ARBORICULTURAL IMPACT ASSESSMENT
to BS 5837:2012
at
New Hey Road
Salendine Nook
Huddersfield
West Yorkshire
HD3 4GS

Client:
FDA Landscape Ltd

Client Address:
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Wakefield Road
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Client Telephone:
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JCA Ref:
16383-A/AJB

JCA Limited
Arboricultural & Ecological Consultants

Contents

1. Introduction

1.1 Purpose of the Report

1.1.1 This Arboricultural Impact Assessment is required in relation to the proposed development at **New Hey Road**, **Salendine Nook**, **Huddersfield**.

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 retained trees.

1.2 Terms of Reference

1.2.1 JCA Ltd has been instructed by **FDA Landscape** to prepare an Arboricultural Impact Assessment, based on our Arboricultural Report dated 2nd October 2020 (JCA Ref: **16383/AJB**). The arboricultural survey and report conforms to the most recent specifications outlined in BS 5837: 2012 Trees in relation to design, demolition and construction - Recommendations.

1.2.2 I have been supplied with **Drawing No. 1814 Proposed Site Plan**, which details the proposed development. The tree data has been overlaid onto the proposed designs to create the Arboricultural Implications Plan, which can be found at **Appendix 7**. This provides the basis for which this Arboricultural Impact Assessment has been prepared.

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 objective assessment of the existing vegetation.

1.3.2 The specific design of the proposed development has been considered within the Arboricultural Implication Assessment in **Section 3** and is detailed on the Arboricultural Implications Plan at **Appendix 7**.

1.4 Survey Details

1.4.1 The original survey took place during the month of October 2020 and was conducted by Andrew Bussey *LANTRA Accredited PTI*.

2. Tree Descriptions and Recommendations

2.1 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.

3. Arboricultural Implications Assessment (AIA)

3.1 Proposed Development

3.1.1 The proposed development will consist of the construction of a Lidl supermarket.

3.1.2 All tree works required to accommodate the proposals are detailed in *italics* in the recommendation columns of the tables at **Appendix 1**. Please note that any works recommended during the initial survey are also listed in these tables in non italics.

3.2 Tree Removals for Development/Mitigation Measures

3.2.1 In order to facilitate the proposed development, it will be necessary to remove **T9, G10, G12** and **G18**, each of which are considered to be low value specimens which fall into retention category 'C'.

3.2.2 Whilst the development will require the removal of some trees within the site, it should be noted that a substantive planting scheme is included within the proposals. This will act to mitigate tree losses, improve the visual benefits of the site and the surrounding area, and will improve the localised tree stock.

3.3 Pruning for Development

3.3.1 In order to facilitate the car park and lighting column it will be necessary to root prune **T5** and one tree within **G13** under arboricultural supervision. It should be noted that the degree of root pruning required is minimal and is considered to have little impact on the long-term health of the trees in question.

3.4 Implications for Retained Trees

3.4.1 The Protective Barrier

3.4.1.1 In order to ensure the effective protection of retained trees during development, protective fencing will be installed in accordance with BS5837: 2012. This will be the first job on site following the tree removals. The fencing will be positioned to protect the entire **Root Protection Area** (**RPA**) of the retained trees, in order to create a **Construction Exclusion Zone** (**CEZ**).

3.4.2 Construction of Car park

3.4.2.1 A proposed car park is located within the RPA of **T5**. Due to the minimal nature of the incursion, it is not considered necessary to install specialised surfaces. Instead, root pruning will be undertaken under the supervision of an appointed arboriculturist to prevent 'ripping' damage, which is commonly associated with mechanical excavation.

3.4.3 Demolition

3.4.3.1 No demolition activities are required adjacent to retained trees and as such, no mitigation measures are considered necessary.

3.4.4 Construction / Foundation Design

3.4.4.1 Prior to construction, all protective measures required and listed in **Section 3.4.1** (protective measures) must be correctly installed to prevent unnecessary damage to trees during the development.

3.4.4.2 The footprint of the proposed supermarket does not incur 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.

3.4.4.3 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.

3.4.5 Utilities

3.4.5.1 A proposed lighting column is located within the RPA of one tree within **G13**. Due to the minimal nature of the incursion, root pruning will be undertaken under the supervision of an appointed arboriculturist to prevent 'ripping' damage, which is commonly associated with mechanical excavation.

3.4.6 Construction of Retaining Wall

3.4.6.1 A retaining wall is to be erected adjacent to the rooting zones of **G13**. In order to ensure that tree roots are not damaged and to avoid potential land slip, the rear of the wall is to be sheet piled.

3.4.6.2 It should be noted that the purpose of the retaining wall is to ensure that the existing ground levels within the rooting zones of G13 are not changed or disturbed as part of the development.

4. Conclusions

4.1 We are informed that there are Tree Preservation Orders in force adjacent to this site.

4.2 Some tree works were recommended during the original survey, irrespective of the development proposals. This is to manage potential risks or for general maintenance purposes. These are detailed at **Appendix 1**.

4.3 The arboricultural implications of the development consisting of a Lidl supermarket have been considered and are discussed in **Section 3**.

4.4 **T9, G10, G12** and **G18** require removal and **T5** and one tree within **G13** require root pruning in order to facilitate the proposed development. These are discussed in **Section 3.2** and their locations are shown on the Arboricultural Implications Plan at **Appendix 7**.

4.5 The proposed development will be accompanied by an Arboricultural Method Statement (AMS) detailing the specific protection measures necessary for each tree. This should specify the required fencing standard and positions (the creation of the Construction Exclusion Zone) and necessary tree works.

4.6 The data gained during the original survey provides an indication of the health of the tree. However, it does not enable a comprehensive assessment of their condition over time. Trees are living organisms which are affected by many factors including weather conditions, diseases/disorders, light levels and human activities. Due to this, the report is only valid for a period of 1 year from the date of issuing. Should an update or revision of this report be required outside of this time period, JCA may require a further site visit to ensure that the condition of the trees has not significantly changed. It is advised that the trees are inspected regularly, in the interests of risk management.

Appendices

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
G 1	Early-mature Mixed species *Details in observations*	To 6	0+	0+ n/a	To 20	See plan	Coppiced Elm and Elder stumps with decay noted.	Remove. Low	POOR	POOR	LOW	LOW TO HIGH	≥0	U
T 2	Early-mature Sycamore *Acer pseudoplatanus*	13	3.5	0.5 E	42	4.5 4.5 6 4	An off-site specimen. In overall good condition with no major visible defects. Multiple pruning wounds due to crown lifting in lower crown, with small decay pockets forming. Epicormic growth noted at base.	No action required. n/a	GOOD	GOOD	MOD	MOD	≥20	B 1
G 3	Semi-mature Group *Details in observations*	9	0	0 n/a	20	See plan	Group of off-site, self-set trees, suppressed by T2. In acceptable condition at this time but of little arboricultural or landscape value. Species include Common Ash, Elder and English Elm.	No action required. n/a	FAIR	FAIR	LOW	HIGH	≥20	C 1
T 4	Early-mature Common Ash *Fraxinus excelsior*	14	3	4 SE	27	3 3 6 4.5	An off-site specimen in overall good condition with no major visible defects. Good future potential though could displace the adjacent wall in coming years. Slightly suppressed by T5.	No action required. n/a	GOOD	GOOD	MOD	MOD	≥20	B 1
T 5	Early-mature Sycamore *Acer pseudoplatanus*	11	2.5	0 SW	33, 34	6 6 5.5 6	An off-site specimen, twin-stemmed from ground level with a fairly balanced crown. In overall good condition with no major visible defects. Epicormic growth at base, minor deadwood in crown.	No action required. *Root prune the area shown in blue shade on the plan at* ***Appendix 7*** *under arboricultural supervision.* n/a	GOOD	GOOD	MOD	MOD	≥20	B 1
T 6	Semi-mature Common or Black Elder *Sambucus nigra*	4.5	2.5	1 n/a	10, 7, 8	4 3.5 4 0	A small, suppressed specimen of little arboricultural value. Located off-site.	No action required. n/a	FAIR	FAIR	LOW	LOW	≥10	C 1
T 7	Early-mature Sycamore *Acer pseudoplatanus*	13	0	4 SE	35	4.5 4 6 5	An off-site specimen, single-stemmed and vertical with a balanced crown. No major visible defects. Dense epicormic growth at base. It appears to be in good condition with no major visible defects.	No action required. n/a	GOOD	GOOD	MOD	MOD	≥20	B 1
T 8	Semi-mature Sycamore *Acer pseudoplatanus*	13	1.5	0 W	13, 20, 26	4 4 4 3.5	An off-site specimen. Multiple-stemmed from ground level with a fairly balanced crown. Some bark wounding due to fire damage to the northeast, as well as a broken branch. Snapped stem to the north adjacent to track. It is in acceptable condition at this time.	No action required. n/a	FAIR	GOOD	LOW	MOD	≥20	C 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 9	Early-mature Swedish Whitebeam *Sorbus intermedia*	12	2	3 SE	23	4.5 4.5 4.5 4.5	Single-stemmed and vertical with a balanced crown. In overall good condition with no major visible defects.Occasional pruning wounds due to crown lifting, with stubs remaining. Wounding in lower crown due to fire damage or possibly squirrel damage.	No action required. *Remove to facilitate the proposed development.* n/a	GOOD	GOOD	LOW	MOD	≥20	C 1
G 10	Early-mature Mixed species *Details in observations*	To 5	0+	0+ n/a	To 10	See plan	Self-seeded Sycamore, Common Ash and Elm of little significance.	No action required. *Remove to facilitate the proposed development.* n/a	FAIR	FAIR	LOW	MOD TO HIGH	≥10	C 1
T 11	Early Mature Sycamore *Acer pseudoplatanus*	9	1	1 n/a	30#	1 3 2.5 3	Situated on adjacent land. Single-stemmed and vertical with an unbalanced crown. Decay to the stem.	Inform the trees owner of their duty of care to have the tree removed. Low	FAIR	POOR	LOW	MOD	≥0	U
G 12	Semi-mature Common Ash *Fraxinus excelsior*	9	2	2 n/a	15	4.5 4.5 4.5 4.5	Self-set stems of Ash along the dry stone wall. Currently of little arboricultural value, although in good condition at present.	No action required. *Remove to facilitate the proposed development.* n/a	GOOD	GOOD	LOW	MOD	≥20	C 1
G 13	Mature Sycamore *Acer pseudoplatanus*	17	3	2 n/a	To 61	See plan (av. 7.5m spread)	Off-site, linear group of trees situated along the boundary and overhanging. 9 trees in total (8 Sycamore & 1 Elm). The Elm has minor bark wounds in the crown and has significant die-back. A prominent feature within the site. Western most specimen has bark wounding at base with the onset of decay but is in acceptable condition at this time. Ivy cover, epicormic growth and minor deadwood noted.	Inform the trees owner of their duty of care to have the Elm removed. *Root prune the area shown in blue shade on the plan at* ***Appendix 7*** *under arboricultural supervision.* Moderate	GOOD	GOOD	MOD	MOD	≥20	B 1
G 14	Semi-mature Group *Details in observations*	13	0	0 n/a	18	See plan	A large mass of vegetation, almost exclusively located off-site. Some small, dead Elm stems noted within (posing little risk at this time). Otherwise, trees within appear to be in acceptable condition at this time. Species include Common Ash, Hawthorn, English Elm and Sycamore.	No action required. n/a	GOOD	GOOD	LOW	HIGH	≥20	C 1
G 15	Early-mature Common Ash *Fraxinus excelsior*	12	1.5	2.5 n/a	23	See plan (av. 6m spread)	Linear group of off-site trees, situated alongside the footpath and overhanging the boundary. Minor deadwood and some bark wounds where rubbing against wire fencing but no major visible defects.	No action required. n/a	GOOD	GOOD	MOD	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 16	Semi-mature Common Hawthorn *Crataegus monogyna*	4	0	0.4 E	13, 12	2.5 2.5 2.5 2.5	A small, self-set specimen of little arboricultural value. In acceptable condition at this time.	No action required. n/a	GOOD	GOOD	LOW	HIGH	≥10	C 1
H 17	Semi-mature Leyland Cypress *X Cupressocyparis leylandii*	4	0	0 n/a	12	See plan (2m wide)	Typical garden boundary hedgerow; well maintained and providing effective screening. No major visible defects.	No action required. n/a	GOOD	GOOD	LOW	HIGH	≥20	C 1
G 18	Young Group *Details in observations*	6	0	0 n/a	8	See plan	Clusters of young, self-set vegetation of little arboricultual value. Species include Common Ash & Elder.	No action required. *Remove to facilitate the proposed development.* n/a	FAIR	FAIR	LOW	MOD	≥10	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 should be removed or treated in such a way as to make them safe where they have high ecological value, such as in a woodland setting.

Appendix 3: General Guidelines

A3.1 All tree work should 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 therein.

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 on a regular basis.

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 or fruit.

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).

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 can cause 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

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.

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.

Robert Hickey *FdSc (Arboriculture), TechArborA.* Robert joined JCA in January 2019 having obtained his foundation degree in Arboriculture at the University of Central Lancashire. He has various NPTC's qualifications and has previously worked for several Arboricultural contractors.

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.

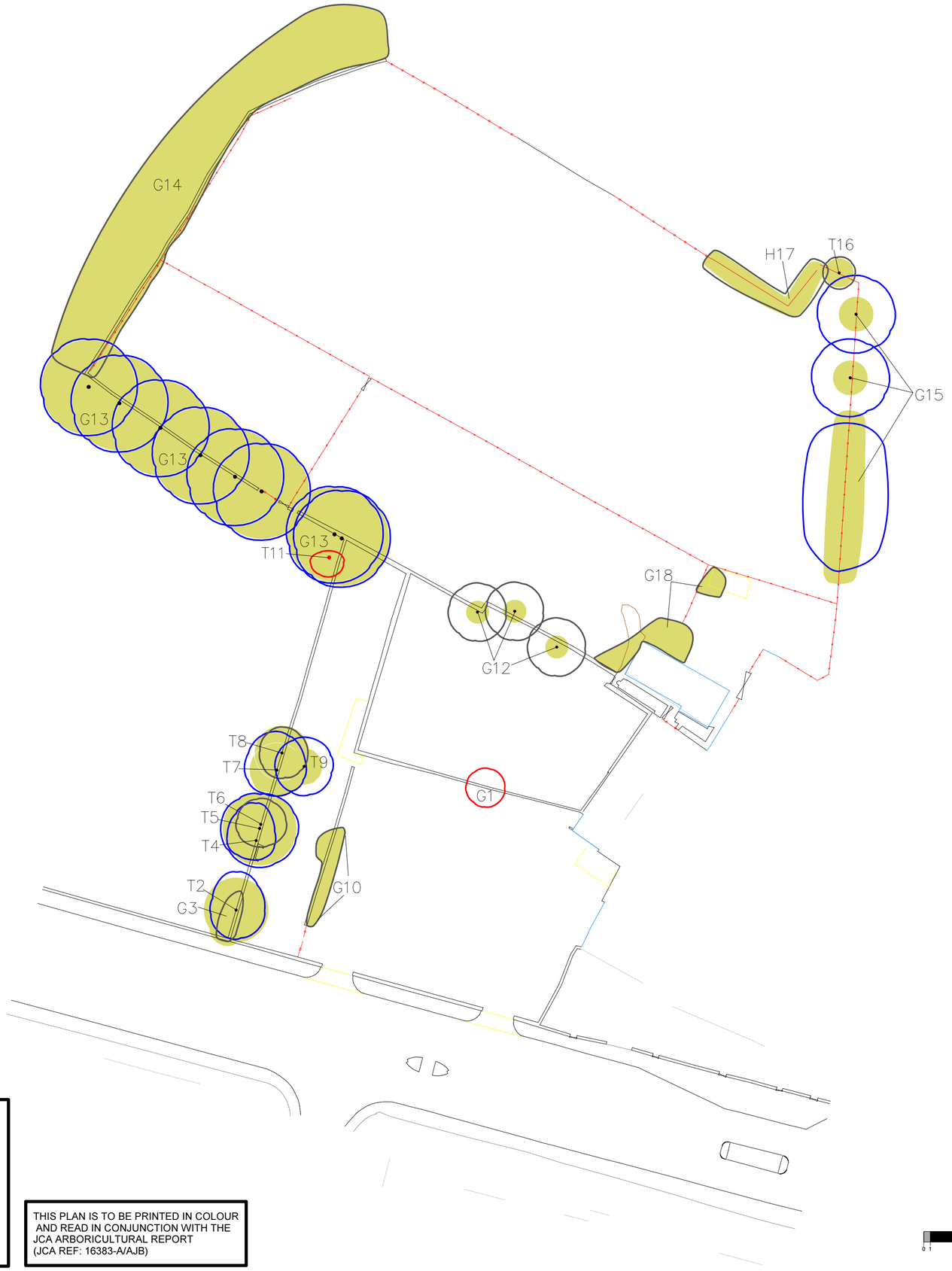
Consulting Staff: Ecology

Amanda Beck, Ecological Officer *Cert/He in Field Ecology, Diploma Field and Conservation Ecology, CIEEM member.* Amanda joined JCA's ecology department in 2018, previously working as a freelance Ecological Consultant in North Wales and as a trainee Ecologist in South Wales. She has a background surveying for botanical, amphibians, birds, terrestrial and marine mammals along with small mammal trapping and invertebrate research work on SSSI sites. She has practical experience in habitat management and creation while working as a volunteer for North Wales Wildlife Trust and currently volunteers with Yorkshire Wildlife Trust. She is a member of the Butterfly Conservation Trust, Bat Conservation Trust, Clwyd Bat Group and the British Hedgehog Preservation Society. Amanda is DBS checked and holds a Natural England level 1 bat licence.

Joe Earnshaw, Graduate Ecologist *BSc (Hons), MSc Biodiversity and Conservation, Qualifying CIEEM Member.* Joe joined the ecology department of JCA in 2018 after taking part in JCA's student training programme. He initially obtained a bachelor degree in Animal Management from Askham Bryan College, York. He has since furthered his education and brings to the company an MSc in Biodiversity and Conservation from the University of Leeds. Joe has expertise in aquatic invasive species identification and control.

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.



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Root Protection Area: RPA

THE ROOT PROTECTION AREA (RPA) INDICATES THE LIKELY ROOTING ZONE OF A TREE. THE RPA SHOULD IDEALLY REMAIN UNDISTURBED IF A 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.

THIS PLAN IS TO BE PRINTED IN COLOUR AND READ IN CONJUNCTION WITH THE JCA ARBORICULTURAL REPORT (JCA REF: 16383-A/AJB)

0 1 5 10 15 20 30 40 50 metres

Appendix 6: Tree Constraints Plan

ADDRESS: New Hey Road, Salendine Nook, Huddersfield, West Yorkshire, HD3 4GS. JCA REF: 16383-A/AJB.

SCALE : 1:500	PAPER SIZE : A2

SURVEYED BY: AJB	DRAWN BY: AJB	APPROVED BY: SR

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

JCA Limited

Arboricultural & Forestry Consultants

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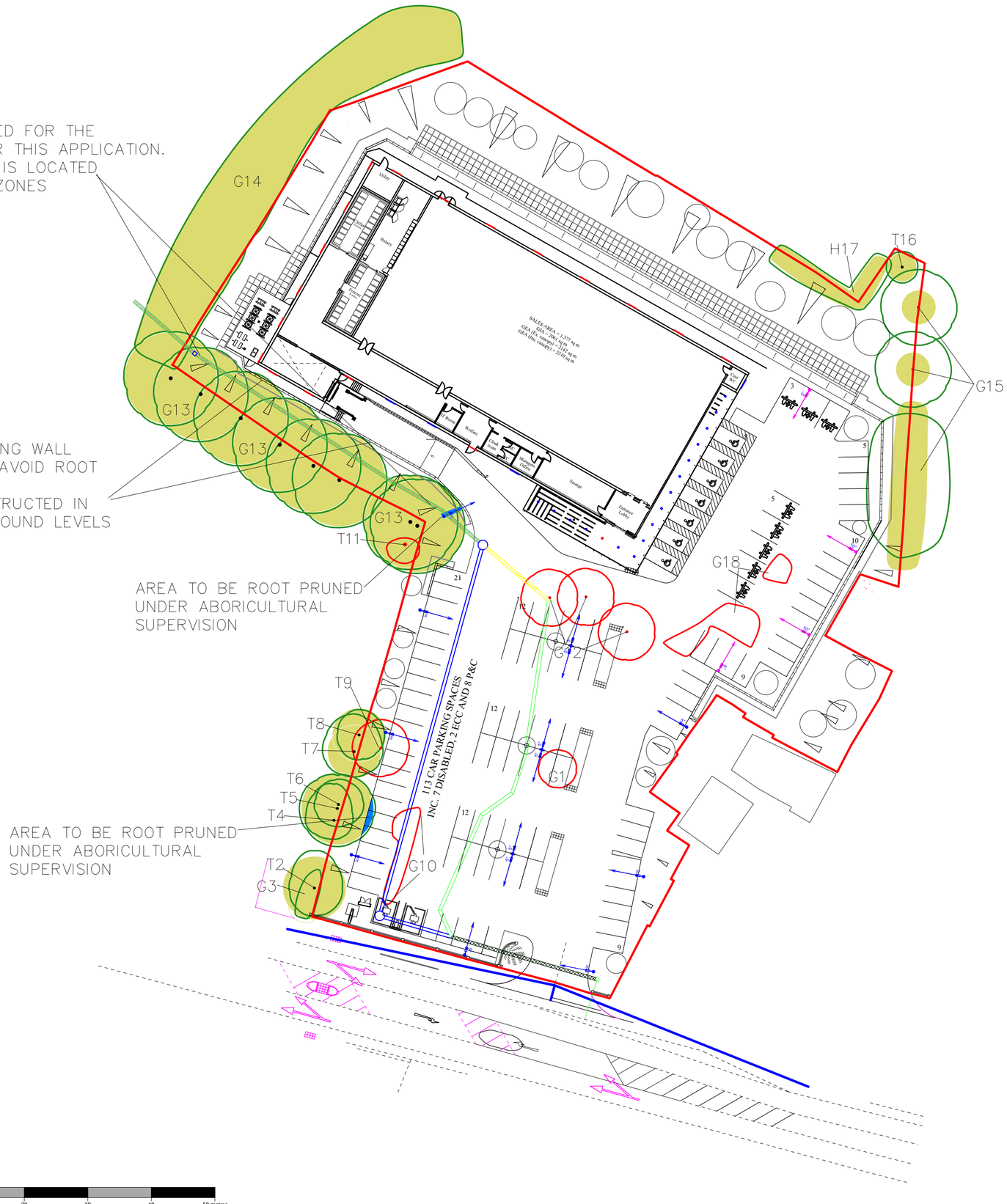
NO WORKS ARE PROPOSED FOR THE EXISTING CULVERT UNDER THIS APPLICATION. THE CULVERT DIVERSION IS LOCATED OUTSIDE TREE ROOTING ZONES

THE REAR OF THE PROPOSED RETAINING WALL IS TO BE SHEET PILED IN ORDER TO AVOID ROOT DAMAGE.
THE RETAINING WALL IS TO BE CONSTRUCTED IN ORDER TO MAINTAIN THE EXISTING GROUND LEVELS WITHIN G13.

AREA TO BE ROOT PRUNED UNDER ABORICULTURAL SUPERVISION

AREA TO BE ROOT PRUNED UNDER ABORICULTURAL SUPERVISION



THIS PLAN IS TO BE PRINTED IN COLOUR AND READ IN CONJUNCTION WITH THE JCA ARBORICULTURAL REPORT (JCA REF: 16383-A/AJB)

0 1 5 10 15 20 30 40 50 metres

Appendix 7: Arboricultural Implications Plan

ADDRESS: New Hey Road, Salendine Nook, Huddersfield, West Yorkshire, HD3 4GS. JCA REF: 16383-A/AJB.

SCALE : 1:500	PAPER SIZE : A2

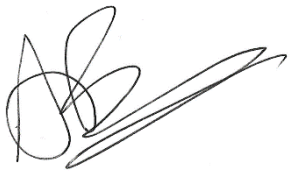
	TREE TO BE RETAINED
	TREE TO BE REMOVED
	STEM OF TREE TO BE RETAINED
	STEM OF TREE TO BE REMOVED
	ROOT PROTECTION AREA
	LOCATION WHERE ROOT PRUNING IS REQUIRE UNDER ARBORICULTURAL SUPERVISION IN ORDER TO FACILITATE THE PROPOSED CAR PARK AND LIGHT COLUMN

JCA Limited

Arboricultural & Ecological Consultants

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



.....

Andrew Bussey *LANTRA Accredited PTI*.

9th February 2021

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

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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)

Advice for Engineers, Loss Adjusters and Insurers

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

Advice for Local Authorities and Social Housing

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

Tree Advice for the Legal Profession

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

Veteran Tree Management

- Ancient Woodland Management
- Veteran Tree Management

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:

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