Land at Cliff Road, Darfield
Barnsley

Phase 2
Pre-development Arboricultural Report

Prepared at the request of

Mr Peter Firth

The applicant

21 October 2023

By

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Wharncliffe Trees and Woodland Consultancy

Summary

I have been instructed by Mr Peter Firth, the applicant, to carry out a pre-development survey of the significant trees on land at the corner of Doncaster Road and Cliff Road, Darfield.

The trees are growing in the garden of a large property on Doncaster Road. The approximate location of seven individual trees and three groups are recorded on Plan 1 that shows the existing site layout.

Table 1 records their species, dimensions, age, life expectancy, categorisation and root protection areas. This information was collected, interpreted and recorded in accordance with BS5837:2012 *Trees in relation to design, demolition and construction – Recommendations*.

The trees vary in age from juvenile mature to mature, are principally broadleaved trees and are largely located around the boundaries of the site.

Two of the individual trees have been included in retention category 'B' (shown blue on plan 1) because of their favourable condition and high landscape value to the front of the site with Doncaster Road. Two of the groups have also been included in retention category 'B' because of the significance they have in the landscape as cohesive groups.

The remaining five individual trees and two groups have been included in retention category 'C' (shown grey on plan 1) because they are either relatively small, have limited landscape value to the wider area, or have declining health, preventing them being included in a higher category.

No trees have been categorised 'A', the highest retention category reserved for the most important or significant trees. No trees have been included in retention category 'U' which is reserved for trees in poor condition and that cannot be retained within the current site use.

The development proposes 10 dwellings across the middle and southern parts of the site.

This would require removal of all but two of the trees. The two trees that would be retained are the large sycamores on the northern boundary that are included in retention category B.

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APPENDICES

1 INTRODUCTION

1.1 Instruction

I have been instructed by Mr Peter Firth, the applicant to carry out a pre-development tree survey of the significant trees growing on land at the corner of Cliff Road and Doncaster Road, Darfield.

The tree survey is intended to provide a structured, impartial assessment of the tree population that could be affected by proposed development.

The survey is intended to be informative to all stages of the development process and was carried out in accordance with *BS5837: 2012 Trees in relation to design, demolition and construction – Recommendations.*

1.2 Documents and Provided Information

I was provided with the following documents:

A plan from Barnsley Metropolitan Borough Council's Tree Preservation Order at the site.

A drawing of the proposed layout.. Revision J.

1.3 Limitations

This report is concerned only with assessing the condition of the trees, their importance in the local landscape and any cultural and conservation values.

It takes no account of the affects the trees may have on the soil, such as heave where trees are removed or shrinkage where trees are retained.

Trees are dynamic organisms influenced by weather, pests and diseases. Therefore, this report can only remain valid for a period of 24 months.

Any works around the trees such as trenching, pruning, storage of materials and trafficking that has not first been approved by a suitably qualified arboriculturalist will invalidate this report.

This report has been prepared for pre-development purposes. Whilst the condition of the trees has been assessed this is primarily to attribute a retention category. It is not a tree condition and safety report and may not include the same level of detail on tree health and structural condition.

No decay detection equipment was used to gather information on the condition of the trees.

All survey and inspection was completed at ground level.

2 SITE VISIT AND OBSERVATIONS

2.1 Site visit

I first visited the site on 23 May 2016 to complete the initial survey. I subsequently revisited the site on 27 January 2020 and 29 September 2023 to update the survey and information on the trees. All dimensions were taken using recognised methodology and arboricultural measuring equipment, unless otherwise stated.

The weather at the time of reinspection in September 2023 was sunny. Winds were light and visibility was good.

2.2 Brief Site description

The site is a large garden for a large stone property on Doncaster Road. The garden has boundaries with Doncaster Road to the north, Cliff Road to the west and Attlee Crescent to the south. The significant trees are generally confined to the boundaries of the garden. A number of smaller trees have regenerated naturally since the garden ceased being managed. The garden had originally been laid to lawn with shrubs and a number of hawthorn hedges.

2.3 Development Proposals

The development proposes ten dwellings across the middle and southern parts of the site. Access would be from Cliff Road for five dwellings and from land to the south to serve the other five dwellings.

2.4 Locations of the Trees

The positions of trees were plotted by me using fixed known points. I am not a land surveyor and the number of fixed points for the trees in Group 1 are limited. If more accuracy about the positions of the trees is necessary then the services of a land surveyor should be used.

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2.5 Tree observations

Table 1. The Tree Survey

Tree number	Species	Height (M)	Stem diameter in MM at 1.5m	Branch spread (M)	Ht of first branch above GL (M)	Ht of canopy above GL (M)	Life stage	Health	General observations on the tree's condition	Estimated life in years	Amenity value	Habitat value	Category
T1	Sycamore	17.0	680	North–6.6# South – 8.5 East – 6.5 West – 6.8	2.0 to west	1.8 to 3.0	Mature	Normal	The tree has a prominent position on the frontage with Doncaster Road. It is in good health and free from significant defects.	20+	High	Low	B 1&2
T2	Sycamore	16.0	750	North–6.2# South–7.8 East – 8.5 West –6.9	2.0 to west	1.8 to 4.0	Mature	Normal	The tree has a prominent position on the frontage with Doncaster Road. The main stem divides in two at 3.5m but the union is stable.	20+	High	Low	B 1&2
T3	Sycamore	14.5	585	North – 6.4 South – 5.7 East – 6.0 West –6.0#	3.0 to west	3.0 to 4.5	Mature	Early decline	The tree has a prominent position of the boundary of the site with Cliff Road. The tree's health is declining but there are no significant defects.	10+	Low	Low	C 1
T4	Hawthorn	10.0	475	North – 2.6 South – 5.3 East – 4.5 West – 5.0#	1.5	1.0	Old mature	Mid-decline	An old tree for the species. The crown is biased to the south but is free from significant defects.	10+	Low	Low	C 1

Tree number	Species	Height (M)	Stem diameter in MM at 1.5m	Branch spread (M)	Ht of first branch above GL (M)	Ht of canopy above GL (M)	Life stage	Health	General observations on the tree's condition	Estimated life in years	Amenity value	Habitat value	Category
T5	Holly	12.0	320	North – 3.5 South – 3.5 East – 3.5 West – 3.5	GL	GL	Young mature	Moder-ate vitality	There is an acute stem union at 2.5m. This is stable and considered a minor defect.	20+	Low	Low	C 1
T6	Holly	8.0	247 and 262	North – 3.0 South – 3.0 East – 3.0 West – 3.0	GL	1.5	Young mature	Moder-ate vitality	There are a number of old pruning wounds on the main stem up to 5cm diameter that contain some decay and are forming cavities. These are minor defects.	20+	Low	Low	C 1
T7	Apple	7.0	410 @ 0.5	North – 4.3 South – 4.2 East – 4.0 West –4.0	2.5 to east	0.5	Old mature	Early decline	There is a bark wound that is forming a decay cavity on the east side of the main stem between 1.5 and 2.0m.	10+	Low	Low	C 1

Tree number	Species	Height (M)	Stem diameter in MM at 1.5m	Branch spread (M)	Ht of first branch above GL (M)	Ht of canopy above GL (M)	Life stage	Health	General observations on the tree's condition	Estimated life in years	Amenity value	Habitat value	Category
G1	17 x sycamore 1 x ash 4 x cherry 1 x copper beech 1 x Scots pine 1 x hawthorn	6.0 to 17.0	<700	North – 8.0 South- 5.0# East – 4.0 West – 4.0	1.0	1.0	Juvenile mature to mature	Normal	A large group of 25 mixed species trees that vary in age, condition and significance. The trees have been included as one group because it is their cohesion that provides the value. A number are quite insignificant as individuals. There are a number of insignificant trees within the group that could be removed without detriment to the group as a whole. There are also some trees that it would be advisable to remove because of their close proximity to neighbouring dwellings on Atlee Crescent. Sycamores growing on the southern boundary close to the gable ends of dwellings on Attlee Crescent are encroaching significantly, touching the roofs of the properties and have the potential to grow significantly larger.	20+	Medium	Medium	**B 2**

Tree number	Species	Height (M)	Stem diameter in MM at 1.5m	Branch spread (M)	Ht of first branch above GL (M)	Ht of canopy above GL (M)	Life stage	Health	General observations on the tree's condition	Estimated life in years	Amenity value	Habitat value	Category
G2	7 cherries	10.0	<440	North – 4.5 South – 6.6 East – 6.5 West – 6.6	2.0	2.0	Mature	Normal	This group of trees appear healthy but are quite insignificant in the local area. No significant defects were noted but a number of the stems are ivy covered and this could be obscuring defects.	20	Low	Low	C 1
G3	5 x sycamore 1 x ash 2 x hawthorn	< 18.0		North – 9.6 South – 9.3 East – 5.0 West – 4.0	2.0	GL	Juvenile mature to mature	Normal	There is one dead sycamore on the edge of the group. This is not a large tree and does not pose any threat to safety. The group is growing on a steep bank. The ash is growing in the tarmacked area at the bottom of the slope against a stone wall.	20	Medium	Low	B 2
G4	2 x goat willow	5.0	220 & 280	North – 4.5 South – 4.0 East – 4.4 West – 4.0	2.0	1.5	Young mature	Normal	Two small, insignificant self seeded trees.	10+	Low	Low	C 1

*$_1$ GL – Ground Level. *$_2$ Please see appendix 2 below for sub category definitions. # - Estimated measurement

2.6 Hedges and other vegetation

There is a hawthorn hedge on the western boundary of the site with Cliff Road. This is approximately 2.5 to 3.0m high. It has been unmanaged for a number of years but forms a boundary to the site.

There also are two wide hawthorn hedges growing in a north to south direction towards the eastern end of the site. These have been unmanaged for a couple of years and have grown to a height of approximately 3m.

3 Interpretation of Information and References

My interpretation and appraisal of information gathered from the survey is based on experience of tree species, visual risk hazard assessment and the guidance set out in BS5837:2012 *Trees in Relation to Design, Demolition, Construction – Recommendations*.

3.1 BS5837:2012 Tree Retention Categories

All trees have been assessed and assigned a retention category in accordance with Table 1 of the standard. A copy of Table 1 from BS5837: 2012 is included as Appendix 2.

This categorisation is intended to rank trees according to their importance in terms of quality, health, life expectancy, amenity and landscape value, together with wildlife and cultural importance. This ranking assists in determining the suitability and appropriateness of trees for retention in any development. Categories A to C are those considered for retention, 'A' being highest.

Category A and B trees tend to be considered more valuable for retention than category C trees.

Category 'U' trees are those not suitable for retention because of impaired condition.

3.2 Below Ground Constraints; Root Protection Areas (RPAs)

The root protection area is the area of land considered necessary for trees should they be retained as part of any development. This is calculated using the stem diameter measured at 1.5 metres from ground level. This protection area is shown diagrammatically as a circle centred on the base of the tree where it is expected that rooting has not been impeded in any one direction and where disturbance has not taken place. Where rooting has been impeded or disturbance taken place then the shape and size of the root protection area is modified according to an assessment of where rooting is likely to take place.

Where trees are to be retained, it is optimal to locate structures and services outside the RPA. However, where incursion becomes necessary, technical solutions may be possible to limit damage, areas lost can be compensated elsewhere, or the soil environment can be improved. In these circumstances an arboricultural method statement will be necessary to ensure that works are undertaken sympathetically and do not damage the below ground parts of the trees.

3.3 Above Ground Constraints; Crown Spreads

Ideally, working areas will be out with the crown spreads of trees to be retained.

Any permanent development proposed within the canopy spread of a tree should be assessed to determine whether the level of pruning necessary to accommodate the layout would be acceptable. However, the effects of shade and other perceived inconveniences of trees this close to property should also be considered, together with the future growth potential of the trees and the maintenance obligation this will bring.

Where temporary access by high sided vehicles and machinery for construction or erection of scaffolding is necessary within the crown spreads of trees to facilitate development an arboricultural method statement will be necessary to ensure pruning works are carried out sympathetically prior to demolition or construction works commencing.

3.4 Conception and Design

The constraints imposed by trees should assist with site design and layout, together with the other competing needs of development.

The provisions of services and the access space required for construction itself should be considered.

4 ARBORICULTURAL IMPACT ASSESSMENT

This section of the report considers the impact that the proposed layout could have on the trees that are included in Table 1 and shown on Plan 1; *Tree Constraints Plan showing the existing layout.*

This section discusses the engineering solutions that may be available to retain trees where development is proposed within their RPAs or the pruning options available where development might affect crown spreads.

Where there is no option but to remove a tree to accommodate the proposed layout this section will discuss the impact on amenity and ecology and any mitigation that could be offered such as opportunities for replacement planting.

4.1 Arboricultural Impact Assessment

Trees 1 and 2

These trees would be unaffected by the proposed layout and could be retained without detriment. There would be no significant shading of the dwellings or gardens because they are growing to the north of the proposed houses.

Trees 3 to 6 and Groups 1 to 4

These trees would need to be removed to accommodate the proposed layout.

Trees 3 to 6 and Groups 2 and 4 are included in the lowest retention category because they are small and insignificant trees and/or are in poor health.

4.2 New Planting

There are areas within some of the rear gardens to the proposed dwellings that could accommodate small trees.

5 ARBORICULTURAL METHOD STATEMENT

It is important that a method statement appropriate to the scale of development is prepared to protect retained trees, particularly where development or access is necessary within the RPAs and crown spreads of retained trees. This should address any eventuality that may involve working within the RPAs or crown spreads of existing trees. This will include temporary workings during construction as well as permanent incursion for surfacing.

5.1 Specific Tree Protection Measures

Tree protective fencing will be required to protect the trees being retained. These are Trees 1 and 2 in this report. This fencing should be erected outside of the RPAs and crown spreads of each tree.

Fencing should be in place before any other work takes place.

Plan 3 is the suggested Tree Protection Plan showing the position of the fencing should the layout be implemented, and the trees retained as discussed in Section 4.1 above.

The fencing specification in Appendix 4 is the suggested level of protection in British Standard 5837: 2012. An alternative may be agreed with the local planning authority.

5.2 Levels

Altering the ground level within the RPAs of the trees may have a detrimental impact on their health and longevity.

5.3 Ground surface materials

Altering the ground cover, such as by using impervious or semi-pervious surface materials to cover areas that were previously vegetated soil, will alter the moisture content and recharge of the soil and its oxygen and carbon dioxide content. This could have a detrimental effect on the health of tree roots growing in it.

5.4 Site access

Vehicles and plant operating or parking on unprotected soil within the RPA of a retained tree could compact or contaminate it and this could have a detrimental impact on its long-term condition and longevity.

5.5 Storing fuel, materials and equipment

Storing fuel, equipment and materials close to trees increases the risk of damage to their trunks and branches, soil compaction and/or contamination with toxic substances.

5.6 Activity under tree canopies

Activity under tree canopies, such as mixing cement, lighting bonfires or storing equipment, plant and materials, may damage branches or stems. It may also be detrimental to soil within its RPA that is utilised by its roots.

5.7 General Tree Protection Measures

To avoid damage to retained trees where no construction or access within RPAs and crown spreads is necessary the following general precautions should be followed during the construction phase.

- No dumping or storing materials or waste, whether in a skip or on the ground.
- No temporary buildings, sheds, or offices without prior discussion with an arboriculturalist and agreement of the LPA.
- No storage of materials, equipment, plant, fuel or cement.
- No bonfires within 10m of the outer edge of the crown or RPA.
- No refuelling mechanical equipment or mixing of cement.
- No washing cement mixers within or uphill of the RPA.
- No vehicles and plant unless the soil is suitably protected as recommended an arboriculturalist and agreed by the LPA.
- No raising the soil level without prior discussion with an arboriculturalist and agreement of the Local Planning Authority (LPA).
- No excavations without prior discussion with an arboriculturalist and agreement of the LPA.
- No redirection of surface water runoff into or out of the RPA.
- Follow the guidance contained within the National Joint Utilities Group Volume 4 (Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Issue 2, 2007); www.njug.org.uk) when installing underground services within the RPA of a retained tree.

6 REFERENCES, PLANNING POLICY AND GUIDANCE

6.1 National policy

Section 197 in the Town and Country Planning Act 1990 makes it the duty of Local Planning Authorities (LPAs), '*in the interests of amenity*,' to protect trees, when granting planning permission, either by the imposition of conditions or serving Tree Preservation Orders (TPOs).

The National Planning Policy Framework (NPPF) mentions trees and should be taken into account.

> ***131.*** *Trees make an important contribution to the character and quality of urban environments, and can also help mitigate and adapt to climate change. Planning policies and decisions should ensure that new streets are tree-lined, that opportunities are taken to incorporate trees elsewhere in developments (such as parks and community orchards), that appropriate measures are in place to secure the long-term maintenance of newly-planted trees, and that existing trees are retained wherever possible. Applicants and local planning authorities should work with highways officers and tree officers to ensure that the right trees are planted in the right places, and solutions are found that are compatible with highways standards and the needs of different users.*
>
> ***174.*** *Planning policies and decisions should contribute to and enhance the natural and local environment by:*
> *(b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;*
>
> ***180.*** *When determining planning applications, local planning authorities should apply the following principles:*
> *(a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
>
> *(b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;*
>
> *(c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; …*

(d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

Annex 2: Glossary

Ancient or veteran tree: A tree which, because of its age, size and condition, is of exceptional biodiversity, cultural or heritage value. All ancient trees are veteran trees. Not all veteran trees are old enough to be ancient, but are old relative to other trees of the same species. Very few trees of any species reach the ancient life-stage.

Ancient woodland: An area that has been wooded continuously since at least 1600 AD. It includes ancient semi-natural woodland and plantations on ancient woodland sites (PAWS).

Irreplaceable habitat: Habitats which would be technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed, taking into account their age, uniqueness, species diversity or rarity. They include ancient woodland, ancient and veteran trees, blanket bog, limestone pavement, sand dunes, salt marsh and lowland fen.

6.2 British Standard: Trees in relation to design, demolition and construction – Recommendations (BS 5837, 2012)

The British Standard: *Trees in relation to design, demolition and construction – Recommendations* (BS 5837, 2012) contains guidance on how to assess trees in or close to proposed development and information to include in pre-development arboricultural reportssubmitted with planning applications. Appendices 2 and 3 contain relevant extracts from BS 5837 (2012).

6.3 Barnsley Metropolitan Borough Council

Barnsley Local Plan. Adopted January 2019

17. Green Infrastructure and Green Space

7 LEGAL CONSIDERATIONS

7.1 Protected trees

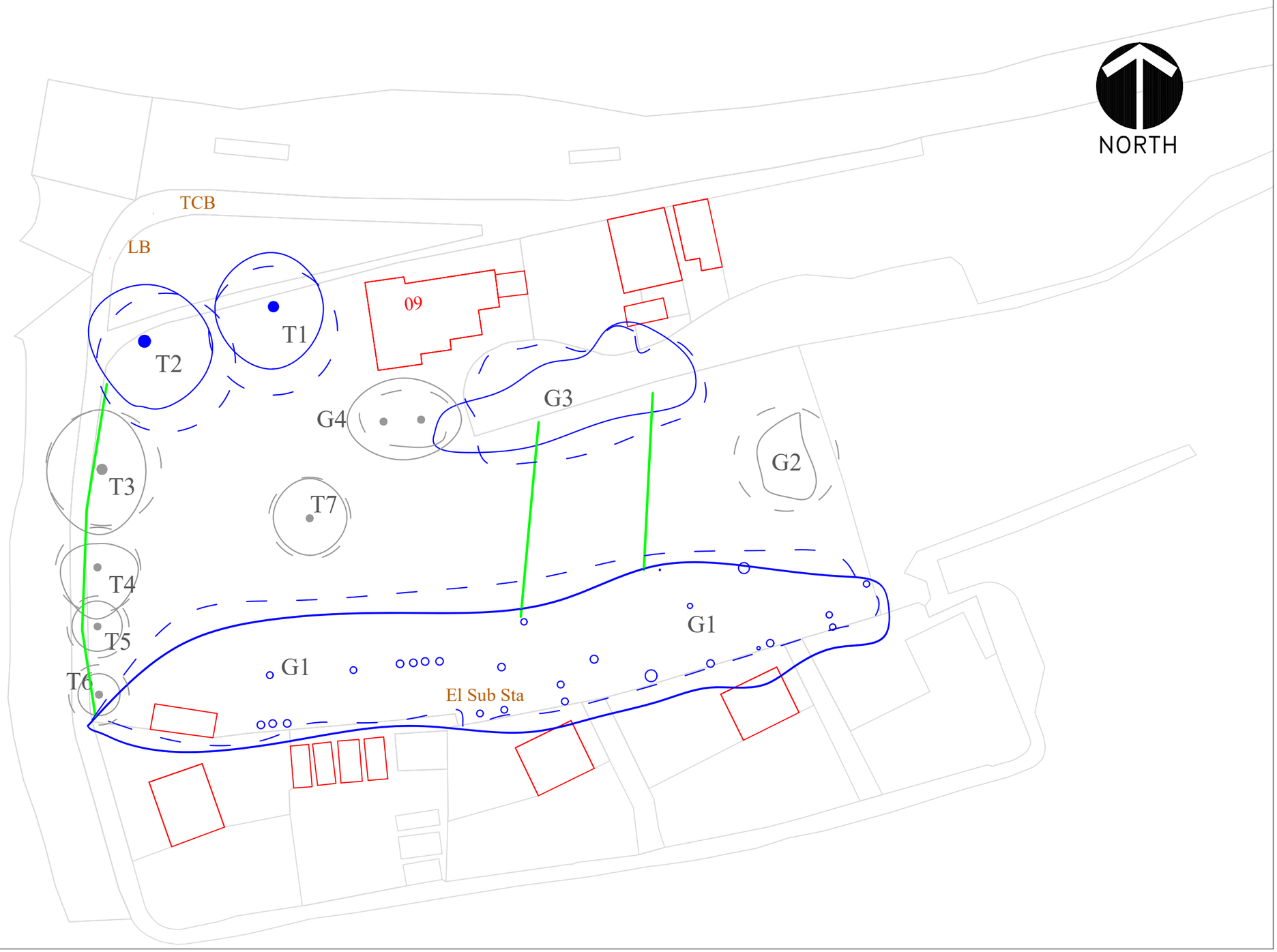
According to Barnsley Metropolitan Borough Council's online records which were again checked on 18 October2023, there is Tree Preservation Order (TPO) over the entire site. This is an area order protecting species describes as 'sycamore, holly, yew, ash, birch, Scots pine and thorn.

7.2 Wildlife conservation legislation

Breeding birds are protected, together with bats and their roosts are, whether their roosts are in use or not.

Consideration should be given to the presence of protected species prior to any proposed tree removal or maintenance. This will include breeding birds, principally between March and August, and bats at any time of year.

Tree surgeons should also be aware of their duties under legislation to protect wildlife and carry out their site assessment and work accordingly.



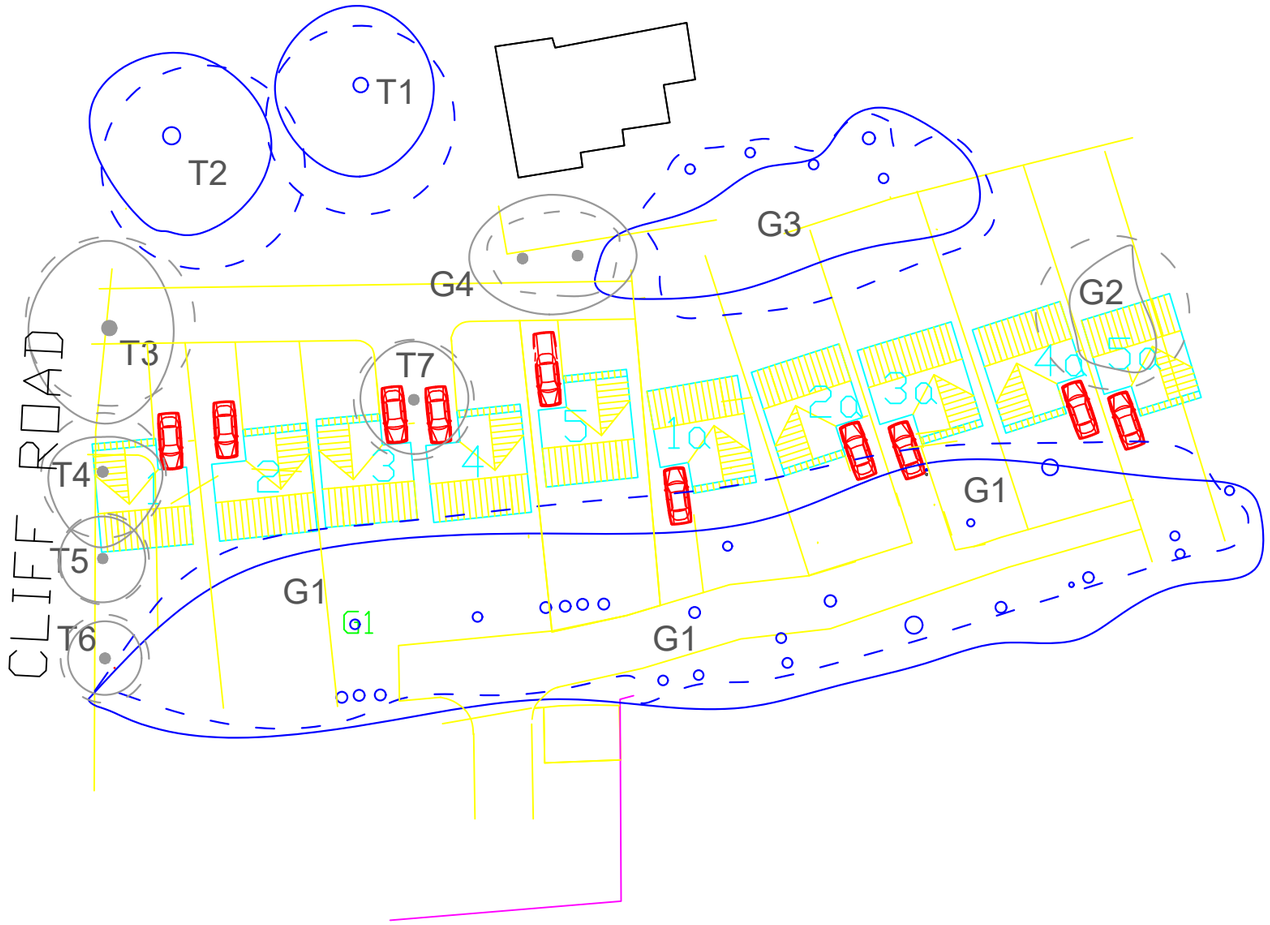
Plan 1 Tree constraints plan showing the existing layout

Scale 1:500 @A3

Category B crown
Category B Stem
Category B RPA

Category B crown
Category B Stem
Category B RPA

NORTH

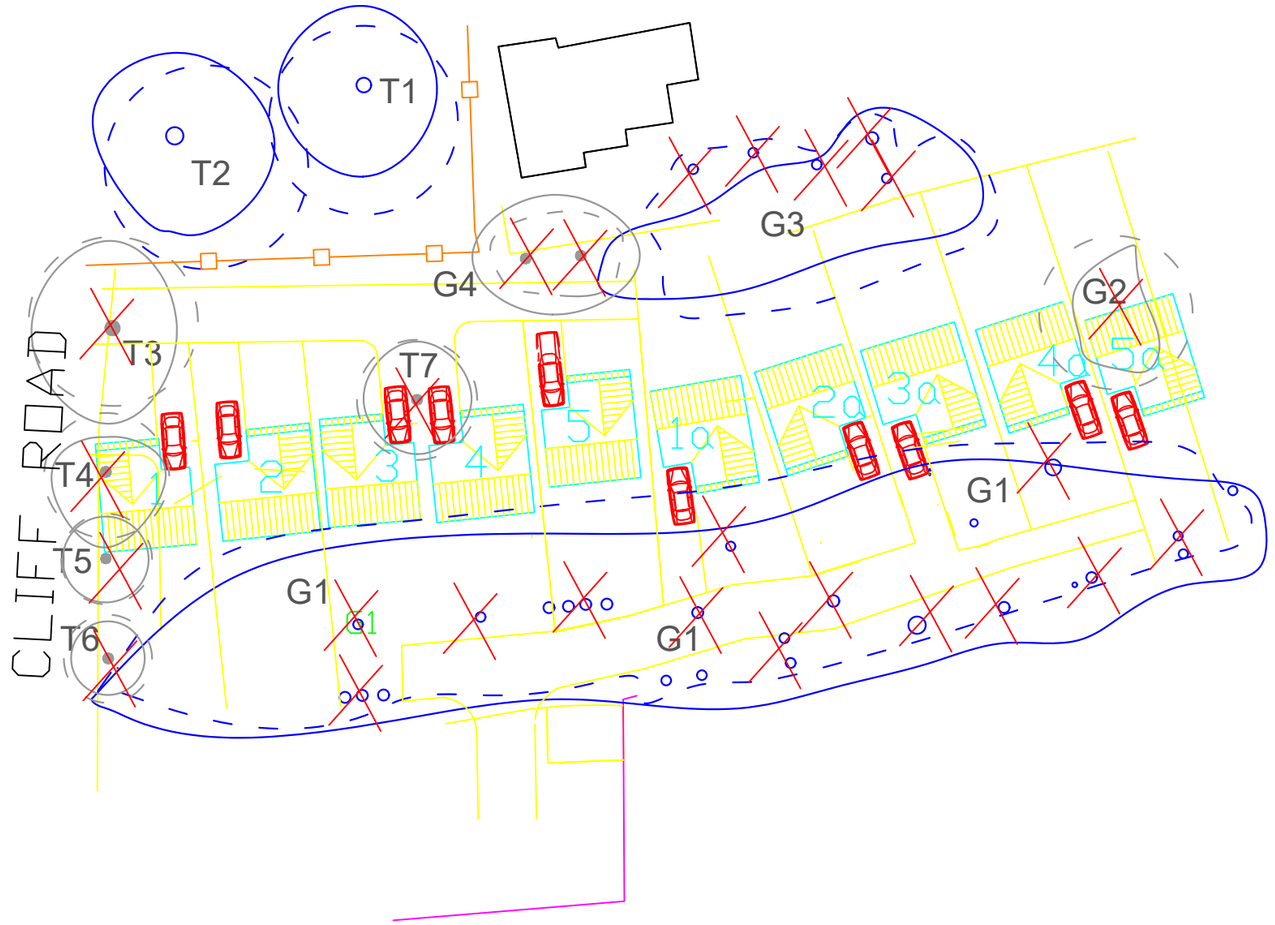


Plan 2 Tree constraints plan showing the proposed layout

Scale 1:500@ A3

Category B crown
Category B Stem
Category B RPA

Category B crown
Category B Stem
Category B RPA



Plan 3 Tree protection plan showing the proposed layout

Scale 1:500@ A3

Category B crown
Category B Stem
Category B RPA

Category B crown
Category B Stem
Category B RPA

Tree Protective Fencing

Tree to remove

Appendix 1

The Experience and Qualifications of Ian Kennedy

1. Qualifications

Ian graduated from the Scottish Agricultural College in August 1995 with a Higher National Diploma in Horticulture (HND) with Distinction.

In 1998 Ian graduated from the University of Aberdeen with a BSc (Hons) Upper second class in Forestry with Arboriculture and Amenity Forestry.

He passed the LANTRA Professional Tree Inspection examination in (2006).

In 2009 his application to become a professional member of the Arboricultural Association was assessed to fulfil all the necessary requirements and he became a professional member of the Association that year.

In 2011 he passed the final examination of the Institute of Chartered Foresters and become a member of that institute in January 2012.

2. Practical experience

Presently Ian is working in private practice as an independent arboricultural and woodland management consultant undertaking tree conditions surveys, pre-development tree surveys to the BS5837:2012 standard, mortgage reports and woodland management planning works. Clients range from home owners and farmers to architects, building companies, local authorities, schools and larger development companies.

Prior to private practice Ian held a number of positions in local government. Firstly, he was the arboriculturalist within a planning office in Essex. Ian gained considerable experience regarding trees in relation to development, in particular BS 5837.

Development work formed the core of his duties and applications ranged from small back garden developments to major schemes such as the redevelopment of Ministry of Defence land for private residential development. Ian also undertook all functions associated with Tree Preservation Orders (TPOs), including the making of new TPOs, assessing suitability of applications to work on protected trees and trees in conservation areas.

Ian went on to manage a 500 hectare woodland estate for a local authority in South Yorkshire that included a mix of urban and rural woodlands. This included preparation and implementation of detailed management plans for multiple use woodlands. He undertook all aspects of silvicultural management from marking to contract tendering and monitoring. He also managed the access, conservation, landscape and archaeological requirements of the estate.

Ian was directly involved in the estate achieving Forest Stewardship Council certification in 2003 and personally ensured continued certification.

Ian has worked extensively with Forestry Commission to obtain the necessary licences for management works and ensured the estate benefited fully from the full range of grants available.

Latterly at the same authority Ian went on to manage the trees and woodlands unit, having overall responsibility for management of the authority's tree and woodland stock and associated staff, together with delivery of other tree related services such as those associated with the Town and Country Planning Acts.

3. Continuing professional development

Ian regularly attends meetings, seminars and training events hosted by The Arboricultural Association. Institute of Chartered Foresters, Royal Forestry Society and Forestry Commission and benefits from the respective journals, briefings and newsletters available to members of the first three of the organisations listed.

4. Relevant experience

Ian Kennedy has spent 23 years working with trees, including as the arboricultural advisor to planning officers for a Local Planning Authority and manager of a trees and woodlands unit for another local authority with overall responsibility for trees, including in relation to the Town and Country Planning Acts.

Appendix 2

Tree Retention Categories

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

Appendix 3

Explanatory notes for some of the terms used in this report

- **Stem Diameter:** The diameter of the trunk at 1.5m above ground level and recorded in millimetres measured with a diameter tape.
- **Compass Bearing:** N = north; S = south; E = east; W = west;
- **Life Stage:** Assessed as either:
    - Semi-mature = a size which could be easily transplanted;
    - Juvenile mature = prior to seed bearing age and could be transplanted with care;
    - Young Mature = early maturity, not fully grown but of seed bearing age and may have achieved mature height;
    - Mature = fully grown, annual growth is much reduced;
    - Old Mature = old for the species, possibly starting to decline;
    - Veteran = Beyond maturity for the species. This can be characterised by larger than average stem diameters, scaffold branches or crown spreads. Often still growing with full crowns.
    - Ancient = Well beyond normal mature age. It will have special characteristics associated with its age, including biological, cultural. Growth rates will significantly reduced and the tree may be declining is size.
- **Estimated size:** #
- **Health:**
    - Normal Vitality = normal growth and twig extension;
    - Moderate Vitality = reduced twig extension but other than that few signs of ill-health;
    - Early Decline = reduced twig extension and some dead twigs in the outer canopy;
    - Mid-decline = small internodes, the canopy may be thinning and contain dead twigs and/or branches in the outer canopy, older branch wounds that haven't occluded may be decaying and forming cavities;
    - Severe Decline = sparse crown, numerous dead twigs and branches in the outer canopy, older branch wounds likely to be decaying and forming cavities;
    - Dead.
- **Structural Condition**
    - Acute stem union = a weak union between two or more stems at the main forking point caused by the formation of reaction wood. Mechanical pressure

at the forking point increases as secondary thickening occurs increasing the risk of failure at that point.

- Acute branch union = the same principle as acute stem unions but between a stem and a branch or two branches rather than 2 main stems.

- **Estimated life**
  - The life expectance brackets of <10 years, 10+ years, 20+ years and 40+ years accord with the guidance in BS5837:2012 and should be considered as the useful life expectancy in the location the trees are growing in. For example, a tree with significant defects growing in a quiet area could be retained for longer than a tree growing next to a busy highway or a residential building.
- **Amenity**
  - High = Growing in a place that is very publicly visible such as a next to a busy road or places where people gather. The tree is also likely to be large or very large.
  - Medium = A smaller tree growing is a very publicly visible place or a large tree growing in a place with reduced public access.
  - Low = A small to medium sized tree growing in a quiet location where it is barely or not visible to anyone other than the landowner.

Appendix 4

British Standard: BS 5837 Trees In Relation To Design, Demolition and Construction – Recommendations (2012): Tree Protection Barrier

on retained hard surfacing or it is otherwise unfeasible to use ground pins, e.g. due to the presence of underground services, the stabilizer struts should be mounted on a block tray (Figure 3b).

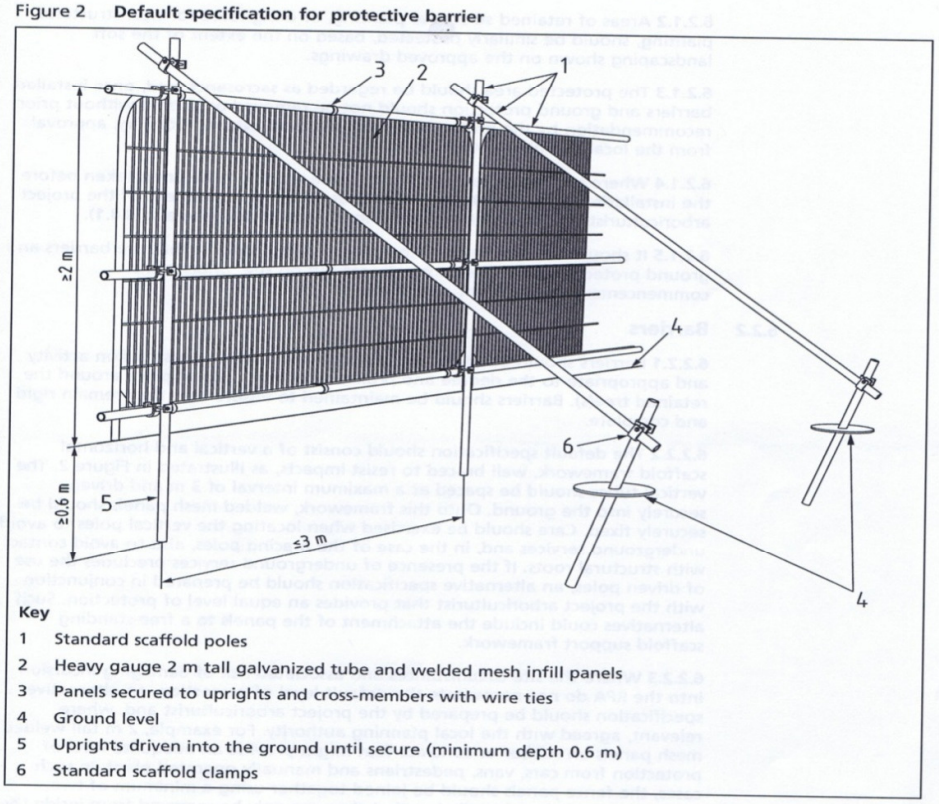
NOTE 1 Examples of configurations for steel mesh perimeter fencing systems are given in BS 1722-18.

NOTE 2 It might be feasible on some sites to use temporary site office buildings as components of the tree protection barriers, provided these can be installed and removed without damaging the retained trees or their rooting environment.

6.2.2.4 All-weather notices should be attached to the barrier with words such as:

"CONSTRUCTION EXCLUSION ZONE – NO ACCESS".

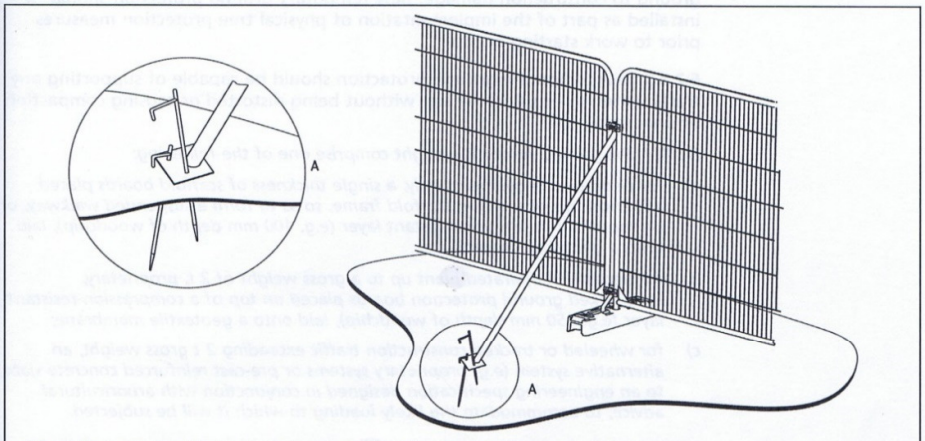
Figure 2 **Default specification for protective barrier**



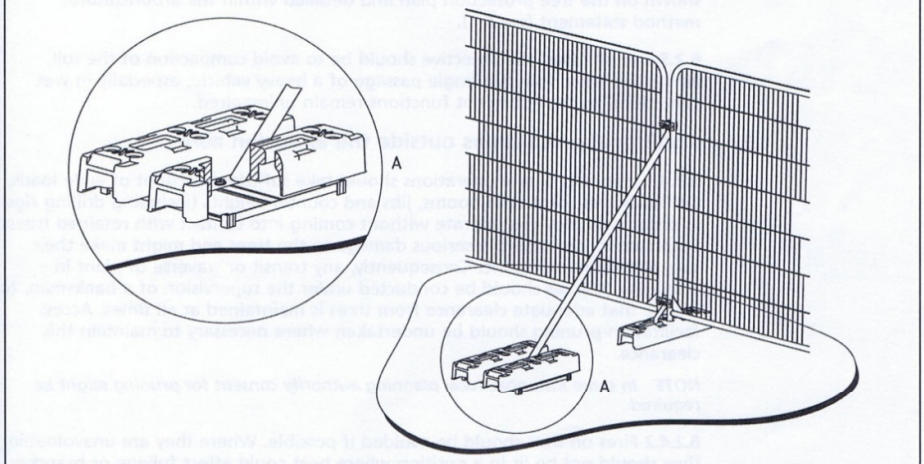
Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

Figure 3 **Examples of above-ground stabilizing systems**



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

6.2.3 Ground protection during demolition and construction

6.2.3.1 Where construction working space or temporary construction access is justified within the RPA, this should be facilitated by a set-back in the alignment of the tree protection barrier. In such areas, suitable existing hard surfacing that is not proposed for re-use as part of the finished design should be retained to act as temporary ground protection during construction, rather than being removed during demolition. The suitability of such surfacing for this purpose should be evaluated by the project arboriculturist and an engineer as appropriate.

Appendix 5

Example of a sign to attach to tree protective fencing

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