

OLD STATION YARD MOOR ROW

Pre-development Tree Constraints Report

**Prepared for
Mr Nigel Kay**

14th October 2022

**By
Eddie Cruickshank MICFor. F.Arbor.A. FDSC Arb.**

Treescapesc Consultancy Ltd.

All rights in this report are reserved. You may not reproduce or transmit, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, or store in any retrieval system of any nature, any part of this report without our written permission. The content and format are for the exclusive use of the addressee in dealing with this site. You may not sell, lend, hire out, or divulge any of the content to a third party not directly involved with this site, without our written consent.

© 2022 Treescapes Consultancy Ltd.

SUMMARY

Treescaples Consultancy Ltd. have been instructed by Mr Nigel Kay, to inspect significant trees growing in and around the old station yard at Moor Row that are close to the site of proposed dwellings and associated features. We have been asked to provide a pre-development arboricultural constraints report to guide the preparation of plans for the proposals. We have also been asked, if necessary, to suggest ways the proposals could be implemented to limit potential disturbance to an acceptable level.

I visited the site on 01 September 2022 and inspected the trees and groups of trees that are close to the proposed development. Currently, the site is a disused yard with parts of fields to the north and young woodlands to the south.

The species, size and condition of the trees, and my management recommendations, are listed in the schedule included as Table 1. Plan 1 shows the existing site layout, the locations of the trees, their canopies and Root Protection Areas (RPAs) calculated using the guidance contained in the British Standard: *Trees in relation to design, demolition and construction – Recommendations* (BS 5837, 2012).

Tree related constraints are discussed in Section 4. I assessed the trees and groups of trees outside the central part of the site, i.e. out with the perimeter fence of the old station yard, to be mostly in Retention Category B. The trees and groups of trees within the perimeter fence of the old station yard I assessed to be in Retention Category C.

Trees assessed to be in Retention Category B are trees of moderate quality with life expectancies of at least 20 years that should be retained where possible. Also trees present in numbers such that they might attract a higher collective rating than they might as individuals. Category B trees should be retained wherever possible.

Trees assessed to be in Retention Category C are trees of low quality or trees with a stem diameter below 150mm.

Section 5 contains my broad assessment of the arboricultural impacts of development. These can be completed once plans of the proposals are available as autocad files.

Section 6 contains my general recommendations to help guide the preparation of plans of the proposals while taking into account important trees. However, once the proposals have been finalised a detailed Arboricultural Impact Assessment (AIA), specific tree protection recommendations and tree protection plan should be prepared and submitted with the planning application.

CONTENTS

1	INTRODUCTION	4
1.1	Instruction	4
1.2	Qualifications and experience	4
1.3	Documents and provided information	4
1.4	Report limitations	4
2	SITE VISIT AND OBSERVATIONS	6
2.1	Site visit	6
2.2	Site description	6
2.3	Identification and location of the trees	7
2.4	Tree observations	7
2.5	Tree observations – discussion	7
3	REFERENCES, PLANNING POLICY AND GUIDANCE.....	8
3.1	National policy	8
3.2	British Standard: Trees in relation to design, demolition and construction – Recommendations (BS 5837, 2012)	8
3.3	Copeland Local Plan 2013-28:	9
3.4	Policy DM26 – Landscaping (extracts relevant to trees)	9
3.5	Policy DM28 – Protection of Trees (relevant extracts)	9
4	TREE CONSTRAINTS	10
4.1	Tree Retention Category – BS 5837 (2012)	10
4.2	Tree constraints – above and below ground	10
5	ARBORICULTURAL IMPACT ASSESSMENT	11
5.1	Trees growing close to the proposed development.....	11
5.2	Levels	13
5.3	Ground surface materials	13
5.4	Site access	13
5.5	Storing fuel, materials and equipment	13
5.6	Activity under tree canopies	13
6	RECOMMENDATIONS	14
6.1	General precautions	14
6.2	Tree work required to implement the proposals	15
6.3	Implementing the tree work	15
6.4	Design and construction considerations	15
6.5	Temporary tree protection barriers	15
6.6	Temporary ground protection	16
6.7	Working within tree RPAs	17
6.8	‘Over-dig’	17
6.9	Shallow excavations within the RPAs of retained trees	18
7	LEGAL CONSIDERATIONS	19
7.1	Protected trees	19
7.2	Forestry legislation.....	19
7.3	Wildlife conservation legislation.....	19
8	CONCLUSIONS	21
9	REFERENCES	22

TABLES

Table 1 Trees with RPAs and canopies that encroach into the footprint of proposed structures or within 2m of them.....	12
--	----

PLANS

Plan 1	Tree constraints plan of the existing site layout.....	23
--------	--	----

APPENDICES

Appendix 1	The Experience and Qualifications of Eddie Cruickshank.....	24
Appendix 2	Extracts from the British Standard: Trees In Relation To Design, Demolition and Construction – Recommendations (BS 5837, 2012)	26
Appendix 3	Table 1 from the British Standard: <i>Trees In Relation To Design, Demolition and Construction – Recommendations</i> (BS 5837, 2012).....	30
Appendix 4	Explanatory notes for some of the terms used in Table 1	31
Appendix 5	Tree Data Schedule	34

1 INTRODUCTION

1.1 Instruction

Treescaples Consultancy Ltd. have been instructed by Mr Nigel Kay to inspect significant trees that may be affected by the construction of proposed dwellings and associated features in and around the old station yard, Moor Row. We have been asked to prepare a report detailing tree related constraints to developing the site within the boundaries shown in red on the provided documents and provide general guidance.

We haven't been provided with final plans of the proposed site layout, so this report is a Phase 1 Tree Constraints Report. This report contains information about the quality of the trees, their desirability for retention and how much room should be protected around them if they are to be retained.

The trees have been inspected, and this report prepared, in accordance with the guidance contained in the British Standard: *Trees in relation to design, demolition and construction – Recommendations* (BS 5837, 2012).

1.2 Qualifications and experience

I have based this report on my site observations and information that was provided, and I have come to conclusions in the light of my experience. I have experience and qualifications in arboriculture and list the details in Appendix 1.

1.3 Documents and provided information

Glen Beattie of Alpha Design, Cockermouth provided a topographic plan of the existing site layout as a .dwg file, and a site location as a .dwg file. This includes boundaries of the wider site over which Mr Kay has an interest.

1.4 Report limitations

This report is only concerned with assessing the condition of the trees growing close to proposed development and whether or not they may be affected by its implementation. It includes an assessment based on the site visit and the provided plans. No decay detection equipment was used to obtain data presented in this report.

This report takes no account of whether trees could affect the soil in the area in such a way as to cause the proposed development, or other structures, to suffer tree related subsidence or heave damage.

This report contains work recommendations that should be carried out to manage identified risks posed to and by the trees responsibly and reduce them to an acceptable level. Even after recommended work has been carried out, trees could still fail but they are unlikely to cause significant harm unless the weather conditions are extreme and/or there are major hidden defects.

This report does not take into account extreme weather events not normally expected in this locality. Such events could include, but are not restricted to, severe windstorms, floods or drought. This report also does not take into account potential outbreaks of tree pests or diseases.

Operations carried out in the vicinity of a tree, either in the past or future, could affect its health and/or stability. Such operations could include, but are not restricted to, trenches excavated for the installation or repair of underground utilities.

2 SITE VISIT AND OBSERVATIONS

2.1 Site visit

I visited the site and inspected the trees on 01 September 2022. All my observations were from ground level without detailed investigations and I estimated all dimensions unless otherwise indicated. While I was on site the weather was still and dry with good visibility.

2.2 Site description

The site the proposed development lies north of the route of the old railway line, which is now a cycle way (part of the National Cycle Route 71) and a pedestrian route.

The site entrance is at Ordnance Survey grid reference NY 0045 1459 (<https://magic.defra.gov.uk/MagicMap.aspx> accessed 13/10/22) off the continuation of Dalzell Street, which goes from Moor Row to Keekle.

- The northern part of the wider site is agricultural land being part of those grass pasture fields. The central part of the site, the old station yard, is within a perimeter fence. It is “brownfield” having previously being railway sidings etc. that were flattened following closure of the railway (https://en.wikipedia.org/wiki/Moor_Row_railway_station accessed 13/10/22). Here there are extensive areas of made-up ground and concrete hard standings. There is also various discarded railway and other debris in places among the vegetation.
- To the south of the station yard perimeter fence, up to the security fence that is parallel to the cycleway, is established woodland.
- The SW corner of the wider site, from the road bridge and back from the old station platform is established woodland.
- The southernmost part of the wider site is the narrow strip outside the security fence north of the cycleway along to where it over the River Keekle. The established woodland in this strip is contiguous with that of the area south of the station yard perimeter fence up to the security fence.

The trees considered in this report are those growing in these areas.

2.3 Identification and location of the trees

The approximate locations of the significant trees are shown on Plan 1. This plan is based on a topographic plan prepared by Spatial Data Ltd dated August 2022 for Glen Beattie. I did not check the accuracy of this plan or the location of the trees marked on it.

The plan(s) included in this report are for illustrative purposes only and should not be used for directly scaling measurements: all measurements should be checked on site. All relevant information is contained within this report and plans provided by Glen Beattie.

2.4 Tree observations

I visually inspected the significant trees and information on their species, dimensions and condition, as well as my initial management recommendations, is included in Appendix 5.

2.5 Tree observations – discussion

The trees growing within the perimeter fence of the old station yard appear to have become established relatively recently as the yard became disused, and by natural regeneration.

They are mainly of mixed broad leaved tree species with wide seed dispersal strategies, such as birch and willow. They are currently small trees growing close together in groups. I surmise that the groups are wherever the windblown seeds were able to encounter some sort of growing medium among the various hard standings.

The trees to the south of the old station yard, between the perimeter and the security fence parallel to the cycleway are young mature trees forming more cohesive woodland conditions. Their canopy is contiguous with the canopies of the tree groups growing immediately outside the security fence and immediately beside the cycleway.

I consider the area of soil these trees can all exploit for water and nutrients to be sufficient within the area of the group so have calculated the RPA around just the edges based on the diameter of the larger trees in the group.

3 REFERENCES, PLANNING POLICY AND GUIDANCE

3.1 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.

170. 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;

175. When determining planning applications, local planning authorities should apply the following principles:

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;

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.

3.2 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 reports submitted with planning applications.

Appendices 2 and 3 contain relevant extracts from BS 5837 (2012).

3.3 Copeland Local Plan 2013-28:

This replaces the 2001-2016 Local Plan and policies in that Plan relevant to trees (ENV10 and ENV12) have been replaced by new policies, these being DM26 and DM28. Former Policy ENV 11 expired in June 2009.

3.4 Policy DM26 – Landscaping (extracts relevant to trees)

All development proposals will be assessed in terms of their potential impact on the landscape.

Proposals will be assessed according to whether the proposals relate well in terms of visual impact, scale, character, amenity value and local distinctiveness and the cumulative impact of developments will be taken into account as part of this assessment.

Development proposals, where necessary, will be required to include landscaping schemes that retain existing landscape features, reinforce local landscape character and mitigate against any adverse visual impact

3.5 Policy DM28 – Protection of Trees (relevant extracts)

A. Development proposals which are likely to affect any trees within the Borough will be required to include an arboricultural assessment as to whether any of those trees are worthy of retention and protection by means of a Tree Preservation Order and submit proposals for the replacement or relocation of any trees removed, with net provision at a minimum ratio of 2:1, with preference for the replacement of trees on site and with native species

4 TREE CONSTRAINTS

4.1 Tree Retention Category – BS 5837 (2012)

I assessed the retention category of each tree using the guidance contained in Table 1 of BS 5837 (2012). A copy of Table 1 of BS 5837 (2012) is included as Appendix 3. The retention category of each tree is listed in Table 1 and shown on Plan 1 in this report by the colour used to depict it:

Green: Category A – a high quality tree that should be retained where possible;

Blue: Category B – a moderate quality tree that could be retained;

Grey: Category C – a low quality tree that could be retained for a time but shouldn't be considered to be a constraint to development; and

Red: Category U – a tree in such a poor condition that it cannot realistically be retained as a living tree in the context of the current land use for longer than 10 years unless it is in a little frequented area and it is desired to retain it for wildlife.

I assessed the trees and groups of trees outside the central part of the site, i.e. out with the perimeter fence of the old station yard, to be mostly in Retention Category B. The trees and groups of trees within the perimeter fence of the old station yard I assessed to be in Retention Category C.

4.2 Tree constraints – above and below ground

Plan 1 shows the existing site layout, the locations of the trees, their crowns, and Root Protection Areas (RPAs) calculated using the guidance contained in BS 5837 (2012). If retained, tree canopies are vertical constraints to development. Pruning trees can sometimes provide adequate clearance to implement development proposals but should be carried out in accordance with the guidance contained in the British Standard: *Tree work – Recommendations* (BS 3998, 2010).

The RPA of a tree is described to be the minimum area of soil required by its roots to maintain healthy growth and should be considered a constraint to development if it is to be retained.

5 ARBORICULTURAL IMPACT ASSESSMENT

**TO BE COMPLETED ONCE PLANS OF THE PROPOSALS ARE
AVAILABLE AS AUTOCAD FILES**

5.1 Trees growing close to the proposed development

If any of the trees listed in Table 1 are retained, they could be harmed if the proposals are implemented without regard for their requirements.

Table 1

Trees with RPAs and canopies that encroach into the footprint of proposed structures or within 2m of them.

Tree ID	Species	Age Class	Retention Category	Height (m)	Growing in Footprint	Canopy	RPA	Canopy <2m	RPA <2m	Structure
						X				

5.2 Levels

Altering the ground level within the RPA of a retained tree may have a detrimental impact on its 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 contents. 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 be detrimental to the long-term condition and longevity of the tree.

Vehicle movements under the crown of a tree could damage its trunk and/or branches. This could potentially create a hazard and reduce its life expectancy.

5.5 Storing fuel, materials and equipment

Storing fuel, equipment and materials close to a tree increases the risk of damage to its trunk and branches, soil compaction and/or contamination with toxic substances.

5.6 Activity under tree canopies

Activity under a tree canopy, such as mixing cement, lighting bonfires or storing equipment, plant and materials, may damage its branches and/or stem(s). It may also be detrimental to soil within its RPA that is utilised by its roots.

6 RECOMMENDATIONS

6.1 General precautions

The following general precautions should ensure the health and longevity of retained trees. They should be enforced within their RPAs and under their canopies during the construction phase and in locations where new trees will be established unless the soil will be suitably remediated.

- No storing materials, equipment, plant or fuel.
- No refuelling mechanical equipment.
- No storing or mixing cement.
- No washing cement mixers within or uphill of the RPA.
- No bonfires within 10m of the outer edge of the crown or RPA.
- No raising the soil level without prior discussion with Treescapes Consultancy Ltd. and agreement of the Local Planning Authority (LPA).
- No excavations without prior discussion with Treescapes Consultancy Ltd. and agreement of the LPA.
- No redirection of surface water runoff, either into or out of the RPA.
- No temporary buildings, sheds, or offices without prior discussion with Treescapes Consultancy Ltd. and agreement of the LPA.
- No dumping or storing materials or waste, whether in a skip or on the ground.
- No vehicles and plant unless the soil is suitably protected as recommended by Treescapes Consultancy Ltd. and agreed by the LPA.
- Only operate or park vehicles and plant in areas where new trees will be established after the soil is suitably protected, as recommended by Treescapes Consultancy Ltd. and agreed by the LPA. Alternatively, soil compaction should be relieved prior to the establishment of the trees once the construction phase has been completed.
- 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); <http://streetworks.org.uk/> (accessed 18/06/20)) when installing or maintaining underground services within the RPA of a retained tree.

If necessary Treescapes Consultancy Ltd. can monitor the implementation and adequacy of tree protection measures at critical stages of the project to ensure they are in accordance with BS 5837 (2012) and conditions listed on the planning consent notice.

6.2 Tree work required to implement the proposals

(To be completed once plans of the proposals are available as Autocad files).

6.3 Implementing the tree work

Required tree work should be carried out by a suitably qualified, competent, experienced and insured contractor. The contractor should carry out all tree work in accordance with the guidance contained in the British Standard: *Tree Work – Recommendations* (BS 3998, 2010).

6.4 Design and construction considerations

Construction work can adversely affect trees in many ways. Consequently, I suggest that it would be beneficial for all members of the project team to be aware of tree protection recommendations contained within this report and tree protection conditions listed on the planning consent notice, and make provision for them throughout the project. To avoid unnecessary damage to retained trees, I recommend that an arboricultural consultant should be involved throughout the project at all stages, from pre-planning to hand-over.

6.5 Temporary tree protection barriers

Temporary tree protection barriers should be erected before the commencement of any demolition or construction activity.

These barriers must be robust enough to withstand impacts from machinery and plant that will operate close to them. In areas where lighter plant and machinery (typically <2t) are operating, I recommend using one or a combination of the following designs.

- 2 m tall welded mesh panels on rubber or concrete feet secured with pins driven 0.5m into the ground. The panels should be joined together using at least two anti-tamper couplers, installed so that they can only be removed from the side of the barrier on which the trees are growing. Support the panels on the inner side with stabilizer struts, secured with ground pins driven 0.5m into the ground. There should be one stabiliser strut between each pair of panels and one at each end of a line of panels. Where a barrier is erected on hard surfacing or it is otherwise unfeasible to use ground pins, mount the stabilizer struts onto a block tray.
- Wooden posts (Ø75-100mm x 1.8m) driven securely into the ground (300-500mm) every 2m, with top and bottom wooden rails (2m x 25mm x 100mm) attached securely to the posts to create a rigid structure. Chestnut paling fencing (1.25-1.5m high) should be attached securely to the rails every 300-400mm.

- Metal road-pins (1.2m) securely driven into the ground (200-300mm) at 2m centres, supporting orange mesh barrier fencing (1m high) securely attached to the pins using strong cable ties (4.8mm x 300mm).

The protective barriers should not be moved without the written consent of the LPA or until construction activity has finished.

I recommend that suitable members of the project team, including the main contractor and arboricultural consultant, should prepare a definitive Tree Protection Plan showing the locations of temporary tree protection measures to be installed during the construction phase and prepare a method statement for their installation and removal.

6.6 Temporary ground protection

The ground within the RPAs of retained trees should be protected throughout the project from compaction and contamination. If construction activity is to take place within the RPAs of retained trees the following suggestions may be appropriate.

- For heavy construction vehicles (>2t), use reinforced concrete slabs, the three dimensional cellular confinement system described below, or an alternative engineered solution capable of supporting the likely loading without deforming and compacting the underlying soil.
- For lighter machinery (<2t), use inter-linked ground protection boards placed on a 150 mm deep layer of woodchip laid on a geotextile membrane.
- For pedestrian traffic, use a single thickness of scaffold boards placed either on a driven scaffold frame, so as to form a suspended walkway, or placed on top of a 100 mm deep layer of woodchip laid on a geotextile membrane.

Arborcraft may also be a suitable solution (<https://infragreen-solutions.com/arborcraft/> accessed 28/10/22).

BS 5837 (2012) recommends using a three-dimensional cellular confinement system, such as:

- Protectaweb - <https://www.wrekinproducts.com/protectaweb-tree-root-protection/> (accessed 28/10/22)
- Cellweb – <http://www.geosyn.co.uk/product/cellweb-tree-root-protection> (accessed 28/10/22);
- Geocell – <http://www.terram.com/products/geocells/tree-root-protection-geocell.html> (accessed 28/10/22); or
- InfraWeb TRP - <http://infragreen-solutions.com/tree-root-protection-2/> (accessed 28/10/22).

The cells of these products should be filled with an inert, 'no-fines', angular stone gravel and covered with a porous wearing course.

I recommend that suitable members of the project team, including the main contractor and arboricultural consultant, should prepare a definitive Tree Protection Plan showing the locations of temporary tree protection measures to be installed during the construction phase and prepare a method statement for their installation and removal.

6.7 Working within tree RPAs

I recommend that suitable members of the project team, including the main contractor and arboricultural consultant, should prepare a definitive method statement for working within tree RPAs. This will include the design of all features to be constructed within tree RPAs and how the soil and above ground parts of the tree will be protected.

6.8 'Over-dig'

I recommend that it would demonstrate a level of commitment to carry out the construction to a high standard if measures could be implemented to maintain 'over-dig' to the minimum. Suitable measures may include using shuttering to prevent soil falling into the excavated trench.

I recommend that suitable members of the project team, including the main contractor and arboricultural consultant, should design a method to minimise 'over-dig' within the RPA of retained trees and a method statement for its implementation.

6.9 Shallow excavations within the RPAs of retained trees

In areas where shallow excavations are required within the RPAs of retained trees – less than 300mm deep – they should be carried out with hand tools and a pneumatic excavation lance such as an:

- 'Air-spade' – <https://www.airspade.com/> (accessed 28/10/22); or
- 'Soil pick' – <https://www.mbw-europe.com/utility/excavate/soil-pick/mbw-soil-pick> (accessed 28/10/22).

I recommend that suitable members of the project team, including the main contractor and arboricultural consultant, should assess where shallow excavations are required close to trees and prepare a method statement for carrying them out.

7 LEGAL CONSIDERATIONS

7.1 Protected trees

I have not made enquiries with the Local Planning Authority (LPA) to find out whether any of the trees discussed in this report are legally protected.

If these trees are protected by a Tree Preservation Order (TPO), located in a conservation area or protected by planning conditions, it will be necessary to obtain permission from the LPA before any work, other than certain exempted operations, can be carried out to them. The work specified in this report is necessary for their reasonable management and should be acceptable to the LPA but tree owners should appreciate that they may take an alternative point of view and have the option to refuse to grant consent.

I understand that full planning consent allows the minimum amount of work to protected trees necessary to implement the consented development without requiring permission under tree protection legislation – this should be checked with a solicitor or planning consultant.

7.2 Forestry legislation

A felling licence is required from the Forestry Commission to fell more than a small amount of timber in any calendar quarter unless the trees fall into one of the exempted categories. Information about felling licences is available on the Forestry Commission website –

<https://www.gov.uk/government/organisations/forestry-commission> (viewed 28/10/22). A felling licence may be required if more than 2m³ of timber is to be felled and sold, or more than 5m³ for personal use.

I understand that full planning consent allows the minimum amount of tree work necessary to implement the consented development without requiring a felling licence – this should be checked with a solicitor or planning consultant.

7.3 Wildlife conservation legislation

The nests of most birds are legally protected while they are in use. Bats are also legally protected and their roosts are protected whether or not they are in use. Contractors should be aware of their duties under legislation enacted to protect wildlife and carry out their site assessment and work accordingly. If bats are suspected Natural England should be consulted. The Forestry Commission and others produced a leaflet called: *Woodland Management for Bats* (2005) which contains some useful advice and is freely available to download from:

<https://cdn.forestresearch.gov.uk/2005/01/fcfc212.pdf> (accessed 28/10/22).

On page 14 this publications states:

‘The Wildlife and Countryside Act 1981 makes it an offence to disturb, damage or destroy bats or their roosts (even if bats are not present in the roost at the time of any incident). The Act applies in both England and Wales, and requires consultations with the appropriate Statutory Nature Conservation Organisation [Natural England] before carrying out activities which might harm or disturb bats or their roosts (even if unoccupied).’

‘The Act is amended by the Countryside and Rights of Way Act 2000 in England and Wales. This adds ‘reckless’ to the offence of damaging or destroying a place a bat uses for shelter or rest, or disturbing a bat while using a roost. Under EU Regulations damaging or destroying a breeding site or resting place is an absolute offence, regardless of whether the act of doing so may be considered reckless or deliberate.’

8 CONCLUSIONS

Based on the information discussed in this report and provided all the technical recommendations it contains are followed, I consider the proposed development can be implemented in accordance with the guidance contained in BS 5837 (2012) with minimal impact on important trees to be retained.

Eddie Cruickshank MICFor., F.Arbor.A., FDSC.Arb

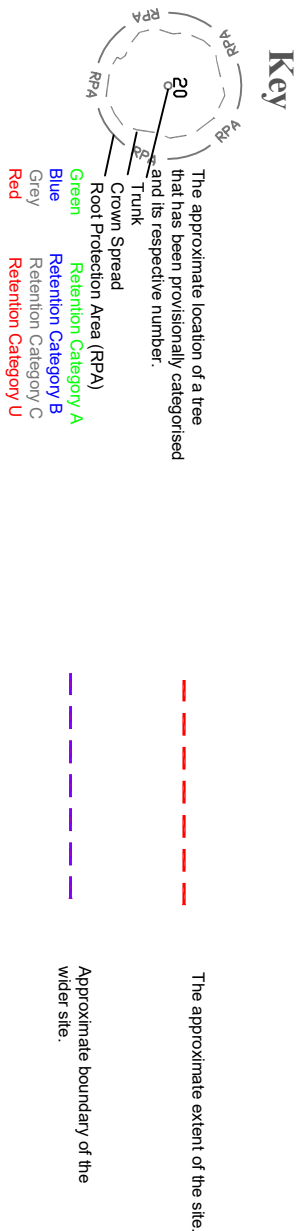
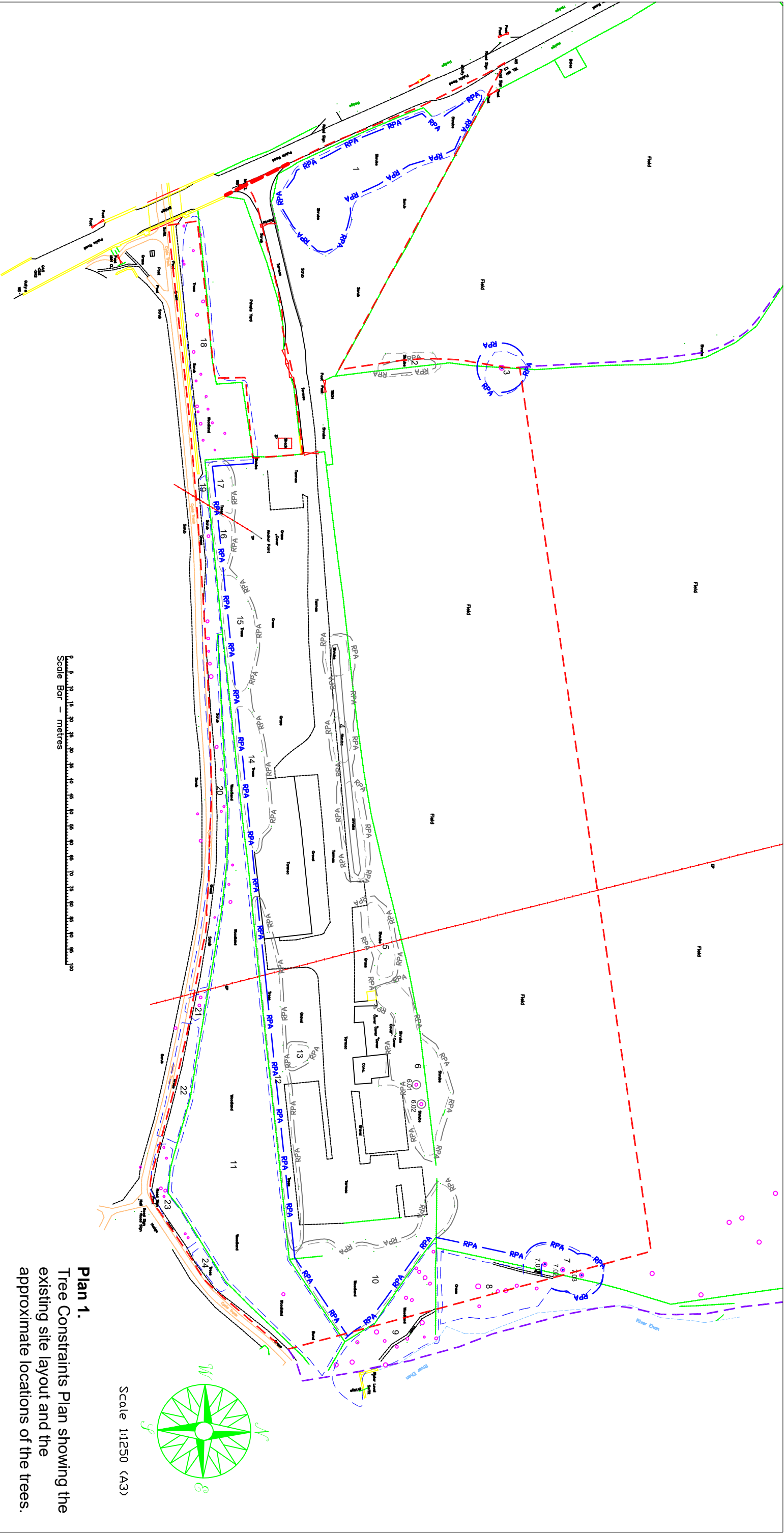
9 REFERENCES

Anon, 2005. *Woodland Management for Bats*. Forestry Commission. 15 pp.

BS 5837, 2012. Trees in relation to design, demolition and construction – Recommendations

BS 3998, 2010. Tree work - Recommendations

Moor Row - Old Station Yard



Appendix 1

The Experience and Qualifications of Eddie Cruickshank

1. Qualifications

- Foundation Degree in Arboriculture (Merit) 2012 – University of Central Lancashire, Myerscough College, Bilsborrow, Preston.
- Certificate of Higher Education in Arboriculture (Distinction) 2006 - Bournemouth University, Kingston Maurward College, Dorchester.
- Institute of Chartered Foresters - Part 2.
Management Plan - Little Oak Forest - Gwyned. 1994
- Institute of Chartered Foresters - Part 1.
Paper 3a - Harvesting Marketing and Utilisation. 1994
Paper 2 - Policy, Economics and Management. 1993
Paper 1 - Scientific Principles and Practice of Growing trees. 1991
- Ordinary National Diploma in Forestry (Credit) 1983 – Cumbria College of Agriculture and Forestry, Newton Rigg, Penrith.

2. Professional experience

I have worked and studied continuously within forestry and arboriculture since 1978:

- Currently self-employed as a **Forestry and Arboriculture Consultant** associated with Treescapes Consultancy Ltd, Cumbria (2012 to present).
- **Head Forester** - Morden Estates Company Ltd (2000 – 2010) - Morden Estates Company Ltd manages collectively the interests of various family trusts and individual members of the Drax family, centred around Charborough in Dorset. I managed approximately 950 Ha of woodlands to various objectives and supervised a direct labour force supplemented by contractors as necessary.
- **Manager** - Fountain Forestry /Fountains plc (1994 - 1999) - Fountain Forestry Ltd (and latterly Fountains plc) provided services for private and corporate landowners, utilities and local authorities throughout the UK and USA.
- **Head Forester** - Harewood Estate, West Yorkshire (1983 – 1994).
- Full time study at National School of Forestry, Newton Rigg, Penrith (1982 – 83).
- Assistant to the Head Forester at Eling Estate nr Newbury (1981-82).
- Full time study at National School of Forestry, Newton Rigg, Penrith (1980 – 81).
- Forest worker with the Forestry Commission at Affric Forest in Invernesshire (1978 – 80).

3. Membership of professional organisations.

- Institute of Chartered Foresters.
- Arboricultural Association (Professional member)
- CONFOR.
- Royal Forestry Society.

4. Continuing professional development.

I attend conferences, seminars and workshops run by forestry and arboriculture organisations, colleges and universities. Some of these have been:

- Forbes-Laird Arboricultural Consultancy Seminar 2019 - including Tree Risk Assessment and Identification of Hazards in Trees
- Simon Scotting, in association with Paul Cleaver Tree Consultancy, Training Event (2018) -Intermediate Tree Inspection.
- Arboricultural Association Training Course (2016) – Assessment of tree forks
- Arboricultural Association Training Event (2016) – BS5837: Advanced: Tree assessment for Planning.
- Arboricultural Association Training Event (2016) – BS5837: Advanced: Managing Trees on Construction Sites.
- Judge for the 2015 Royal Forestry Society James Cup.
- Arboricultural Association Training Event (2015) – BS5837: Tree Surveying and Categorisation.
- Arboricultural Association Training Event (2014) – Arboricultural Consultancy.
- Arboricultural Association 2 in1 Training Course (2012).
BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations.
The Town and Country Planning (Tree Preservation) (England) Regulations 2012.
- Ancient Tree Forum (2012) - Summer Field Trip to Cumbria.
- Arboricultural Association Northern Branch (2011) – Tree care seminar.
- Treework Environmental Practice - Seminar XVIII (2011) - Finding Holistic Solutions to Disease and Decline - Kew.
- Arboricultural Association Training Course (2011) - BS 3998:2010 Tree Work – Recommendations.
- LANTRA Awards Certificate of Training (2007) – Professional Tree Inspection

Appendix 2

Extracts from the British Standard: Trees In Relation To Design, Demolition and Construction – Recommendations (BS 5837, 2012)

TREE CATEGORISATION

The trees have been categorised as recommended in Section 4.5, Tree categorization method and Table 1 of the standard (BS 5837, 2012). A copy of Table 1 is included as Appendix 3.

TREE CONSTRAINTS

Section 5 of BS 5837 recommends producing a tree constraints plan (TCP) showing the trees and an area around them referred to as the root protection area (RPA). The RPA is a calculated area of soil sufficient to provide enough water and nutrients for the tree to remain in a healthy condition. The RPA is equal to the area of a circle with a radius 12 times the diameter of the trunk measured 1.5m above the ground. Alternatively, for multi-stemmed trees with more than five stems, the RPA is equal to the area of a circle with a radius equal to 12 times their mean trunk diameter measured at 1.5m above the ground level.

In Section 5.2.3, the Standard states:

‘The following factors should also be taken into account during the design process:

- a) the presence of tree preservation orders, conservation areas or other regulatory protection;
- b) potential incompatibilities between the layout and trees proposed for retention;
- c) the working and access space needed for the construction of the proposed development;

NOTE This might involve access facilitation pruning, or the use of a height restriction bar to prohibit tall vehicles accessing a site containing trees with low canopies.

- d) the effect that construction requirements might have on the amenity value of trees, both on and near the site, including the effects of pruning to facilitate access and working space;
- e) the requirement to protect the overhanging canopies of trees where they could be damaged by machinery, vehicles, barriers or scaffolding, where it will be necessary to increase the extent of the tree protection barriers to contain the canopy;
- f) infrastructure requirements in relation to trees, e.g. easements for underground or above-ground apparatus; highway safety and visibility splays; and other infrastructural provisions, such as substations, refuse stores, lighting, signage, solar collectors, satellite dishes and CCTV sightlines;
- g) the proposed end use of the space adjacent to retained trees;
- h) the potential for new planting to provide mitigation for any losses.’

TREE PROTECTION

The RPA forms the basis for a construction exclusion zone (CEZ) and requires protection during the development by means of barriers and/or ground protection fit

for ensuring the successful long-term retention of the trees. Section 6.2.1.1 of the standard states:

‘All trees that are being retained on site should be protected by barriers and/or ground protection (see 5.5) before any materials or machinery are brought onto the site, and before any demolition, development or stripping of soil commences. Where all activity can be excluded from the RPA, vertical barriers should be erected to create a construction exclusion zone. Where, due to site constraints, construction activity cannot be fully or permanently excluded in this manner from all or part of a tree’s RPA, appropriate ground protection should be installed.’

TREE PROTECTION BARRIERS

With regard to barriers erected to protect the retained trees, Section 6.2.2.1 of the standard states:

‘Barriers should be fit for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained tree(s). Barriers should be maintained to ensure that they remain rigid and complete.’

In addition, Section 6.2.2.2 states:

‘The default specification should consist of a vertical and horizontal scaffold framework, well braced to resist impacts, as illustrated in Figure 2. The vertical tubes should be spaced at a maximum interval of 3 m and driven securely into the ground. Onto this framework, welded mesh panels should be securely fixed. Care should be exercised when locating the vertical poles to avoid underground services and, in the case of the bracing poles, also to avoid contact with structural roots. If the presence of underground services precludes the use of driven poles, an alternative specification should be prepared in conjunction with the project arboriculturist that provides an equal level of protection. Such alternatives could include the attachment of the panels to a free-standing scaffold support framework.’

GROUND PROTECTION

With regard to protecting the soil within the RPA from compaction, Section 6.2.3.3 of BS 5837 (2012) states:

‘New temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil.

NOTE The ground protection might comprise one of the following:

- a) for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane;
- b) for pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane;
- c) for wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.’

CONSTRUCTION WITHIN THE RPA

Section 7.5.1

'The use of traditional strip footings can result in extensive root loss and should be avoided. The insertion of specially engineered structures within RPAs may be justified if this enables the retention of a good quality tree that would otherwise be lost (usually categories A or B). Designs for foundations that would minimize adverse impact on trees should include particular attention to existing levels, proposed finished levels and cross-sectional details. In order to arrive at a suitable solution, site-specific and specialist advice regarding foundation design should be sought from the project arboriculturist and an engineer. In shrinkable soils, the foundation design should take account of the risk of indirect damage'

Section 7.5.2

'Root damage can be minimized by using:

- piles, with site investigation used to determine their optimal location whilst avoiding damage to roots important for the stability of the tree, by means of hand tools or compressed air soil displacement, to a minimum depth of 600 mm;
- beams, laid at or above ground level, and cantilevered as necessary to avoid tree roots identified by site investigation.'

Section 7.5.3

'Where a slab for a minor structure (e.g. shed base) is to be formed within the RPA, it should bear on existing ground level, and should not exceed an area greater than 20% of the existing unsurfaced ground.'

Section 7.5.4

Slabs for larger structures (e.g. dwellings) should be constructed with a ventilated air space between the underside of the slab and the existing soil surface (to enable gas exchange and venting through the soil surface). In such cases, a specialist irrigation system should also be employed (e.g. roof run-off redirected under the slab). The design of the foundation should take account of any effect on the load-bearing properties of underlying soil from the redirected roof run-off. Approval in principle for a foundation that relies on topsoil retention and roof run-off under the slab should be sought from the building control authority prior to this approach being relied on.

Section 7.5.5

'Where piling is to be installed near to trees, the smallest practical pile diameter should be used, as this reduces the possibility of striking major tree roots, and reduces the size of the rig required to sink the piles. If a piling mat is required, this should conform to the parameters for temporary ground protection given in 6.2.3. Use of the smallest practical piling rig is also important where piling within the branch spread is proposed, as this can reduce the need for access facilitation pruning. The pile type should be selected bearing in mind the need to protect the soil and adjacent roots from the potentially toxic effects of uncured concrete, e.g. sleeved bored pile or screw pile.'

HARD SURFACES WITHIN THE RPA OF RETAINED TREES

Section 7.4.2 of BS 5837 (2012) states:

7.4.2.1 The design should not require excavation into the soil, including through lowering of levels and/or scraping, other than the removal, using hand tools, of any turf layer or other surface vegetation. If it is intended to use the new surface for construction access, it is essential that the extra loading and wear arising from this are taken into account during the design process.

7.4.2.2 The structure of the hard surface should be designed to avoid localized compaction by evenly distributing the loading over the track width and wheelbase of any vehicles expected to use the access.

7.4.2.3 New permanent hard surfacing should not exceed 20% of any existing unsurfaced ground within the RPA.

7.4.2.4 If the new surface is likely to be subject to de-icing salt application, an impermeable barrier should be incorporated to prevent contamination of the rooting area. Run-off should be directed away from the RPA (see also 8.6.5).

7.4.2.5 Where a permeable surface is to be used by vehicular traffic, a geotextile should be used at the base of construction to help prevent pollution contamination of the rooting area below.

7.4.2.6 Permeable hard surfacing can result in soil volume moisture content remaining at or near field capacity for long periods. Where there is a risk of waterlogging, the design should incorporate appropriate land drainage (see also 4.3 and 8.6.5). Land drainage within the RPA should be designed to avoid damage to the tree and the soil structure, e.g. sand slitting formed by compressed air soil displacement with the slits set radially to the tree.

7.4.2.7 The hard surface should be resistant to or tolerant of deformation by tree roots, and should be set back from the stem of the tree and its above-ground root buttressing by a minimum of 500 mm to allow for growth and movement. Resulting gaps may be filled using appropriate inert granular material.

NOTE 1 Appropriate sub-base options for new hard surfacing include three-dimensional cellular confinement systems. Alternatively, piles, pads or elevated beams can be used to support surfaces to bridge over the RPA or, following exploratory investigations to determine location, to provide support within the RPA while allowing the retention of roots greater than 25 mm in diameter.

NOTE 2 The use of two-dimensional load suspension systems is not recommended for surfaces intended for use by vehicles.'

Appendix 3

Table 1 from the British Standard: *Trees In Relation To Design, Demolition and Construction – Recommendations* (BS 5837, 2012)

Table 1 – Cascade Chart for Tree Quality Assessment

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	<ul style="list-style-type: none">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 declineTrees 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 <p>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7 below.</p>		
TREES TO BE CONSIDERED FOR RETENTION			
Category and Definition	1. Mainly arboricultural qualities	2. Mainly landscape qualities	3. Mainly cultural values, including conservation
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)
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
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

BS 5837 (2012) Section 4.5.7 states:

‘Where trees would otherwise be categorized as U, but have identifiable conservation, heritage or landscape value, even though only for the short term, they may be upgraded, although they might be suitable for retention only where issues concerning their safety can be appropriately managed.’

Appendix 4

Explanatory notes for some of the terms used in Table 1

Mathematical abbreviations: > = Greater than: < = Less than.

Compass Bearing: N = north; S = south; E = east; W = west; NE = north-east; NW = north-west; SE = south-east; SW = south-west; NNE = north, north-east; NNW = north, north-west; ENE = east, north-east; WNW = west, north-west; SSE = south, south-east; SSW = south, south-west; ESE = east, south-east; WSW = west, south-west.

Estimated measurements: The symbol '#' will be used to indicate when measurements have been estimated.

Tree Number: This is the number used to indicate the trees approximate position on the plans. This number is also used in Appendix 5.

Species: The species identification is based on visual observations and the common English name of what the tree appeared to be

Trunk Ø: Trunk diameter 1.5m above ground level recorded in millimetres measured with a diameter tape. If branches below 1.5m the trunk diameter will be measured just above ground level and 'base' will appear after the figure. If, for whatever reason, the diameter was measured at a different height above the ground the height will be mentioned. More than one figure indicates that the individual is has a number of stems. Many stems are indicated with a 'M'. If the DBH has been estimated '#' will appear in the column.

Height: The height of the tree measured with a Truepulse laser rangefinder.

Age Class: Assessed as either:

- Sapling or newly established = a size which could be easily transplanted;
- Semi-mature = prior to seed bearing age and could be transplanted with care;
- Juvenile Mature = young and if healthy growing rapidly, not yet achieved full mature height;
- 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;
- Ancient = exceptionally old for the species, the crown may be retrenching, provides many opportunities for wildlife and is likely to be an important habitat.

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.

Retention category: The retention category assessed using the guidance in Table 1 of BS 5837, 2005 [see Appendix 3].

- A) (light green) Trees of high quality and value: in such condition as to be able to make a substantial contribution (a minimum of 40 years is suggested);
- B) (mid blue) Trees of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested);
- C) (grey) Trees of low quality and value: currently in adequate condition to remain until a new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150mm.;
- U) (dark red) Trees in such a condition that any existing value would be lost within 10 years and which should, in the current context be removed for reasons of sound arboricultural management.

Crown Radius: The distance from the tree trunk to the cardinal points of the compass measured in metres.

Radius of the RPA: The radius of a circular Root Protection Area (RPA) in metres as specified using the guidance contained in BS 5837 (2012).

Area of the RPA: The area of the Root Protection Area (RPA) in square metres as specified using the guidance contained in BS 5837 (2012).

Location of defect: The part of the tree with a significant defect.

Type of defect: The general type of defect.

Description of defect: If required a description of the size, location or cause of the defect.

Significance: A subjective assessment of a combination of the likelihood of failure occurring or the defect leading to the death of the tree. Defects are categorised as either: Observation, no significance; Minor, little significance; Moderate, some significance; or Major, a major defect that could cause the tree to fail at any time.

Remedial action: General description of recommended work.

Details: Elaboration of the Remedial action

Work Priority:

- High priority work should be carried out as soon as possible;
- Medium priority work need not be carried out straight away but the trees should be inspected every two to three years – in leaf and out of leaf – and after strong winds. If this work is not carried out straight away I recommend that provision is made in future budgets to have it carried out at a later date.

- Low priority work need not be carried out straight away but defects have been noted that could develop over time. These trees should be inspected every two to three years – in leaf and out of leaf – and after strong winds.

Work Category:

- Category 1 work is required to establish acceptable levels of safety for the site and should be carried out in the time scale indicated by the priority attached to the recommendation;
- Category 2 work is advisory to establish high levels of arboricultural and silvicultural management of the existing trees and is not necessary for safety reasons.

Appendix 5

Tree Data Schedule

W boundary of wider site.

Id No.	Species	Height (m)	Age Class		Health	Crown Radius (m)				RPA Radius Area	Defects			BS 5837 Retention Category
		Trunk Ø (cm)	Life Expectancy	N		E	S	W	Location of Defect		Description of Defect	Severity		
1	Group	5-10		Young mature	Normal Vitality					1.8 m	<div><div>No significant defects to report</div></div>			B2
	Hawthorn x 5	15 @ 1.5					10 m²							
	Willow x 3	<												
Clear Stem (m):		Height to Lowest Part of Crown (m):0				Low Crown Direction:				<div><div>Recommended Tree Work</div><div>Details</div><div>Work Priority</div><div>Category</div></div>				
<div>Notes: Scattered multi-stem shrubs</div> <div><div></div></div>														

NW boundary of wider site.

Id No.	Species	Height (m)	Age Class		Crown Radius (m)				RPA Radius Area	Defects			BS 5837 Retention Category	
		Trunk Ø (cm)	Life Expectancy	Health	N	E	S	W	Location of Defect	Description of Defect	Severity			
2	Group	0-5		Young mature	Normal Vitality					1.5 m	<div>● No significant defects to report</div>			B2
	Hawthorn x 7	5 @ 1.5						7 m²						
		>												
		5 @ 1.5												
		5 @ 1.5												
		5 @ 1.5												
		5 @ 1.5												
Clear Stem (m):		Height to Lowest Part of Crown (m):		Low Crown Direction:										
Notes: hedge row remnant														
											Recommended Tree Work			
											Details			
											Work Priority			
											Category			
											<div>●</div>			

NW boundary of wider site.

Id No.	Species	Height (m)	Age Class	Health	Crown Radius (m)				RPA Radius Area	Defects			BS 5837 Retention Category
		Trunk Ø (cm)	Life Expectancy		N	E	S	W		Location of Defect	Description of Defect	Severity	
3	Oak	5-10	Mature	Normal Vitality	8	9	5	5	8.0 m 203 m ²		• No significant defects to report		B1
		67 @ 1.5											

Clear Stem (m): Height to Lowest Part of Crown (m): 4 Low Crown Direction:

Notes: Hedge row tree

Recommended Tree Work	Details	Work Priority	Category
•			

Within N perimeter fence of former station yard.

Id No.	Species	Height (m)	Age Class	Health	Crown Radius (m)				RPA Radius Area	Defects			BS 5837 Retention Category
		Trunk Ø (cm)	Life Expectancy		N	E	S	W		Location of Defect	Description of Defect	Severity	
4	Group Willow x Birch x	0-5	Juvenile mature	Normal Vitality					0.8 m 2 m ²		• Co-dominant stems	Observation	C2
		7 @ 1.5 <											

Clear Stem (m): Height to Lowest Part of Crown (m): 0 Low Crown Direction:

Notes:

Recommended Tree Work	Details	Work Priority	Category
•			

Within N perimeter fence of former station yard.

Id No.	Species	Height (m)	Age Class	Health	Crown Radius (m)				RPA Radius Area	Defects			BS 5837 Retention Category
		Trunk Ø (cm)	Life Expectancy		N	E	S	W		Location of Defect	Description of Defect	Severity	
5	Group Willow x Birch x Scots Pine x 1		Juvenile mature	Normal Vitality					0.8 m 2 m ²	• Whole group	growing under overhead power-line	Observation	C2
		7 @ 1.5 <											

Clear Stem (m): Height to Lowest Part of Crown (m): 0 Low Crown Direction:

Notes:

Within N perimeter fence of former station yard.

Id No.	Species	Height (m)	Age Class	Health	Crown Radius (m)				RPA	Location of Defect	Defects	Severity	BS 5837 Retention Category
		Trunk Ø (cm)	Life Expectancy		N	E	S	W	Radius				
					NE	SE	SW	NW	Area		Description of Defect		

6

Group

Willow x

Birch x

MBL x

@ 1.5

Juvenile mature

Normal

Vitality

m

m²

C2

Clear Stem (m):

Height to Lowest Part of Crown (m):

Low Crown Direction:

Notes:

6.01

Group

Birch x 2

Willow x 1

34 @ 1.5

Birch

24 @ 1.5

willow

19 @ 1.5

Birch

Young mature

Normal

Vitality

5.5 m

95 m²

C1

Clear Stem (m):

Height to Lowest Part of Crown (m):

Low Crown Direction:

Notes:

Within N perimeter fence of former station yard.

Id No.	Species	Height (m)		Age Class		Crown Radius (m)				RPA Radius Area	Location of Defect	Defects		Severity	BS 5837 Retention Category
		Trunk Ø (cm)		Life Expectancy	Health	N	E	S	W			Description of Defect			
6.02	Group			Young mature	Normal					7.0 m					C1
	Birch x 3	26 @	1.5		Vitality					155 m²					
	Willow x 1	Willow stem 3													
		26 @	1.5												
		Willow stem 2													
		36 @	1.5												
		Willow stem 1													
		16 @	1.5												
		birch													
		16 @	1.5												
	birch														
	16 @	1.5													
	birch														
Clear Stem (m):		Height to Lowest Part of Crown (m):			Low Crown Direction:										
Notes:															

NE boundary of wider site.

Id No.	Species	Height (m)	Age Class		Crown Radius (m)				RPA	Location of Defect	Defects	Severity	BS 5837 Retention Category	
		Trunk Ø (cm)	Life Expectancy	Health	N	E	S	W	Radius Area		Description of Defect			
					NE	SE	SW	NW						
7	Group	10-15	Mature	Normal Vitality										B2
	Sycamore x 3													
Clear Stem (m):		Height to Lowest Part of Crown (m):		Low Crown Direction:										
Notes:														

NE boundary of wider site.

Id No.	Species	Height (m)		Age Class		Crown Radius (m)				RPA Radius Area	Defects			BS 5837 Retention Category		
		Trunk Ø (cm)		Life Expectancy	Health	N	E	S	W		NE	SE	SW		NW	Location of Defect
7.01	Sycamore															
		50 @	1.5													
		#														
Clear Stem (m):		Height to Lowest Part of Crown (m): 4				Low Crown Direction:						Recommended Tree Work				
Notes:		Southern tree in the group										Details				
												Work Priority				
												Category				
												•				
7.02	Sycamore															
		50 @	1.5													
		#														
Clear Stem (m):		Height to Lowest Part of Crown (m): 4				Low Crown Direction:						Recommended Tree Work				
Notes:												Details				
												Work Priority				
												Category				
												•				
7.03	Sycamore															
		50 @	1.5													
		#														
Clear Stem (m):		Height to Lowest Part of Crown (m): 4				Low Crown Direction:						Recommended Tree Work				
Notes:												Details				
												Work Priority				
												Category				
												•				

Outside E boundary of site.

Id No.	Species	Height (m)	Age Class		Crown Radius (m)				RPA Radius	Location of Defect	Defects	Severity	BS 5837 Retention Category
		Trunk Ø (cm)	Life Expectancy	Health	N	E	S	W	Area		Description of Defect		
8	Group	10-15		Young mature	Normal Vitality				2.4 m	● Crown (outer)	Reduced vitality. dieback among the ash trees.	Observation	B2
	Alder x	20 @	1.5					18 m²					
	Oak x	<											
	Sycamore x												
	Ash x												
Clear Stem (m):		Height to Lowest Part of Crown (m):			Low Crown Direction:								
Notes: Viewed from site but not inspected													

Outside E boundary of site.

Id No.	Species	Height (m)		Age Class		Crown Radius (m)				RPA Radius	Defects			BS 5837 Retention Category
		Trunk Ø (cm)		Life Expectancy	Health	N	E	S	W	Area	Location of Defect	Description of Defect	Severity	
9	Group	#10-15		Young mature	Normal Vitality					3.6 m	<div>• No significant defects to report</div>	Not inspected	B2	
	MBL x	30 @	1.5							41 m²				
		<												
Clear Stem (m):		Height to Lowest Part of Crown (m):			Low Crown Direction:			<div>Recommended Tree Work</div> <div>Details</div> <div>Work Priority</div> <div>Category</div>						
Notes: Woodland (viewed from site but not inspected)		<div>•</div>												

Notes: Woodland (viewed from site but not inspected)

E end of former station yard

Id No.	Species	Height (m)		Age Class		Crown Radius (m)				RPA Radius Area	<u>Defects</u>			BS 5837 Retention Category
		Trunk Ø (cm)		Life Expectancy	Health	N	E	S	W		Location of Defect	Description of Defect	Severity	
10	Group	0-5		Juvenile mature	Normal					1.2 m	● Co-dominant stems	Acute stem union (stable at time of inspection) multistems	Observation	C2
	Willow x Alder x	10 @ 1.5		Vitality					5 m²					
Clear Stem (m):		Height to Lowest Part of Crown (m):			Low Crown Direction:									
Notes: Building debris present among trees.														
<u>Recommended Tree Work</u>											<u>Details</u>		<u>Work Priority</u>	<u>Category</u>
●														

Notes: Building debris present among trees.

S of E part of former station yard up to security fence parallel to cycleway.

Id No.	Species	Height (m)		Age Class		Health	Crown Radius (m)				RPA Radius Area	Defects			BS 5837 Retention Category
		Trunk Ø (cm)		Life Expectancy			N	E	S	W		Location of Defect	Description of Defect	Severity	
11	Group	5-10		Young mature	Normal					2.4 m	• Co-dominant stems	Acute branch unions	Observation	B2	
	MBL x	20 @	1.5	Vitality					18 m²						
	Alder x	<													
	Willow x														
Clear Stem (m):		Height to Lowest Part of Crown (m):			Low Crown Direction:										
Notes:															

Notes:

Within S perimeter fence of former station yard.

Id No.	Species	Height (m)	Age Class		Health	Crown Radius (m)				RPA Radius	Location of Defect	Defects	Severity	BS 5837 Retention Category
		Trunk Ø (cm)	Life Expectancy	N		E	S	W	Area	Description of Defect				
12	Group	5-10		Semi-mature	Normal Vitality					1.0 m	● Co-dominant stems	Acute stem unions	Observation	C2
	Birch x	8 @	1.5					3 m²						
	Willow x	<												
	Sycamore x													
	Alder x													
Clear Stem (m):		Height to Lowest Part of Crown (m):			Low Crown Direction:									
Notes:														

Recommended Tree Work	Details	Work Priority	Category
•			

within S perimeter fence of former station yard.

Id No.	Species	Height (m)		Age Class		Crown Radius (m)				RPA Radius Area	Defects			BS 5837 Retention Category
		Trunk Ø (cm)		Life Expectancy	Health	N	E	S	W		Location of Defect	Description of Defect	Severity	
13	Alder	0-5		Young mature	Normal Vitality					2.6 m	● Co-dominant stems	Acute stem unions (stable at time of inspection) at base	Moderate	C1
		11 @	1.5							22 m²				
		<												
		11 @	1.5											
		<												
		11 @	1.5											
<														
11 @		1.5												
<														
Clear Stem (m):		Height to Lowest Part of Crown (m):				Low Crown Direction:								
Notes:														

Recommended Tree Work	Details	Work Priority	Category
•			

Within S perimeter fence of former station yard.

Id No.	Species	Height (m)	Age Class		Crown Radius (m)				RPA	Location of Defect	Defects	Severity	BS 5837 Retention Category	
		Trunk Ø (cm)	Life Expectancy	Health	N	E	S	W	Radius Area		Description of Defect			
14	Group	0-5		Juvenile mature	Moderate					1.1 m	● Co-dominant stems	Acute stem unions.	Observation	C2
	Willow x	9 @	1.5		Vitality					4 m²				
	Birch x	<												
Clear Stem (m):		Height to Lowest Part of Crown (m):			Low Crown Direction:									
Notes:														

Within S perimeter fence of former station yard.

Id No.	Species	Height (m)	Age Class		Crown Radius (m)				RPA Radius	Location of Defect	Defects	Severity	BS 5837 Retention Category			
		Trunk Ø (cm)	Life Expectancy	Health	N	E	S	W	Area		Description of Defect					
15	Group	5-10		Juvenile mature					1.4 m	● Co-dominant stems		Observation	C2			
	Willow x	12 @ 1.5		Vitality					7 m²							
	Birch x	<														
Clear Stem (m):		Height to Lowest Part of Crown (m):			Low Crown Direction:				Recommended Tree Work					Details	Work Priority	Category
Notes: building debris present among trees														●		

Within S perimeter fence of former station yard.

Id No.	Species	Height (m)	Age Class	Health	Crown Radius (m)				RPA Radius Area	Location of Defect	Defects	Severity	BS 5837 Retention Category								
		Trunk Ø (cm)	Life Expectancy		N	E	S	W	Description of Defect												
16	Group	5-10	Juvenile mature	Normal					1.1 m	● Co-dominant stems		Observation	C2								
	Willow x	9 @ 1.5	Vitality					4 m²													
Clear Stem (m):		Height to Lowest Part of Crown (m):		Low Crown Direction:																	
Notes:																					
<table><tr><th>Recommended Tree Work</th><th>Details</th><th>Work Priority</th><th>Category</th></tr><tr><td colspan="4">●</td></tr></table>														Recommended Tree Work	Details	Work Priority	Category	●			
Recommended Tree Work	Details	Work Priority	Category																		
●																					

Within S perimeter fence of former station yard.

Id No.	Species	Height (m)	Age Class	Health	Crown Radius (m)				RPA Radius Area	Defects			BS 5837 Retention Category
		Trunk Ø (cm)	Life Expectancy		N	E	S	W		Location of Defect	Description of Defect	Severity	
17	Group	5-10	Young mature	Normal					1.8 m	<div>● Co-dominant stems</div>	Observation	C2	
	Birch x	15 @ 1.5	Vitality					10 m²					
Clear Stem (m):		Height to Lowest Part of Crown (m):		Low Crown Direction:		<div>Recommended Tree Work<div>Details</div><div>Work Priority</div><div>Category</div></div>							
Notes:		<div>●</div>											

SW part of the wider site.

Id No.	Species	Height (m)	Age Class		Crown Radius (m)				RPA Radius	Location of Defect	Defects	Severity	BS 5837 Retention Category
		Trunk Ø (cm)	Life Expectancy	Health	N	E	S	W	Area		Description of Defect		
18	Group	10-15	Young mature	Normal					6.2 m				B2
	Birch x	21 @ 1.5		Vitality					122 m²				
	Willow x	Oak <											
	Sycamore x	18 @ 1.5											
	Scots Pine x	Beech <											
	Alder x	32 @ 1.5											
	Beech x	Alder <#											
	Oak x	30 @ 1.5											
		Birch <											
Clear Stem (m):		Height to Lowest Part of Crown (m):		Low Crown Direction:									
Notes:													

N of Cycleway.

Id No.	Species	Height (m)	Age Class	Health	Crown Radius (m)				RPA Radius Area	<u>Defects</u>			BS 5837 Retention Category
		Trunk Ø (cm)	Life Expectancy		N	E	S	W		Location of Defect	Description of Defect	Severity	
19	Group		Juvenile mature	Normal					1.0 m	• No significant defects to report			B2
	Willow x	8 @ 1.5		Vitality					3 m ²				
		#											

Clear Stem (m): Height to Lowest Part of Crown (m): Low Crown Direction:

Notes: Scrub

N of Cycleway.

Id No.	Species	Height (m)	Age Class	Health	Crown Radius (m)				RPA Radius Area	<u>Defects</u>			BS 5837 Retention Category
		Trunk Ø (cm)	Life Expectancy		N	E	S	W		Location of Defect	Description of Defect	Severity	
20	Group		Young mature	Normal						• Co-dominant stems	various willows beside cycleway	Observation	B2
	Willow x			Vitality									
	Birch x												

Clear Stem (m): Height to Lowest Part of Crown (m): Low Crown Direction:

Notes: Scrub

N of Cycleway.

Id No.	Species	Height (m)		Age Class		Crown Radius (m)				RPA Radius Area	Defects			BS 5837 Retention Category
		Trunk Ø (cm)		Life Expectancy	Health	N	E	S	W		Location of Defect	Description of Defect	Severity	
21	Group			Young mature	Normal					3.7 m	● Co-dominant stems	Observation	B2	
	Willow x #2	17 @	1.5		Vitality					43 m²				
		#												
		15 @	1.5											
		#												
		12 @	1.5											
		#												
		10 @	1.5											
		#												
		9 @	1.5											
		#												
		8 @	1.5											
		#												
		7 @	1.5											
		#												
Clear Stem (m):		Height to Lowest Part of Crown (m):			Low Crown Direction:									
Notes:														

N of Cycleway.

Id No.	Species	Height (m)		Age Class		Crown Radius (m)				RPA Radius Area	Defects			BS 5837 Retention Category
		Trunk Ø (cm)		Life Expectancy	Health	N	E	S	W		Location of Defect	Description of Defect	Severity	
						NE	SE	SW	NW					
22	Group Willow x	0 @ 1.5 #7-12cm		Young mature	Normal Vitality					0.0 m 0 m²	● Co-dominant stems		Observation	B2
Clear Stem (m):		Height to Lowest Part of Crown (m):		Low Crown Direction:										
Notes:														

N of Cycleway.

Id No.	Species	Height (m)	Age Class	Health	Crown Radius (m)				RPA Radius Area	<u>Defects</u>			BS 5837 Retention Category
		Trunk Ø (cm)	Life Expectancy		N	E	S	W		Location of Defect	Description of Defect	Severity	
23	Group		Young mature	Normal Vitality						• Crown	dieback - ash	Moderate	B2
	Ash x 5												
	Willow x >5									• Co-dominant stems	acute stem unions (stable at time of inspection)	Moderate	
	Oak x 1												
	Birch x 1												

Clear Stem (m): Height to Lowest Part of Crown (m): Low Crown Direction:

Notes:

N of Cycleway.

Id No.	Species	Height (m)	Age Class	Health	Crown Radius (m)				RPA Radius Area	<u>Defects</u>			BS 5837 Retention Category
		Trunk Ø (cm)	Life Expectancy		N	E	S	W		Location of Defect	Description of Defect	Severity	
24	Group		Young mature	Normal Vitality					0.8 m	• Whole Tree	multi-stems	Observation	B2
	Birch x	7 @ 1.5							2 m ²				
	hazel x	<											

Clear Stem (m): Height to Lowest Part of Crown (m): Low Crown Direction:

Notes:

Treescapes Consultancy Ltd.

Briggs House Farm
Helsington
Kendal
Cumbria
LA8 8AG

www.treescapesconsultancy.co.uk

Luke Steer - luke.steer@treescapesconsultancy.co.uk
Mobile: 07734 113964

Eddie Cruickshank – eddie.cruickshank@treescapesconsultancy.co.uk
Mobile: 07818 258725