7**.

1.4 Survey Details

1.4.1 The survey took place during the month of December 2019 and was conducted by Toby Parsons *Cert. Arb. (RFS), Tech. Cert. (Arbor.A).*

1.4.2 During this survey, all trees were inspected from ground level. Further investigation, such as climbed inspections or decay detection surveys, have not been undertaken.

1.4.3 Measurements were obtained using clinometers, specialist tapes or electronic distometers. Where this was not possible, measurements were estimated to the best ability of the surveyor. JCA endeavour to provide accurate information and will always take measurements unless inhibited by restricted access or other mitigating circumstances. Where measurements have been estimated, they are clearly highlighted at **Appendix 1**.

2. Site Description

2.1 Land Use

2.1.1 The site currently forms part of the garden area at 1 The Copse.

2.2 Topography

2.2.1 The site is approximately level.

2.3 Treescape

2.3.1 Surrounding the site is a residential area containing many garden trees of varying age class.

2.3.2 The trees on this site have a moderate impact on the local treescape.

2.4 Visual Amenity Value

2.4.1 The trees on site collectively provide a reasonable visual amenity to the surrounding area. Occasional specimens have a high amenity value due to their size and visibility from outside the site.

2.5 Age Class Mix

2.5.1 The trees surveyed ranged in age from semi-mature to mature.

2.6 Species Diversity

2.6.1 Species surveyed include Lawson Cypress, Weeping Willow, Common Horse Chestnut, Hazel, Cherry laurel, Rhododendron, Portugal Laurel, Silver Birch, Sycamore, Elm, Common Lime, Red Horse Chestnut, European Larch, Beech and Juniper.

3. Status of the Trees

3.1 A check was made on 9th December 2019 on the ***Kirklees Metropolitan Council*** online Tree Preservation Order mapping service.

3.2 We are informed that the site is located within the Hartshead Moor Top Conservation Area.

3.3 Before any tree works are undertaken, the Local Authority must first be given six weeks notice in writing detailing what work is works are proposed. The Local Authority will then consider whether or not the trees should be made the subject of a Tree Preservation Order (TPO). If, after the required timescale has lapsed, or if you have received a letter from the Local Authority stating that the proposed work is works are acceptable, the works may commence as planned.

No work must be undertaken on any tree until the above process has been completed and ensuring that the trees have not been allocated with a TPO status.

3.4 The presence of a Tree Preservation Order (TPO) represents the Local Authority's desire to retain trees within the landscape. As such, trees covered by a TPO are generally more likely to require retention within a proposed scheme and this should be taken into account during the design process. In some cases, the removal of TPO trees may be agreed upon, providing the benefits of the proposed development are deemed greater than the material loss of the trees. The value of existing vegetation is just one factor in the decision making process; all benefits of the proposed development will be taken into consideration in the usual manner.

4. Tree Descriptions and Recommendations

4.1 Full details of all individual trees surveyed are recorded in the tables at **Appendix 1**. A full explanation of the tables can be found at **Appendix 2**. Please refer also to the Tree Constraints Plan at **Appendix 6** for tree locations.

5. Discussion Relating to the Existing Treescape

5.1 Tree Condition & Recommended Works

5.1.1 The tree survey revealed a total of **22** items of vegetation (**18** individual trees and **4** groups of trees). Of these, **9** trees and **1** group were identified as retention category 'B' and **9** trees, and **3** groups were identified as retention category 'C'. Please refer to **Appendix 2** for retention category and definition criteria.

5.1.2 Within the survey, tree works have been identified for reasons of public safety, to ensure the long-term health of the trees or for general maintenance purposes. These recommendations have been made without regard to any proposed layout designs and should be undertaken irrespective of development. For full details of all recommendations, please refer to **Appendix 1.** For an explanation and timescales of the priority ratings, please refer to **Appendix 2 (A2.2.5)**.

5.2 Removals Irrespective of Development

5.2.1 On this occasion, no trees have been identified as category 'U' and as such no trees are recommended for removal in the current context of the site.

5.3 Remedial Tree Works

5.3.1 On this occasion, no remedial works were deemed necessary at this time.

5.4 Monitoring / Further Investigations

5.4.1 **T16, T17** and **T20** were noted to have structural or physiological defects, as detailed at **Appendix 1**. Although these trees were considered to be in an acceptable condition at the time of the inspection, the defects observed may lead to their early demise or render them unsafe in the future. As such, it is recommended that these trees be monitored (re-inspected and assessed) on an annual basis to assess if their condition is still acceptable (as advised at **Appendix 1**).

6. Arboricultural Implications Assessment (AIA)

6.1 Proposed Development

6.1.1 The proposed development will consist of the construction of a detached residential dwelling which includes a new vehicular access.

6.1.2 Drawing Ref. **Outline Proposals No.2** has been supplied by the client as a scan from a hand drawing.

6.1.3 In order to produce the Development Proposals Plan at **Appendix 7**, Drawing Ref. **Outline Proposals No.2** has been scaled and traced in a CAD programme and overlaid onto the tree detail from **Appendix 6**. Please note however that the position of the development proposals on the plan at **Appendix 7** should be considered indicative.

6.1.4 All tree works required to accommodate the proposals are included at **Appendix 1**, which lists all works recommended during the initial survey and those required for the development.

6.2 Tree Removals for Development

6.2.1 There is little room for development within this site without the removal of some trees. based on the current proposals, **5** trees (**T2, T3, T4, T5** and **T21**) and **1** group of trees (**G6**) require removal to accommodate the proposals. These include **5** retention category 'B' trees and **1** retention category 'C' group.

6.2.2 **G6** is of a lower quality (retention category 'C') and could be removed without significantly affecting the visual amenity of the surrounding area. **T2, T3, T4, T5,** and **T21** are category 'B' trees.

6.2.6 The removal of trees for development can often be mitigated (either partially or entirely) by the replacement of suitable specimens within a planting scheme. Whilst not always necessary, the planting of trees can improve the aesthetic value of the surrounding area and may be conditioned in the usual manner.

6.2.7 Please note it is proposed to plant two new Beech hedges, one either side of the proposed new dwelling.

6.3 Pruning for Development

6.3.1 To accommodate the proposals, it will be necessary to lightly prune one group of retained, in order to provide suitable access and working distances for pedestrians and vehicles and to afford reasonable clearances from the proposed dwelling. Also known as 'access facilitation pruning' this is relevant to **G7**, and the specification is detailed at **Appendix 1**.

6.4 Implications for Retained Trees

6.4.1 The Protective Barrier

6.4.1.1 In order to ensure the effective protection of retained trees during development, a protective barrier will be installed, in accordance with BS5837: 2012 and may comprise of protective fencing and ground protection. This will be the first job on site following the tree removal and pruning works. The fencing should ideally be positioned to protect the entire **Root Protection Area** (**RPA**) of the retained trees, in order to create a **Construction Exclusion Zone** (**CEZ**).

6.4.1.2 Routes for pedestrian and site traffic will be located outside, and diverted away from, the RPAs of the retained trees wherever possible. Where this is not practicable, temporary protective surfaces (ground protection) must be laid over the exposed RPAs to reduce/limit soil compaction. The ground protection must therefore distribute the weight of site vehicles, machinery or pedestrians whilst allowing moisture to reach the tree rooting area beneath. Such surfaces must be constructed in accordance with BS5837: 2012.

6.4.2 Access/Construction of Hard Surfacing

6.4.2.1 In this case, the proposed scheme does not require the construction of access roads, driveways or other hard surfaces within the RPA of retained trees. As such no specialised construction techniques/surface treatments will be required for this purpose.

6.4.3 Demolition

6.4.3.1 In this case, no demolition activities are required adjacent to retained trees and as such, no mitigation measures are considered necessary.

6.4.4 Construction/ Foundation Design.

6.4.4.1 Prior to construction, all protective measures required and listed in **Section 6.4.1** (The Protective Barrier) need to be correctly installed to prevent unnecessary damage during development.

6.4.4.2 The footprint of the proposed structure does not encroach into the RPA of retained trees. As such no specialist construction or foundation methods are considered necessary for the sole purpose of preventing damage to trees.

6.4.4.3 Despite this, specialist foundation designs may still be required for other reasons, and advice should always be sought from a suitably qualified structural expert. The water demand of trees can be an important consideration when determining the appropriate foundation design. Because of this, water demands for the trees identified on this site are included at **Appendix 1**, in accordance with **NHBC Chapter 4.2**, for use by the appointed structural expert.

6.4.5 Tree Shade

6.4.5.1 A tree shade plan has been prepared for this site and is included at **Appendix 8** of this report.

6.4.5.2 The plan suggests that the retained trees to the south of the proposed dwelling will cast shade over the rear garden area, as well has the southern section of the dwelling itself.

6.4.6 Utilities

6.4.6.1 Details on service routes are not available at this time. Where utilities need to be brought onto the site, these should be routed away from the RPAs of retained trees. Where this is not possible, methodologies on the installation of underground services without damage to tree roots should be considered.

6.4.6.2 All service providers should be consulted prior to commencement of works with the aim of minimising the number of service runs on the site. Any foreseeable incursions to RPAs should be communicated to the appointed arboricultural consultant and the LPA at the earliest possible time to prevent breach of planning conditions and damage to retained trees.

6.4.7 Site Compound

6.4.7.1 The site compound, which typically includes the site office, mess facilities, toilets, storage of materials and parking, must be located away from the trees and outside the RPAs.

6.4.7.2 Care should also be taken to prevent soil contamination with chemical spillages, including petrol, diesel and oils.

6.4.8 Landscaping

6.4.8.1 Any patios, garden paths or other hard surfaces within RPAs which may not be shown on the projected layout (**Appendix 7**) may potentially be constructed using no-dig techniques, providing that they do not cover more than 20% of the RPA and are implemented in accordance with BS5837: 2012. Such surfaces are to be kept as far away from the main stems of the trees as is reasonably practicable. If there is any concern of damaging retained trees, further advice should be sought from a qualified Arboriculturalist.

6.4.8.2 No ground level changes are to be undertaken within the RPA of retained trees, unless otherwise stated or agreed with the appointed Arboricultural consultant or the LPA. The requirement to raise/lower ground levels within RPAs should be communicated to these parties at the earliest practical convenience.

6.5 Remedial Measures

6.5.1 In order to protect the retained trees during the construction phase, protective fencing needs to be installed. Protective fencing specifications and on-site positioning, along with details of any necessary specialist construction methods can be provided in an Arboricultural Method Statement (AMS).

6.5.2 The site offers scope for landscaping and tree planting. All areas identified for the new planting should also be protected by fencing during the construction phase to prevent the compaction of the soil.

7. Conclusions

7.1 The trees surveyed were generally found to be in a good to fair condition.

7.2 The trees are protected by virtue of them being in a Conservation Area.

7.3 **No** trees have been recommended for removal for arboricultural reasons and no pruning are considered necessary in the current context of the site.

7.4 **Three** trees require an annual inspection as they have structural or physiological defects. These are discussed in **Section 5.4.1** and detailed at **Appendix 1**.

7.5 The arboricultural implications of the development have been considered and discussed in **Section 6**.

7.6 **5** trees and **1** group of trees require removal in order to facilitate the proposed development. These are discussed in **Section 6.2** and detailed on the plan at **Appendix 7**.

7.7 **One** group of trees will require pruning to accommodate the proposals, as discussed in **Section 6.3**.

7.8 All development work carried out in close proximity to trees must be executed in a manner sympathetic to their needs. Otherwise, the condition of the trees may deteriorate in the months and years following development, leading to a loss of amenity and resulting in potentially hazardous trees. Care must therefore be taken to ensure that the retained trees are suitably protected.

7.9 In accordance with **Section 6.1** of **BS 5837: 2012**, the next stage on this site should be the preparation of an **Arboricultural Method Statement (AMS)**, to ensure that all the retained trees survive the development process. An **AMS** details which trees are to be removed, which trees are to be retained and any other tree works which are required to facilitate development. The **AMS** will also advise on temporary protective barriers, temporary ground protection, site supervision, location of services and it will detail specialist construction techniques.

Appendices

Appendix 1: Tree Descriptions and Recommendations

Tree Ref.	Age Common Name *Botanical Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations Priority	Physiological Condition	Structural Condition	Amenity Value	NHBC Water Demand	Life Expectancy (yrs)	Retention Category
T 1	Semi-mature Lawson Cypress *Chamaecyparis lawsoniana*	11	0	0.3 E	40 at base	1 1 1.5 1	Multiple stem stemmed specimen from 0.3m. Vertical with a balanced crown.	No action required. n/a	FAIR	FAIR	MOD	HIGH	20+	C 1
T 2	Early-mature Weeping Willow *Salix x sepulcralis*	13	0	2 N	38	6 5 5.5 5	Twin-stemmed at 2m with a balanced crown that overhangs the road. No major visible defects observed.	No action required. *Remove to facilitate the proposed development.* n/a	GOOD	FAIR	MOD	HIGH	20+	B 1
T 3	Early-mature Common Horse Chestnut *Aesculus hippocastanum*	17	1.5	8 NE	45	6 2.5 5.5 0.5	Single-stemmed and vertical with an unbalanced crown due to competition from the adjacent tree. Multiple pruning wounds due to crown lifting. No major visible defects observed.	No action required. *Remove to facilitate the proposed development.* n/a	GOOD	FAIR	MOD	MOD	20+	B 1
T 4	Early-mature Common Horse Chestnut *Aesculus hippocastanum*	17	0.5	7 NE	47	2 3 5 4	Single-stemmed and vertical with an unbalanced crown due to competition from the adjacent tree. Multiple pruning wounds due to crown lifting. Some minor bark cracking noted, but no major visible defects observed.	No action required. *Remove to facilitate the proposed development.* n/a	GOOD	FAIR	MOD	MOD	20+	B 1
T 5	Early-mature Lawson Cypress *Chamaecyparis lawsoniana*	15	0	0.5 S	34	1.5 1 2.5 1.5	Single-stemmed and vertical with a balanced crown. No major visible defects observed.	No action required. *Remove to facilitate the proposed development.* n/a	GOOD	GOOD	MOD	HIGH	20+	B 1
G 6	Semi-mature Mixed species	To 7	0	n/a n/a	Ave. 10	See plan at Appendix 6	Mixed sp group of Hazel, Cherry Laurel, Rhododendron, Portugal Laurel and 1x Horse Chestnut monolith.	No action required. *Remove to facilitate the proposed development.* n/a	GOOD	GOOD	LOW	LOW to MOD	20+	C 1
G 7	Semi-mature Silver Birch *Betula pendula*	# to 18	# 2.5	n/a n/a	# to 33	See plan at Appendix 6	Located on adjacent land to the west. Group of 7x Silver Birch and 1x Hawthorn. All dimension estimated due to location. Limited inspection due to location.	No action required. *Lightly reduce the spread of the north-east section of the canopy only, to allow sufficient clearance from the proposed dwelling. As these trees are on adjacent land, pruning beyond the boundary line is not permitted.* n/a	GOOD	GOOD	MOD	LOW	20+	B 1

Tree Ref.	Age Common Name *Botanical Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations Priority	Physiological Condition	Structural Condition	Amenity Value	NHBC Water Demand	Life Expectancy (yrs)	Retention Category
T 8	Early-mature Sycamore *Acer pseudoplatanus*	17	7	5 N	48	7 2 2 2	Single-stemmed and vertical with a very unbalanced crown. Appears acceptable at this time.	No action required. n/a	FAIR	FAIR	MOD	MOD	20+	C 1
T 9	Early-mature Common Ash *Fraxinus excelsior*	# 21	# 9	9 S	# 68	# 7 # 6 0.5 # 6	Located on adjacent land to the west. Single-stemmed and vertical with an unbalanced crown. Limited inspection due to location.	No action required. n/a	FAIR	FAIR	MOD	MOD	20+	B 1
T 10	Early-mature Common Horse Chestnut *Aesculus hippocastanum*	# 15	# 3	5 N	# 39	# 3 # 4 # 3 # 4.5	Located on adjacent land to the west. Single-stemmed and vertical with a balanced crown. Bacterial wetwood noted at 1m. Limited inspection due to location.	No action required. n/a	FAIR	FAIR	MOD	MOD	10+	C 1
T 11	Early-mature Sycamore *Acer pseudoplatanus*	16	4	4 E	32	4 0.5 3 0	Single-stemmed and vertical with an unbalanced crown. The top has previously been lost resulting in poor form. Appears acceptable at this time.	No action required. n/a	FAIR	FAIR	MOD	MOD	10+	C 1
T 12	Early-mature Common Horse Chestnut *Aesculus hippocastanum*	17	2	5 NE	45	7 2 5 1	Single-stemmed and vertical with an unbalanced crown. Multiple pruning wounds due to crown lifting. Minor Ivy to 3m. Average specimen.	No action required. n/a	FAIR	FAIR	MOD	MOD	20+	C 1
T 13	Mature Common Ash *Fraxinus excelsior*	20	3	4 S	69	3 3 3 4	Singe stemmed specimen which forms a collective crown with T14. Multiple pruning wounds due to crown lifting, some of which are quite large and occluding slowly. Appears acceptable at this time.	No action required. n/a	FAIR	FAIR	MOD	MOD	20+	B 1
T 14	Mature Elm *Ulmus sp.*	21	3	5 E	72	5.5 1.5 5 6.5	Twin-stemmed at 2.5m with an unbalanced crown. Multiple pruning wounds due to crown lifting. No major visible defects observed.	No action required. n/a	GOOD	FAIR	HIGH	HIGH	20+	B 1
G 15	Semi-mature Elm *Ulmus sp.*	8	2.5	n/a n/a	15, 14 & 16	See plan at Appendix 6	Three trees foming a linear group. The collective crown overganhs the boundary.	No action required. n/a	GOOD	FAIR	LOW	HIGH	20+	C 1
T 16	Mature Common Ash *Fraxinus excelsior*	20	12	7 N	75	4 6 8 6	Single-stemmed and vertical with a balanced crown that overhangs the boundary. Large old pruniung wound at approximately 8m with the onset of decay.	Monitor the progress of decay annually. Moderate	FAIR	FAIR	HIGH	MOD	20+	B 1

Tree Ref.	Age Common Name *Botanical Name*	Height (m)	Crown Height (m)	Height (m) and Direction of the Lowest Branch	Diameter (cm)	Crown Spread N W E S	Observations	Recommendations Priority	Physiological Condition	Structural Condition	Amenity Value	NHBC Water Demand	Life Expectancy (yrs)	Retention Category
T 17	Early-mature Common Horse Chestnut *Aesculus hippocastanum*	17	2	3 N	65	4.5 5 7 1	Single-stemmed and vertical with an unbalanced crown due to competition from the adjacent tree. Minor bark cracking due to an early infection of Bleeding Canker of Horse Chestnut.	Monitor annually. Moderate	FAIR	FAIR	MOD	MOD	10+	C 1
T 18	Semi-mature Common Lime *Tilia europaea*	13	1.5	1.5 N	22	4 3 2 0	Single-stemmed and vertical with an unbalanced crown due to competition from adjacent trees. Appears acceptable at this time.	No action required. n/a	FAIR	FAIR	MOD	MOD	20+	C 1
T 19	Semi-mature Elm *Ulmus sp.*	17	2	2.5 W	26	2 2 2 1	Single-stemmed and vertical with an unbalanced crown due to competition from adjacent trees. Appears acceptable at this time.	No action required. n/a	GOOD	FAIR	MOD	HIGH	20+	C 1
T 20	Early-mature Red Horse Chestnut *Aesculus x carnea*	16	3	5 SW	68	4 3.5 3.5 2	Single-stemmed and vertical with a balanced crown. Multiple cankers observed to the stem with the onset of decay. Typical of the species.	Monitor annually. Moderate	FAIR	FAIR	MOD	MOD	<10	C 1
T 21	Semi-mature European Larch *Larix decidua*	19	2	2 NE	29	5 2.5 3 2.5	Single-stemmed and vertical with a balanced crown. No major visible defects observed.	No action required. *Remove to facilitate the proposed development.* n/a	GOOD	GOOD	MOD	MOD	20+	B 1
G 22	Semi-mature Mixed species	To 9	0+	n/a n/a	To 17	See plan at Appendix 6	Mixed species group of Beech (hedge), Lawson Cypress, Juniper and Portugal laurel.	No action required. n/a	GOOD	GOOD	LOW	MOD to HIGH	20+	C 1

Appendix 2: Explanation of Tree Descriptions

A2.1 Measurements/ Reference Information

A2.1.1 *REF NUMBER.* All items surveyed are allocated a reference number preceded with a letter, identifying the type of vegetation surveyed: T = an individual tree, G = a group of trees or an area of vegetation, W = woodland, H = a hedgerow.

A2.1.2 *SPECIES: COMMON AND BOTANICAL NAME*. The common and botanical names of the species present are noted. If the species is not clear or identifiable, then a general common name and genus will be noted.

A2.1.3 *AGE CLASS* of the tree is described as young, semi-mature, early-mature, mature, over-mature, veteran or dead.

A2.1.4 *HEIGHT* of the tree is measured in metres from the stem base to the top of the crown.

A2.1.5 *CROWN HEIGHT* is an indication of the height above ground level at which the crown begins.

A2.1.6 *STEM DIAMETER* is measured at 1.5 metres above (higher) ground level. Where the tree is multi-stemmed at this point; diameter measurements are taken for each stem. If more than five stems are present, an average stem diameter is taken. If for whatever reason it is not practical to measure multiple-stemmed trees in this way, the diameter is measured close to ground level, just above the root buttress.

A2.1.7 *CROWN SPREAD* is measured from the centre of the stem base to the tips of the branches to all four cardinal points.

A2.1.8 *HEIGHT AND DIRECTION OF LOWEST BRANCH.* The height and direction of the lowest significant branch is noted because of potential issues relating to clearances and the need for tree pruning.

A2.1.9 *NHBC WATER DEMAND.* The water demand of each tree, as listed in NHBC Standards 2010 Chapter 4.2 ‘Building near trees’. This is included to aid structural engineers, architects and other members of the design team as it determines foundation depth and other considerations with regard to trees.

A2.2 Evaluations

A2.2.1 *PHYSIOLOGICAL CONDITION* is classed as good, fair, poor, or dead. This is an indication of the health and vitality of the tree and takes into account vigour, presence of disease and dieback.

A2.2.2 *STRUCTURAL CONDITION* is classed as good, fair or poor. This is an indication of the structural integrity of the tree and takes into account significant wounds, decay and quality of branch junctions.

A2.2.3 *LIFE EXPECTANCY* is classed as; 0, less than 10 years, 10+ years, 20+ years, or 40 + years. This is an indication of the minimum number of years before removal of the tree is likely to be required.

A2.2.4 *AMENITY VALUE.* A general indication is given in respect to the amenity/landscape value of the tree/group within the surrounding area.

A2.2.5 *PRIORITIES.* A priority rating is given concerning the time periods in which the recommended works should be undertaken. LOW priority works should be undertaken within 12 months of the survey, MOD (moderate) priority works should be undertaken within 6 months and HIGH priority works should be completed as soon as practically possible. If no works are recommended, N/A (not applicable) will be used.

A2.3 Retention Categories

A2.3.1 ***A (marked green on the Tree Constraints Plan) = Trees of high quality.***

These trees are of high quality and value with a good life expectancy (usually with an estimated remaining life expectancy of 40 years).

A2.3.2 ***B (marked in blue on the Tree Constraints Plan) = Trees of moderate quality.***

These trees are of moderate quality and value with a reasonable life expectancy (usually with an estimated life expectancy of at least 20 years).

A2.3.3 ***C (marked in grey on the Tree Constraints Plan) = Trees of low quality.***

These trees are of low quality and value but which are in adequate condition to remain or are young trees with a stem diameter below 15cm (usually with an estimated life expectancy of at least 10 years).

A2.3.4 Trees categorised as retention category ‘A’, ‘B’ or ‘C’ are then justified by being further divided into 3 subcategories:

1 = Mainly arboricultural qualities.

2 = Mainly landscape qualities.

3 = Mainly cultural values, including conservation value.

A2.3.5 ***U (marked in red on the Tree Constraints Plan) = Trees usually unsuitable for retention due to poor condition.***

These trees are in such a condition that they cannot be realistically retained as living trees in the context of the current land use for longer than 10 years. This may be due to any of the following:

1) Failure is likely due to serious, irredeemable, structural defects.
2) Removal of other category U trees will render them exposed and unstable.
3) They are in serious, overall decline or are dead.
4) They are of low quality and suppressing adjacent trees of better quality.
5) Diseases are present which may affect the health of adjacent trees.

These trees are to be removed or managed in a way which reduces their risk of failure, where they have high ecological value, such as in a woodland setting.

Appendix 3: General Guidelines

A3.1 All tree work must be undertaken to BS 3998: 2010 '*Recommendations for tree work'* or other recognised industry practice.

A3.2 Staff carrying out the work must be qualified, experienced and ideally be Arboricultural Association approved contractors. They should be covered by adequate public liability insurance.

A3.3 This report is based upon a visual inspection. The consultant 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.

A3.4 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.

A3.5 No liability can be accepted by JCA in respect of the trees unless the recommendations of this report are carried out under the supervision of JCA and within JCA's timescale.

A3.6 It is advisable to have trees inspected by an arboricultural consultant regularly.

Appendix 4: Glossary of Terms & Abbreviations

Arboriculture The cultivation of trees in order to produce individual specimens of the greatest ornament, for shelter or any primary purpose other than the production of timber.

Canker Disease damaged area of a tree, usually caused by fungus or bacteria affecting the bark.

Co-dominant stem A stem which has grown in direct competition to the main stem and which has formed a substantial size influencing the appearance of the tree.

Crown lift The removal of the lowest branches, usually to a given height. It allows more residual light and greater clearance underneath for vehicles etc.

Crown reduction The reduction of a tree's height and spread while preserving its natural shape.

Crown thin The removal of some of the density of a tree's crown**,** usually 5-15% allowing more light through its canopy and reducing wind resistance.

Deadwood Either dead branches, or a procedure involving the removal of dead, dying and diseased branches.

Dieback Where branches are beginning to show signs of death usually at the tips in the crown.

Epicormic shoots Small branches that grow in clusters around the base of the stem of a tree or within the crown. This is usually as a result of bad pruning or some other stress factor, although can be a natural growth pattern for some species of tree (eg Lime species).

Formative pruning The pruning of a tree to remove weaknesses and irregularities which may lead to future problems. The formative pruning operation is aimed at reducing the potential for future weaknesses or problems within the tree's crown and to encourage an optimal canopy shape.

Included bark Where the bark on two adjoining branches or stems is growing tight together, forming a joint with limited physical strength.

Pollarding A method of tree management in which the main trunk and principle branches of the tree are cut to the same height, and the resulting branches are then cropped on a regular basis.

Remedial pruning The removal of old stubs, deadwood, epicormic growth, rubbing or crossing branches and other unwanted items from the tree's crown. Sometimes referred to as crown cleaning.

RPA	Root Protection Area – Theoretical rooting area of a tree as defined in BS5837:2012 *Trees in relation to construction*.
Topping	Topping is a form of pruning that removes terminal growth leaving a 'stub' cut end. Topping causes serious health problems to a tree.

Appendix 5: 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.

Consulting Staff: Arboriculture

Toby Parsons *Cert. Arb. (RFS), Tech. Cert. (Arbor.A).* Toby joined JCA after spending 6 years working as a senior climber for various Arboricultural contractors in the East Midlands and the South-West. He has gained the Level 2 Certificate in Arboriculture (RFS) and an Arboricultural Technicians Certificate. Toby is LANTRA certified in Professional Tree Inspection.

Andrew Bussey. Andrew joined JCA having spent 12 years working as a tree surgeon for various private companies and a Local Authority. He has various NPTC qualifications, is QTRA qualified and is currently studying for his Arboricultural Technicians Certificate.

Phil Humeniuk *FdSc (Arboriculture).* Phil joined JCA having spent 3 years working for various tree surgery companies and as a Tree Officer for a Local Authority. He also has several years experience working as a consultant both for JCA and for another consultancy. Phil obtained his foundation degree in Arboriculture at the University of Central Lancashire and has various NPTC's and is LANTRA certified in Professional Tree Inspection.

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.

Charles Cocking *FdSc (Arboriculture), MArborA.* Charles joined JCA in January 2014 as an Apprentice 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 now part of our qualified Arboricultural consultancy team.

Paul Hodgson *Cert Arb (RFS), FdSc Arb, MArborA.* Paul joined JCA after spending 11 years working in the industry and for various organisations, which included practical tree work, surveying, lecturing at Myerscough College, Arb team leader at Royal Botanic Gardens, Kew, and a number of senior management positions. Paul is a professional member of the Arboricultural Association and a member of the Kew Guild.

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.

Consulting Staff: Ecology

David Bodenham *BSc Ind (Hons) Zoology, MSc Biodiversity and Conservation.* David joined JCA as an addition to the expanding ecology department. An advocate of evidence based conservation, he studied Zoology (Ind) at University and moved onto an MSc in Biodiversity and Conservation where he gained the myriad of skills needed as an ecologist. With over 7 years of experience, David specialises in bat and amphibian ecology.

Jenny Butler *Bsc (Hons) Environmental Science***.** Jenny joined JCA's ecology department in 2017, bringing with her a bachelor degree in Environmental Science from Bangor University. Jenny has previously worked as an Environmental Consultant for an Agri-Environment company and as a freelance ecological consultant. Jenny specialises in great crested newt and bat ecology.

Amanda Beck *Cert He in Field Ecology.* Amanda joined JCA's ecology department in 2018, previously working as a freelance Ecological Consultant in North Wales and Liverpool and as a trainee Ecologist in South Wales. Amanda has extensive practical experience in surveying for botanical, amphibians, terrestrial and marine mammals along with invertebrate research work. She has practical experience in habitat management and creation and is a CIEEM student member.

Joe Earnshaw *BSc (Hons), MSc Biodiversity and Conservation, Student CIEEM Member*. Joe joined JCA's ecology department in 2018. He has a bachelor degree in Animal Management, from Askham Bryan College, York and has further obtained an MSc in Biodiversity and Conservation from the University of Leeds. Joe has expertise in aquatic invasive species identification/control and has practical experience in artificial badger sett and wetland creation. Joe is a member of the West Yorkshire Bat Group and volunteers with the Rivers Trust as part of their river monitoring project.

Administrative Staff

Sue Guest Administrative Team Leader.
Catherine Cocking Accounts Manager.
Kelly Saunders Accounts Assistant.
Simeon Haigh *BSc (Hons).* IT Director.
Lorraine Spink Administrative Assistant.
Lisa Hampson Marketing Manager.

Appendix 6: Tree Constraints Plan

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Appendix 6: Tree Constraints Plan

ADDRESS: 1 The Copse, Scholes Lane, Cleckheaton, West Yorkshire, BD19 6NE.
JCA REF: 15617a/TP

SCALE : 1:500	PAPER SIZE : A3

SURVEYED BY: TP	DRAWN BY: TP	APPROVED BY: AJB

BRITISH STANDARD 5837:2012: 4.5 RETENTION CATEGORIES

Detailed definitions of these catagories are at Appendix 2 of our report. N.B. These categories do not necessarily represent or correspond to recommendations for action made in this report.

	CATEGORY A: 'RETENTION MOST DESIRABLE'
	CATEGORY B: 'RETENTION DESIRABLE'
	CATEGORY C: 'TREE WHICH COULD BE RETAINED'
	CATEGORY U: 'TREE FOR REMOVAL'
•	STEM OF TREE TO BE RETAINED
•	STEM OF TREE TO BE REMOVED
	ROOT PROTECTION AREA

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THIS PLAN IS TO BE PRINTED IN COLOUR AND READ IN CONJUNCTION WITH THE JCA ARBORICULTURAL REPORT (JCA REF: 15617a/TP)

Root Protection Area: RPA

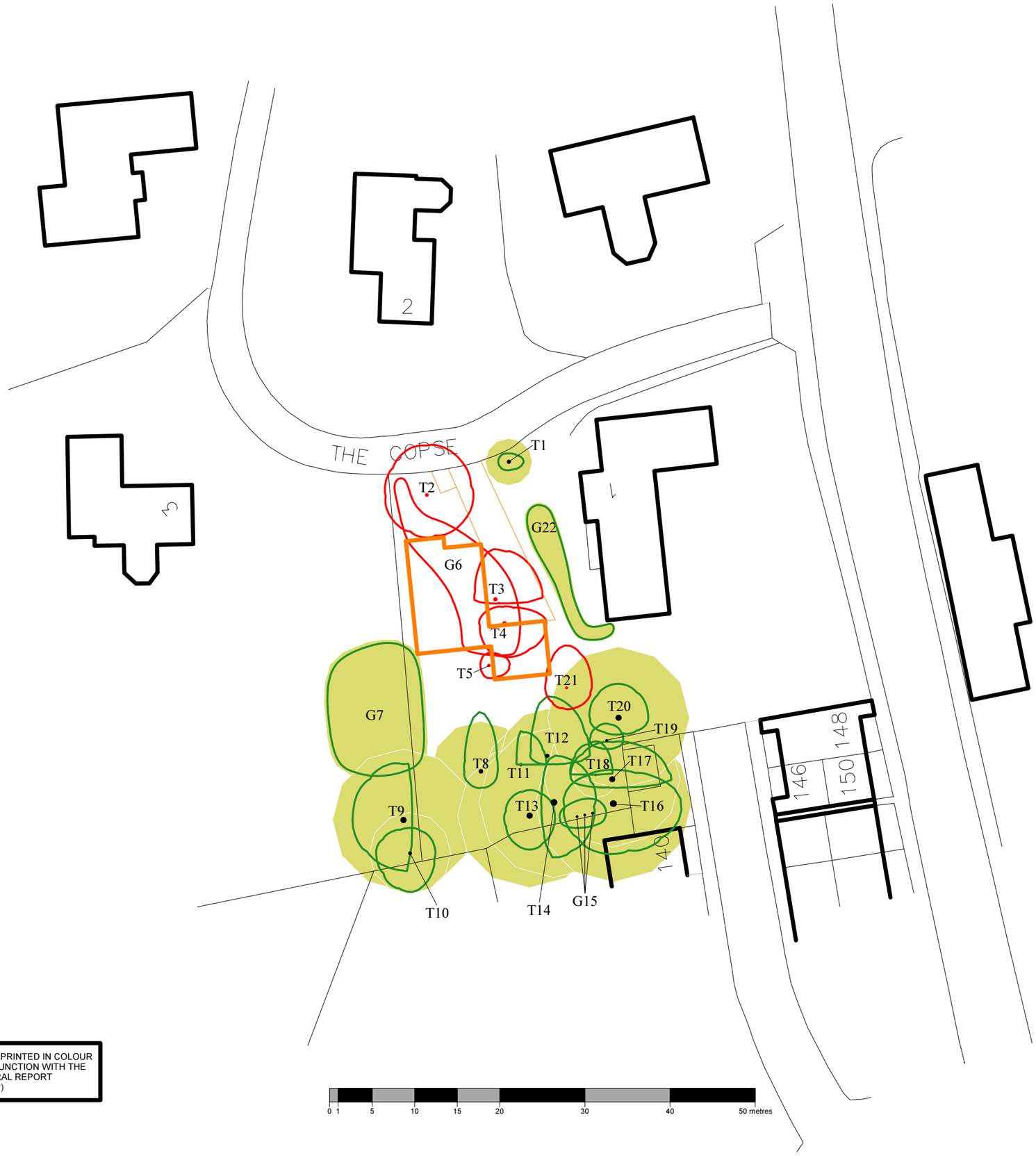
THE ROOT PROTECTION AREA (RPA) INDICATES THE LIKELY ROOTING ZONE OF A TREE.

THIS AREA SHOULD IDEALLY REMAIN UNDISTURBED IF THE TREE IS TO BE RETAINED.

THE DEVELOPMENT PROPOSALS SHOULD THEREFORE BE DESIGNED TO AVOID THE RPA OF ANY TREE WHICH IS TO BE RETAINED.

IF IT IS NECESSARY FOR THE DEVELOPMENT TO ENCROACH INTO THE RPA OF A TREE WHICH IS TO BE RETAINED THEN SPECIALIST CONSTRUCTION TECHNIQUES AND MATERIALS MUST BE CONSIDERED.

Appendix 7: Arboricultural Implications Plan



Appendix 7: Arboricultural Implications Plan

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JCA REF: 15617a/TP

SCALE : 1:500	PAPER SIZE : A3

	TREE TO BE RETAINED
	TREE TO BE REMOVED
	STEM OF TREE TO BE RETAINED
	STEM OF TREE TO BE REMOVED
	ROOT PROTECTION AREA
	ROOT PROTECTION AREA ENCROACHED BY THE PROPOSED DEVELOPMENT
	PROPOSED DEVELOPMENT

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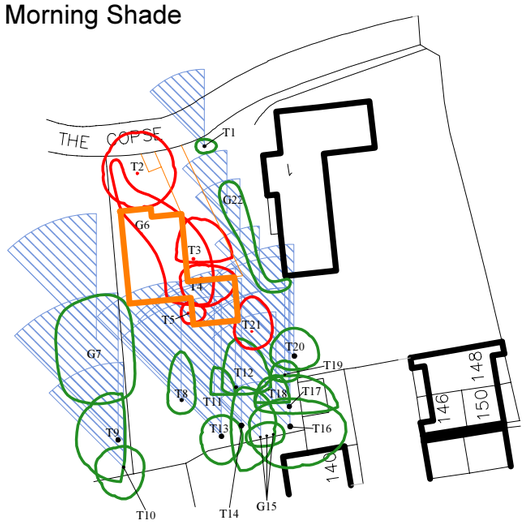
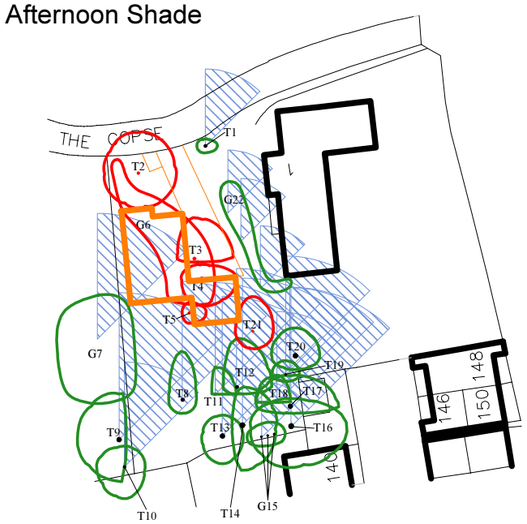
Appendix 8: Tree Shadows Plan

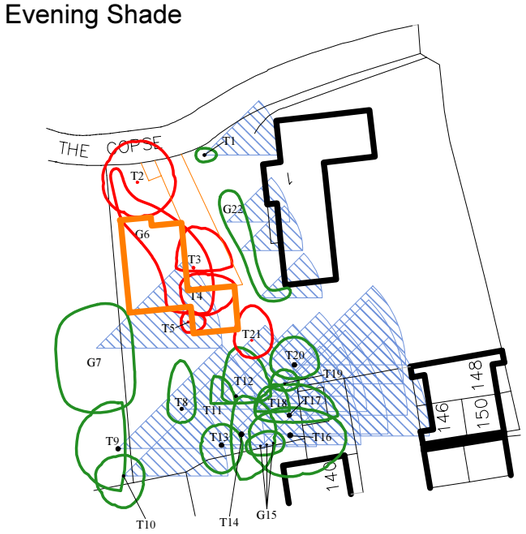
Morning Shade

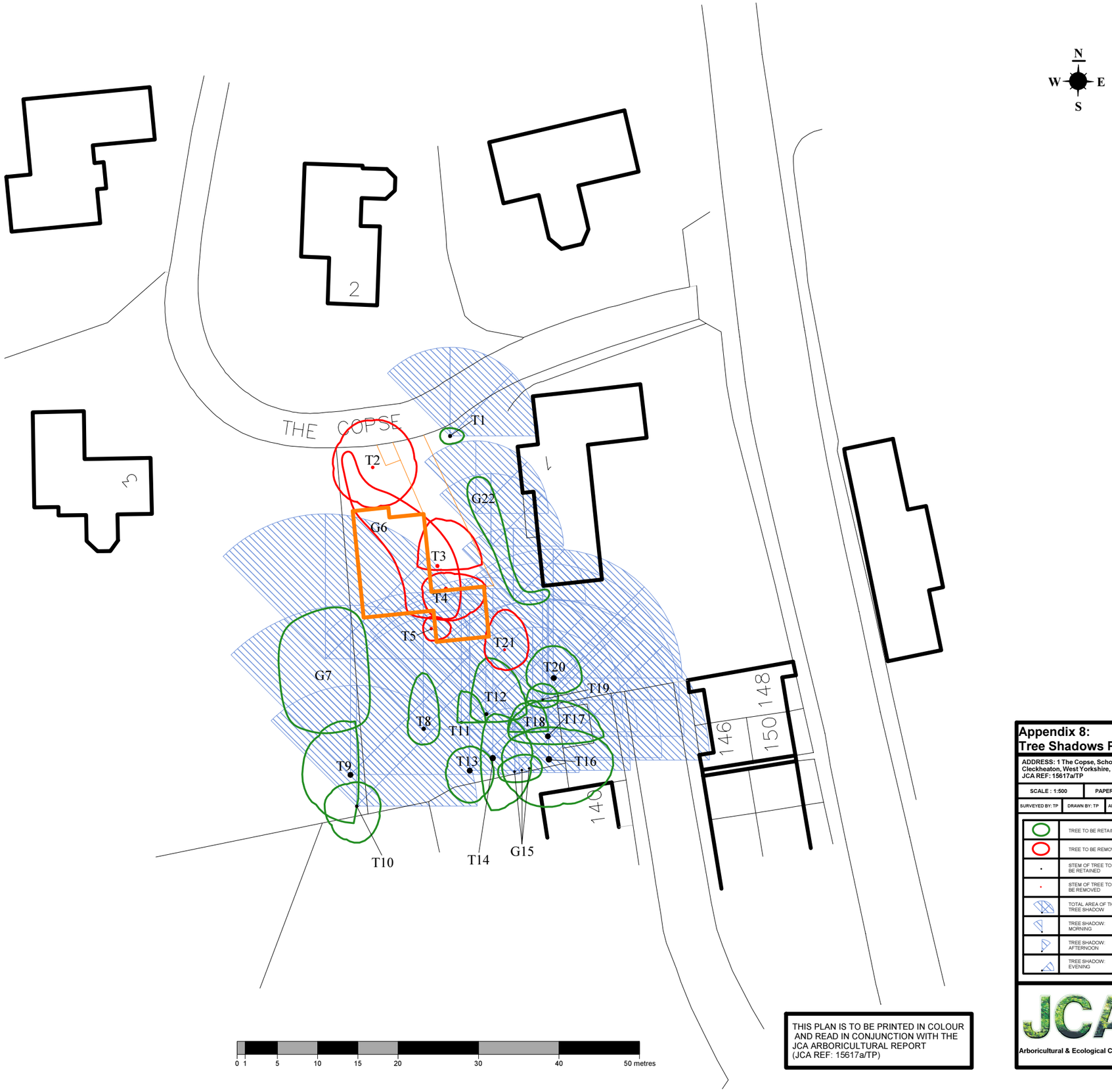


Afternoon Shade



Evening Shade





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Appendix 8: Tree Shadows Plan

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SCALE : 1:500	PAPER SIZE : A3
SURVEYED BY: TP	DRAWN BY: TP	APPROVED BY: TT

	TREE TO BE RETAINED
	TREE TO BE REMOVED
	STEM OF TREE TO BE RETAINED
	STEM OF TREE TO BE REMOVED
	TOTAL AREA OF THE TREE SHADOW
	TREE SHADOW: MORNING
	TREE SHADOW: AFTERNOON
	TREE SHADOW: EVENING

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

Signed

.....

Toby Parsons *Cert. Arb. (RFS), Tech. Cert. (Arbor.A).*

20th May 2020

For and on behalf of ***JCA Ltd***

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- Arboricultural Method Statements (AMS)

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- Heave Assessment
- Tree Root Identification

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- Specialist Decay Detection
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- Personal Injury and Accident Investigation
- Expert Witness, Planning Inquiries and Appeals

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- Ancient Woodland Management
- Veteran Tree Management

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- Disease Mitigation and Control

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- 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)

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