N&J TREE SERVICES LTD



PROCTORS NURSERY
HIGH LANE BROWN EDGE
STOKE ON TRENT

BS5837
TREE REPORT
2016

Proctors Nursery
Brown Edge
Stoke on Trent
BS5837 Tree Report
March 2016

Prepared by:
Tim Ashburner
Arboricultural Consultant

N&J Tree Services Ltd
Unit 4 Ford Green Trading Centre
Ford Green Road, Smallthorne
Stoke on Trent
ST6 1NG
Tel: 01782 502847
Fax: 01782 532026
e-mail: tim@njservices.co.uk

for

Mr Barry Proctor
Proctors Nursery, High Lane
Brown Edge
Stoke on Trent
ST6 8RT

PROCTORS NURSERY
BROWN EDGE
STOKE ON TRENT

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N&J TREE SERVICES LTD
38 Hammond Avenue, Brown Edge. ST6 8QU
Company Reg No. 5319607
www.njtreeservices.co.uk m: 07768 555344 t: 01782 502847

Arboricultural Report in relation to BS 5837 Trees in Relation to Design, Demolition and Construction - Recommendations 2012

Proposed Installation of New Car Park Area
Land at Proctors Nursery 99 High Lane, Brown Edge, Stoke-on-Trent ST6 8RT

1 INTRODUCTION

1.1 N& J Tree Services have been commissioned by Mr Barry Proctor to conduct an arboricultural survey of a plot of land at the above. This report details the arboricultural impact of developing the site, subsequent mitigation recommendations and protective measures

1.2 The survey was carried out on 17th March 2016 by means of inspection from ground level by a qualified Arboricultural Consultant. Trees were assessed in accordance with *BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations.*

1.3 Under the British Standard the assessment of trees is made objectively. The categorisation method identifies the quality and value of the existing tree stock.

1.4 Three mature trees (T1 – T3) within the boundary of the development area were surveyed and mapped (refer to image 1 and appendix 1 aerial photograph for tree locations below). All Arboricultural information recorded during the survey is presented at appendix 2).

1.5 The nature of the soils on site was not assessed during the survey. The possibility of soil movement due to tree root activity cannot be discounted.

1.6 This report provides the results of the survey and includes the following:

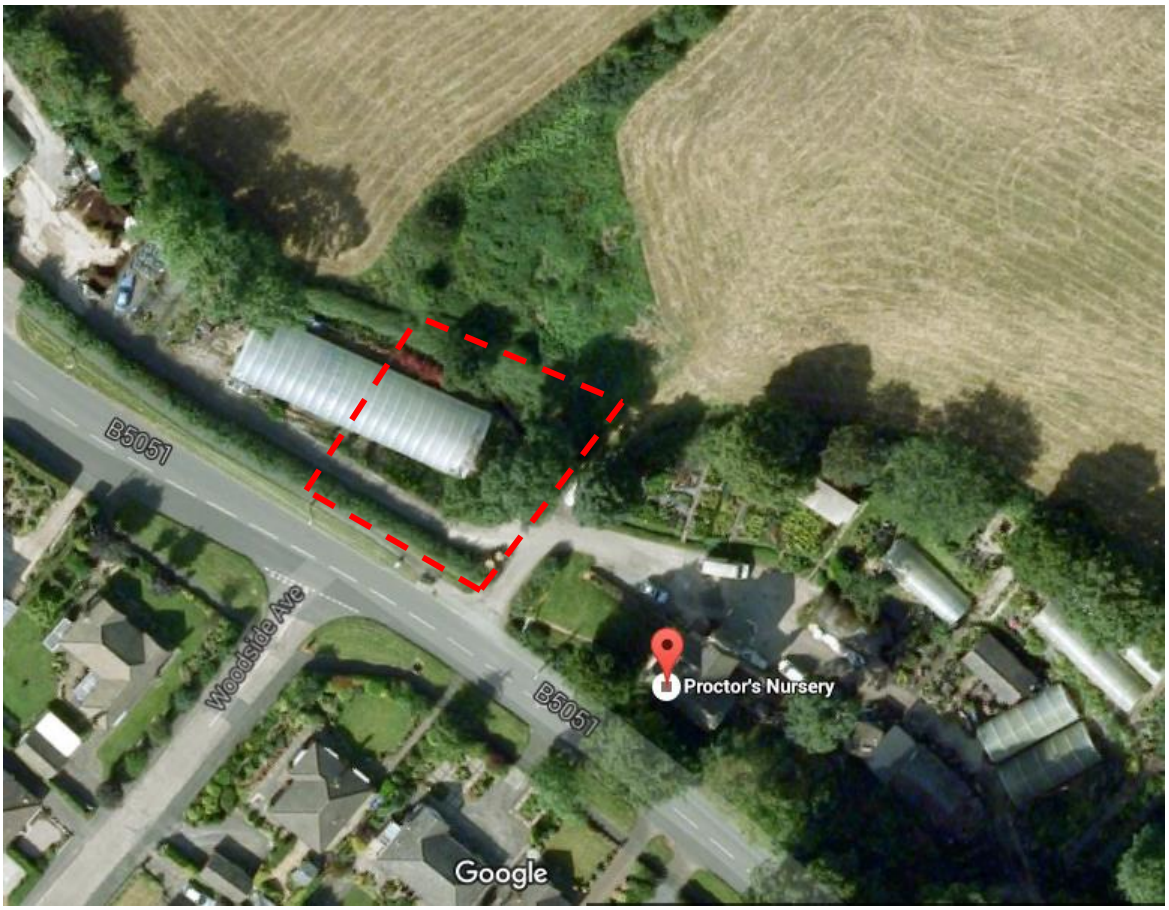
- A schedule of all trees located within the proposed development site (Appendix 2);
- An assessment based on *BS 5837:2012*, of trees in terms of their potential value within any future development.
- On the basis of this assessment trees have been categorised into one of four categories: A, B, C or U ;
- An assessment, based on *BS 5837:2012*, of the requirement for protection of trees during the construction phase (Section 6);
- Advice on removal, retention and management of trees (Sections 5 & 7);

2. THE SITE AND SURROUNDINGS

2.1 The survey area is located on the Nursery Grounds adjacent to the B5051 High Lane, which is to the east, with typical farm land and associated small holdings situated adjacent to its north, south and west sides.

2.2 Weather conditions during the survey were predominantly sunny, clear and still.

Image 1: Aerial view of site



3.0 Development Proposals

3.1 The proposed development is the installation of a new car park.

4. STATUTORY PROTECTION AND GUIDANCE

National Planning Policy Framework (NPPF)

4.1 The NPPF assumes protection of all ancient woodland and veteran trees unless it can be clearly demonstrated that the need of, or benefits of, development outweigh the loss. In this respect ancient woodland is defined as an area which has been wooded continuously since at least 1600 AD and a veteran as a tree of exceptional value for wildlife, in the landscape, or culturally because of its great age, size or condition.

4.2 ***On this site there are no ancient woodland or veteran trees.***

Tree Preservation Orders & Designations

4.3 Local authorities reserve the right to create Tree Preservation Orders (TPO) to protect the amenity value conferred to a location by a tree or group of trees. Where a TPO is in force, lopping, topping, felling, uprooting or wilful damage caused to a tree is prohibited and such actions may be prosecuted and incur an unlimited fine. Works to TPO protected trees must only be undertaken with the written consent of the local authority.

I have been advised that two of the three trees on the site T2 & T3 (see below) are protected by a Tree Preservation Order (SMOO4A014 and SMOO4T090).

Protected Species – Bats

4.4 Mature trees often contain cavities, crevices and hollows which are a potential habitat for roosting bats. Bats are afforded protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), as well as under Schedule 2 of the Conservation of Species and Habitats Regulations 2010, and as such causing damage to a bat roost constitutes an offence.

4.5 A preliminary ground level appraisal of the wildlife habitat value of the tree was undertaken as part of the arboricultural survey. No obvious features were noted to suggest roosting bats maybe present.

4.6 Should the presence of a bat roost be suspected whilst undertaking works on the tree on site, operations must be halted until a licensed bat handler or ecologist can provide advice.

Protected Species – Birds

4.7 Trees are a potential habitat for nesting birds, which (as well as their nests and eggs) are protected under the *Wildlife and Countryside Act 1981* (as amended). This makes it an offence to intentionally or recklessly, damage or destroy an active bird's nest or any part thereof.

4.8 Due to the suitability of the tree within the vicinity of the survey boundary for nesting birds, all tree work should ideally be undertaken outside the bird nesting season (British bird nesting season: (March to August inclusive). If this is not possible then a detailed inspection of each tree should be undertaken by a qualified ecologist immediately prior to the arboricultural works. Should an active nest be found (being built, containing eggs or chicks) work must be halted until the nest becomes inactive.

5.0 TREE POPULATION

5.1 The tree population recorded is entirely confined within the site boundary; a schedule that includes terms of species, condition, age, management recommendations and *BS 5837:2012* quality categories is provided at Appendix 2.

5.2 T1 is an early mature oak tree (quercus robur), it is situated near to the site entrance and is advised as not been included within the preservation order. It has been "lopped / topped" at some time previous to a height of approximately 6m above ground level. The tree offers little visual amenity and has a limited remaining safe useful life expectancy (SULE) of <10yrs.



Recommendation – fell tree and look to plant a number of suitable replacement trees at a suitable location nearby (i.e. west perimeter boundary hedge)

5.3 T2 is a mature ash it is approximately 20-25m in height with a 750mm trunk diameter; the first major fork is at 3m above ground level with further sub division into the main scaffold branches above. There is a large part occluded wound (approx. 300mm diameter) at this main union where I believe a limb was shed some time previous. There is a risk that decay maybe progressive down into the main stem and around the main fork union, potentially weakening the structural integrity of the fork.





Showing T2 ash and large part occluded wound at main fork

Additionally the tree has had some quite extensive reduction work at its crown extremity (as pic below) bordering on what I would call “lopping”. The extensive works have contributed to the current stressed condition the tree is in which can be seen in the form of the profusion of epicormic shoots that have sprouted throughout the trees canopy.





Epicormic shoots in stressed canopy and new material around tree base

The material around the base of the trees appears to be made up of recently imported bricks / rubble and may have altered levels around the rooting zone of the trees (unable to confirm to what depth), which may have also contributed to the stressed condition of the ash.

Taking into consideration all of the above factors, I am of the opinion that the tree now has a limited remaining period of SULE (i.e. <5yrs), which will be accelerated if the current site usage is altered to become a visitors car park, as this will lead to additional pressure on the tree in the form of hard surfacing. This along with an increased risk / target value in terms of vehicles parking beneath the tree(s) for any potential subsequent branch failure all support the fact that consideration for removal may provide the most prudent long term solution .

Recommendation – fell tree and look to plant a number of suitable replacement trees at a suitable location nearby (i.e. west perimeter boundary hedge), which will provide longer term tree cover for the site for the foreseeable future.

5.4 T3 is an early mature oak tree (quercus robur), it is in fair condition being a quite stunted tree at approximately 8m in height. It is growing adjacent to the brook that runs alongside and is included within the area TPO order as alluded to above. The main benefit of this tree would be its environmental value in terms of wildlife habitat (nesting birds, insects etc.).



Showing T3 oak, retaining wall and new length of beech hedge

What appears to be a new retaining section of wall has been constructed along the south perimeter of the proposed new car park area above the existing poly tunnel and a new beech hedge planted along its length. It is also proposed to leave the existing hedgerow that runs along the west perimeter adjacent to the poly tunnel to increase in height by approximately 1m to provide additional screening.



Hedgerow / area for replacement planting.

Height of hedge here to be allowed to grow

Tree Quality Categorisation

5.5 Under *BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations* trees and groups are objectively assigned a quality category designed to quantify their value within any future development. Table 1, overleaf, presents a summary of the categories presented in the British Standard.

Table 1: Summary of *BS 5837:2012* tree quality categorisation criteria

Category A	Trees of high value including those that are particularly good examples of their species and/or those that have visual importance or significant conservation or other value
Category B	Trees of moderate value including those that do not qualify as Category A due to impaired condition and/or those that collectively have higher value than they would as individuals; also trees with material conservation or other value
Category C	Trees of low value including those with very limited merit or impaired condition; trees offering transient or temporary landscape benefits
Category U	Trees with irremediable defects and anticipated early loss due to collapse; dead trees or those in immediate decline and those with infection pathogens

6.0 IMPACTS OF THE PROPOSED DEVELOPMENT

6.1 Table 2 lists the number and quality of trees that will require removal in order to facilitate the development proposals and those that can be retained. This is the result of an assessment based on the proposed site plan and discussions with the client regarding their application strategy.

Table 2: Arboricultural implications of the proposed development

	A	B	C	U
Trees that can be retained		**T3 (B3)**		
Total		**1**		
Trees that require removal to facilitate development				
Total	**nil**	**nil**	**nil**	**nil**
Trees that require removal due to disease or recognised structural defects.			**T1 & T2 (C1)**	
Total	**nil**	**nil**	**2**	**nil**

See Appendix 2, Arboricultural Data Sheets for subcategories

6.2 One tree can be retained within the proposals for the development.

6.3 Protective fencing should be erected before any construction works are initiated and be in accordance with BS 5837: 2012 to provide a suitable construction exclusion zone (CEZ).

6.4 Where planning permission is granted, the retention schedule (where applicable) would normally form a part of that permission. Any change to this schedule would therefore be likely to require an application to vary the consent.

6.5 A Tree Constraints Plan (TCP), not included in this report, will show the RPA for each tree (detailed in tree survey schedule). Shade is often used as a reason to prune/fell trees and careful consideration should be given when planning the layout of any new development, however this is not relevant in this instance.

7.0 TREE PROTECTION REQUIREMENTS

Root Protection Areas

7.1 As per *BS 5837:2012*, the **Root Protection Area (RPA)** is calculated using each tree's diameter at 1.5 metres (refer to Appendix 2) and represents the minimum area around each tree that must be left undisturbed to ensure their survival.

7.2 Tree roots typically spread two times the width of the crown, although this figure may be significantly increased for certain species and where specific ground conditions are present. The majority of tree roots are found in the top 600 mm of soil and most of the fine roots that absorb water and nutrients are found in the top 100 mm.

7.3 The morphology of roots is influenced by past and present site conditions (the presence of roads, structures and underground services), soil type, topography and drainage. This means that a tree's roots may not be uniform in their extent and the **RPA** may not be a circular area centred on the tree stem.

7.4 On this site the majority of trees are growing in relatively poor ground conditions.

Protective Fencing and Exclusion Zones

7.5 Temporary protective barrier fencing will be required to demarcate a **Construction Exclusion Zone (CEZ)** around any retained trees. This must be put in place prior to the commencement of any development works, including bringing machinery or materials onto site, the erection of site huts and commencement of earthworks.

7.6 The **CEZ** acts to protect both tree roots and branches and has been extended to incorporate canopy spread where appropriate.

7.7 Protective fencing alignment in this instance will be for one tree (T3) and will predominantly be required to protect the tree trunk from impact etc. and a 2m distance from the base of the tree will suffice.

7.8 The fencing must be fixed into the ground to withstand accidental impact from machinery and to ensure that a sufficient protective area is maintained. Details of recommended protective fencing are shown on Appendix 3.

7.9 A weatherproof notice stating 'Construction Exclusion Zone – Keep Out' must be fixed to each fencing panel. An example notice is shown on Appendix 3.

7.10 Any alteration to the fencing alignment to allow for approved activities will be made in agreement with the council's Arboricultural Officer.

7.11 The protective fencing must not be removed until the physical construction phase has been completed and all vehicles have been removed from site, to the satisfaction of the council's Arboricultural Officer.

Ground Contamination

7.12 Storage areas for liquids such as fuels, oil or paint should not be located within 10m of any trees on or within proximity to the site due to the risk of soil contamination caused by accidental spillage.

7.13 Particular care must be taken when working on or close to sloping ground to avoid unintentional runoff into the rooting area of retained trees or nearby water bodies.

Underground Utility Issues

7.14 No utility drawings were provided and no assessment has been made of the juxtaposition of tree roots and the likely location of new services. It has been presumed for the purposes of this report that all utilities will be installed outside of the **Construction Exclusion Zone**.

7.15 Where the installation of services within the **Construction Exclusion Zone** of retained trees is unavoidable, appropriate work methods will be required to ensure the safe long term survival of those trees. This process will require additional consultation with a qualified Arboricultural Consultant and is likely to be more expensive than conventional trench installation.

Ground Level Changes

7.16 A rise or reduction in soil level can have major implications on the longevity and health of the trees. Minor changes (up to 100mm) can be tolerated in some cases but is heavily dependent on tree species, condition and growing environment.

7.17 Existing ground levels within the **Construction Exclusion Zone** should be respected as far as is reasonably practicable. The advice of a qualified Arboricultural Consultant should be sought if level changes are required.

8.0 MANAGEMENT RECOMMENDATIONS

Tree Work (where required)

8.1 Fell two trees (T1 & T2).

Mitigation for the removal of trees (where applicable)

8.2 Plant 6No. replacement heavy standard sized trees along west perimeter hedge of the site.

Post Construction Tree Care

NA

Foundation Depth Calculations (where applicable)

8.3 This report has been written in accordance with, and to satisfy the requirement of *BS 5837:2012*.

8.4 The nature of the soils on site was not assessed during the survey. The possibility of soil movement due to tree root activity cannot be discounted.

9.0 Conclusion

9.1 A total of 3 trees were recorded during the survey within the development area site boundary.

9.2 Based on an objective assessment made in accordance with ***BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations*** the trees were valued as either having category C1 or B3 features.

9.3 The tree population is confined predominantly adjacent to the proposed development area.

9.4 Two trees will need to be removed to facilitate the development proposals.

9.5 Initial informal investigations have suggested that two of the trees commented on within the site are subject to a Tree Preservation Order as follows:-

T1 oak – not included
T2 ash - SMOO4T090
T3 oak – SMOO4A014

9.6 No obvious features / signs were observed to suggest the tree was being used by roosting bats (i.e. bat droppings, feeding remains and other signs of bats such as staining often found around roost entrances).

SURVEY METHOD

The survey of trees was conducted from ground level only. The nature of the soils on site was not assessed. Trees are dynamic living organisms with a constantly changing structure; even trees in good condition can suffer from damage or stress. The information recorded is presented as being correct at the time of survey.

The following features of each tree, group of trees or wood may have been recorded in the Arboricultural Survey Data Sheets at Appendix 1.

Species The common name is given. The Latin name may also be given if further clarification is required.

Height Top height of tree recorded in metres.

Stem Diameter For single-stemmed trees the measurement is taken at 1.5 metres above ground level and recorded in millimetres.
For multi-stemmed trees an average all stems measured at 1.5m above ground level is used.
For tree groups a range from minimum to maximum diameters is provided based on measurements taken using one of the aforementioned methods.

No. of Stems A count of stems arising below a height of 1.5 metres.

Crown Spread The N, S, E and W branch spreads are recorded in metres to provide a representative crown shape.

Height of Lowest Branch Crown clearance above ground level recorded in metres.

Direction of Lowest Branch The direction of growth of the first significant branch from the point of attachment.

Maturity **Young** Trees than can reasonably be relocated or replaced like for like, without undue cost;
Middle Age Trees in the established growth stage of their life with the potential to continue increasing in size;
Mature Trees that have reached their ultimate size, given their location and surroundings;

Condition **Good, Fair, Poor.** An overall assessment of a tree's physiological and structural state in which factors that may increase its susceptibility to the effects of development are taken into account.

Veteran. Trees that are in such a condition as to significantly increase their biological, cultural or aesthetic value. This is characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.

Comments A brief evaluation and description of the tree with comments on form, vitality, health and any significant defects or symptoms of ill-health.

BS 5837 Tree Quality Assessment

The tree quality assessment is based on Table 1 of BS 5837:2012 (See below). Four categories (A, B, C and U) are used to denote tree quality (A= High, B = Moderate, C = Low, U= Unsuitable for retention). Subcategories (1-3) denote the specific function value of the trees and the reasoning behind the allocation of a specific category (the subcategories may be used in combination but do not accumulate collective weight).

Root Protection Area (RPA)

The RPA is allocated to ensure that a sufficient area is left undisturbed during development. It is provided as an area (m^2) and as the radius of a circle (m) typically plotted from the centre of the stem.
The RPA is calculated using a mathematical equation included in BS 5837:2012 (Section 4.6 and Table D.1) and is based on a trees stem diameter. In some cases the RPA may need to be adapted to best reflect the likely area and position of roots required to ensure survival; this may be based on criteria such as the tree's condition, species, crown spread and any barriers to growth. Any alteration must be justifiable but is made at the Arboricultural Consultants discretion.

Recommendations

Recommendations for arboricultural works, etc. are based on the **current** land use, and take into account the tree or group attributes without bias to the proposed development.

SURVEY METHOD

Estimated Remaining Contribution

An estimation of the life expectancy as healthy functioning tree. This will be influenced by species and the condition of the tree at the time of survey.

Long > 40 years
Medium 20 – 40 years
Short less than 20 years

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.*			See Table 2
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	See Table 2
Category C **Trees of low quality** with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

Trees and shrubs are living organisms whose health and condition can change rapidly. The health, condition and safety of the trees should be checked on a regular basis, preferably at least once a year, and conclusions and recommendations are valid only for a period of 1 year.

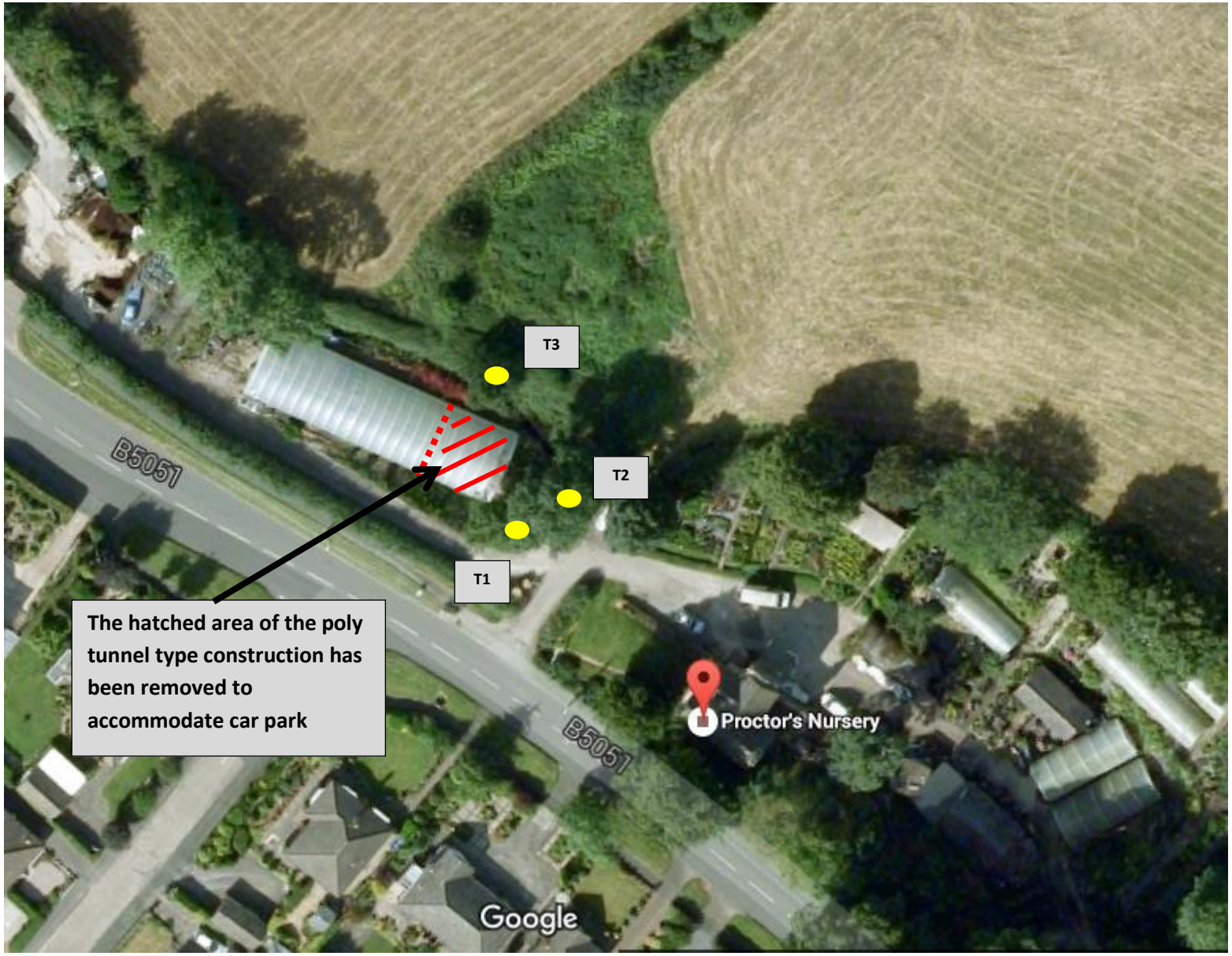
I am an approved contractor and member of the Arboricultural Association with over 20 years experience, which was predominantly spent as the principal tree officer for Stoke on Trent City Council. I have significant experience in tree surveying for safety for various land class uses (i.e. Highways, Education sites and Formal Parks). I am a licensed user of the Quantified Tree Risk Assessment module, which is a nationally recognised tree risk management system. I have vast experience in utilising the industries Visual Tree Assessment (VTA) criteria.

I also hold the Professional Tree Inspectors Certificate, which is highly regarded within the industry as one of the most recently recognised training qualifications for tree inspectors / surveyors.

All of our reports are covered by Professional Indemnity Insurance to the value of £1,000,000

Tim Ashburner
Consultant Tree Surveyor / Inspector
N&J Tree Services Ltd

Appendix 1 Tree Location Plan



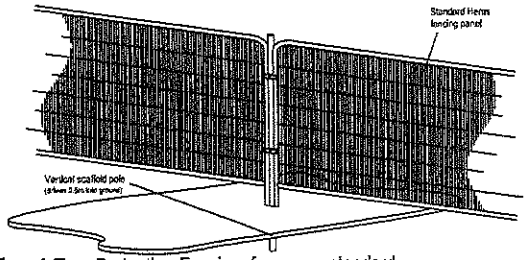
Appendix 2: Arb Survey Data Sheet

Surveyor TA
Date 17.03.16
Site Proctors.
Drg Ref

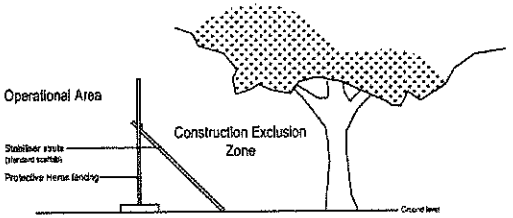
N&J TREE SERVICES LTD

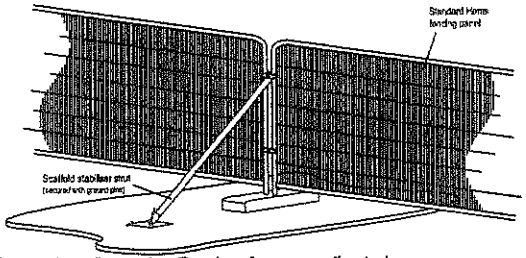
Ref	Species	Height	Stem Dia.	No. of stems/ individuals	Crown Spread North	Crown Spread South	Crown Spread East	Crown Spread West	Height of Lowest Branch	Direction of Lowest Branch	Maturity	Condition	Comments on form, condition, health and significant defects	BS5837 Tree Quality Assess.	Radius of RPA guide circle	BS5837 RPA Area	Management Recommend's	Estimated Remaining Contribution	TPO
		(m)	(cm)	arising below 1.5m	(m)	(m)	(m)	(m)	(m)		young, early mature, mature	Good, fair, poor, veteran		A,B,C,R (1,2,3)	(m)	(m2)		Long, Medium, Short	(*)
T1	Oak	8	400	1	1	2	1	1.5	1	W	M	POOR	Tree previously lopped / topped at 6m a.g.l.	C3	NA	NA	Fell tree	Short	
T2	Ash	20	750	1	3	2	2	3	2	S	EM	Good	Fair condition showing signs of stress in the form of epicormic shoots throughout the canopy; the stress is mainly due to extensive pruning works (lopping / reduction) and alteration of levels / surface material.	C1	NA	NA	Fell tree	Short / medium	*
T3	Oak	8	400	1	2	2	3	3	1	S	EM	Fair	Tree with stunted growth form mainly environmental value.	C3	5	40	No work required	Medium	*

REF: Appendix 3

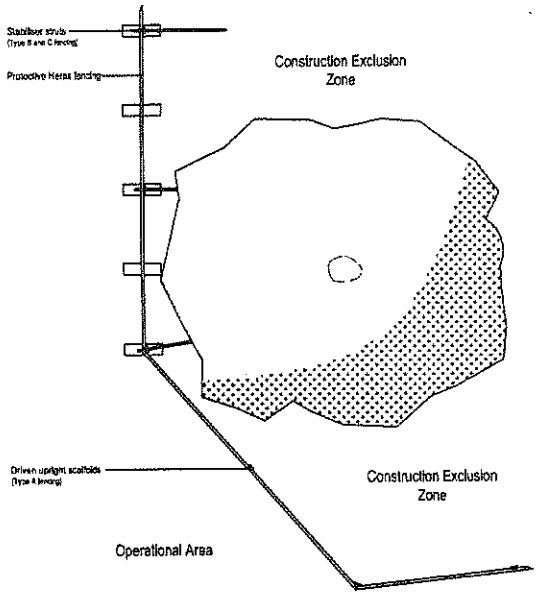


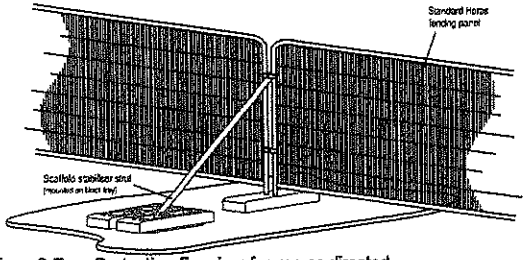
Type A Tree Protection Fencing: for use as standard
(see Tree Protection Plan for layout)





Type B Tree Protection Fencing: for use as directed
(e.g. where Type A would cause unacceptable damage to roots or underground services)





Type C Tree Protection Fencing: for use as directed
(e.g. on hard surfaces)



Tree Protection Notice to be attached to fencing 1.5m from the ground, facing out of the Construction Exclusion Zone and located at regular intervals along the fence line.

The notice must be at least A4 in size