

# arboricultural impact assessment (AIA)

and tree protection strategy

for proposed development at the

# Land off Rectory Lane Fringford Bicester

On Behalf of: Mr A Bradbury

Reference: MW.20.0111.AIA

Date Issued: 22.06.2020





# executive summary

This report provides the information required to enable the local planning authority to meet the duty placed upon them by s.197 of the Town and Country Planning Act (1990).

Included, to support the proposals for a new dwelling on the land off Rectory lane, Fringford, are:

- A BS5837:2012 compliant tree survey
- An arboricultural impact assessment
- A tree protection strategy including a method statement and protection plan

One tree of low quality is to be removed to facilitate the proposals

The proposal is outside the root protection areas of all higher quality trees. There is a minor encroachment into the RPA of one low quality tree.

Ground protection and standard barriers will be used throughout construction.

The arboricultural impact of this proposal is **low**, and thus acceptable.

Correct adherence to the tree protection strategy proposed within this report is critical for ensuring the tree is successfully protected through the construction process. Should any of the protection measures prove incompatible with elements of the build program, please call 01730 239 492.



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# instructions and terms of reference

1.1. In February 2020, I was instructed to undertake a tree survey and subsequently to produce this report in support of a planning application for a replacement dwelling on the site off Rectory lane, Fringford.

1.2. Following the recommendations of the British Standard<sup>1</sup>, this report includes the necessary information to enable the local planning authority to meet the duty placed upon them by s.197 of the Town and Country Planning Act (1990).

1.3. It demonstrates that the impact, both direct and indirect, of the proposal, has been assessed and where appropriate, mitigation, compensation and tree protection proposed.

1.4. Correct implementation of the tree protection specified within this report is critical for ensuring the retained trees are successfully protected throughout the construction process.

1.5. Documents supplied to assist this assessment included:

Proposed: 2550-04.pdf

• Site survey: 4328.dwg

1.6. The assessment considers the impact of the proposal on the constraint presented by trees retained within the site, and those on adjacent land. Such impact can be caused directly though construction damage and indirectly from post development resentment and pressure to detrimentally prune or remove the trees. The latter is often due to a poor juxtaposition between the proposal and the trees.

1.7. The root protection area (RPA) for each tree represents a minimum area in m<sup>2</sup> that should be left undisturbed around each retained tree. This is initially represented by a circle but is fundamentally an area of rooting volume. This is often adjusted to account for constraints to root growth within the site (primarily highways and buildings). Recommendations are provided in the British Standard as to the protection of existing trees during the construction process. This is achieved by ensuring a tree protection strategy is implemented before any demolition or construction on site.



# 2. site description

- 2.1. The site is small parcel of land on the junction of Rectory Lane and Farriers Close. It is bounded by small hedges and some trees.
- 2.2. The site is centred at Ordnance Survey Grid Reference: SP 60371 28919. <u>Here</u> is a link to view the site's location online.

# 3. statutory legislation

3.1. A copy of Cherwell District Council's Tree Preservation Order ref: 11/97 has been supplied. All surveyed trees are included, and are marked on the appended plan.

# 4. tree survey - scope and methodology

- 4.1. Tree survey data can be found on the appended plan.
- 4.2. The tree survey has been carried out following the recommendations of The British Standard and the trees are assessed objectively and without reference to any site layout proposals. Categories are based on each tree's health and condition, together with an assessment of its life expectancy if its surroundings were to be unchanged.
- 4.3. The reference numbers of surveyed trees and groups of trees are shown on the tree reference plan, which is appended to this report and based on the supplied survey drawing. Stem locations within groups may be estimated, and indicative of canopy only.
- 4.4. The tree survey was carried out from ground level only, with the aid of binoculars as necessary, following the Visual Tree Assessment<sup>2</sup> (VTA) method.
- 4.5. Where trees are located on neighbouring land an estimated appraisal has been made of their quality and dimensions.
- 4.6. Where stems or branches are obscured by ivy or other materials a full assessment of those parts will not be possible.
- 4.7. Tree heights were measured with a clinometer or estimated in relation to those measured.
- 4.8. Trunk diameters are measured at 1.5m above ground level, where this is not possible, then Figure C.1 of the British Standard is followed.
- 4.9. Tree canopies, where markedly asymmetrical, were measured (or estimated by pacing) in four directions using a laser measure. Symmetrical canopies are measured in one direction only, with dimensions in the remaining directions assumed to be similar. For the canopies of groups of

London:H.M.S.O.



 $<sup>^{\</sup>rm 2}$  Mattheck, C. & Breloer, H., 1998. The Body Language of Trees: A Handbook for Failure Analysis.

trees, the maximum radius for each compass point is measured (more complicated groups will have further notes taken and an accurate representation will be shown on the plan).

4.10. All estimated dimensions are noted in the data.

# 5. arboricultural impact assessment

5.1. It is proposed to build a single residential dwelling on the subject site. The location and layout of which can be seen on the appended plan.

#### Tree Removals

5.2. One low quality sycamore is to be removed to facilitate this proposal. It is graded as such due to a historic weak union in the main stem.

## Tree Surgery

5.3. At this time, no tree surgery work is proposed, just removal of ivy and a small self-seeded sapling elder (too small to be itemised in the survey).

#### Construction Impact

- 5.4. It can be seen on the appended plan that there is an encroachment into the circular RPA of T2. The tree is small and although included with the TPO, it barely warrants such protection. It is heavily ivy clad and of little wider long-term value. Therefore, it would be unreasonable to adjust the proposal fo such a small encroachment (<1.3% of the overall 114m² RPA). The use of ground proaction protects most of the area of encroachment.
- 5.5. The RPAs of all other trees can be adequately protected throughout construction.

#### Service & Utility Provisions

5.6. The proposed layout allows for reasonably open access to all units. There is adequate space to service the site whilst avoiding all RPAs.

#### Future Pressure

5.7. I have worked with the design team to achieve the subject layout and am confident that the proposed dwelling maximises the available space whilst not resulting in situations where excessive shade might bring forth requests to heavily prune or remove the retained trees.

#### Summary

5.8. Provided the tree protection strategy is implemented as outlined in the following AMS, it is my opinion that this application is of **low** arboricultural impact, and thus acceptable.



# 6. arboricultural method statement (ams)

- 6.1. The tree protection on this site is subject to implementation as detailed in the following sections.
- 6.2. The recommendations of the British Standard have been applied where viable. Where deviations from the preferred approach are required, impact on any retained trees is minimised through a combination of supervision from an Arboricultural Clerk of Works and adherence to the associated method statement.
- 6.3. It is imperative that the strategy is followed to avoid not only impact upon the trees, but to adhere to any planning conditions, should consent be granted.
- 6.4. The information from this section forward must be passed to the site foreman and cascaded to all relevant personnel involved in the project.
- 6.5. Any questions about the content or its implementation should be directed to **Mark Welby on 01730 239 492**, before action is taken.
- 6.6. A plan showing the types of tree protection and their locations is appended. It includes the tree survey data, existing site features along with the proposed construction, drainage changes in level and other factors that could impact trees.
- 6.7. The plan must be read in conjunction with this method statement.

## Timing of Operations

6.8. It is essential that the following phasing is followed if trees are to be effectively protected throughout construction.

1	Tree removals/surgery
2	Erection of protection barriers & installation of ground protection
3	Demolition of existing barn
4	Excavation for any groundworks & service trenches
5	Construction phase
6	Removal of barriers after all external construction work has been completed
7	Soft landscaping (if required)

6.9. The above has been drafted at planning stage. Should any of the protection measures prove incompatible with elements of the build program, please call 01730 239 492 to discuss options.

markwelby

#### Arboricultural Clerk of Works (ACoW)

- 6.10. Where works have the potential to impact retained trees, supervision may be specified within the method statement.
- 6.11. This is typically the project arboriculturist, who will document the process and provide an auditable record of the operation.
- 6.12. See subsections for requirements.

#### Construction Exclusion Zone (CEZ)

- 6.13. It is the responsibility of everyone engaged in the construction process to respect the tree protection measures and observe the necessary precautions within and adjacent to them.
- 6.14. Inside the exclusion zone, the following shall apply:
  - No mechanical excavation whatsoever:
  - No excavation by any other means without arboricultural site supervision;
  - No hand digging without a written method statement having first been approved by the project arboriculturist;
  - No lowering of levels for any purpose (except removal of grass sward using hand tools);
  - No storage of plant or materials;
  - No storage or handling of any chemical including cement washings;
  - No vehicular access;
  - No fire lighting.
- 6.15. In addition to the above, further precautions are necessary adjacent to trees:
  - No substances injurious to tree health, including fuels, oil, bitumen, cement (including cement washings), builder's sand, concrete mixing and other chemicals shall be stored or used within or directly adjacent to the protection area of retained trees;
  - No fire shall be lit such that flames come within 5m of tree foliage.
- 6.16. Variation from the above may be specified in the following sections of this method statement.

  This is only acceptable where detailed and will typically be subject to supervision by the ACoW.

#### Protection Barriers

- 6.17. Given the simplicity of this project, the installation of barriers as shown on the appended plan will be more than adequate to protect the subject trees throughout construction.
- 6.18. Barriers must 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.





Typical tree protection barrier construction

6.19. The default specification comprises a vertical and horizontal scaffold framework, well braced to resist impacts, as illustrated on the tree protection plan (TPP). 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**

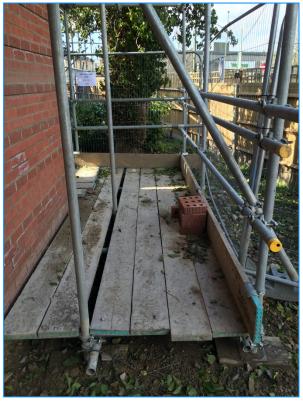
6.20. If required (or as shown on the appended tree protection plan), ground protection is to be installed as follows. It must be capable of supporting the expected loads and avoiding rutting, compaction and damage to the soil: as advised in section 6.2.3 of the British Standard.

#### 6.21. Stages of ground protection installation:

- 1. No plant machinery to be used in the area of ground protection for whatever reason;
- 2. Dismantle primary TPF and re-erect in secondary location as shown on TPP (if required) OR erect fencing to protect any newly exposed CEZ not to be covered by ground protection;
- 3. Any shrubs, saplings or trees to be removed, are to be cut or ground out to just below ground level rather than grubbed or winched out, which can damage roots of retained trees;
- 4. Lay woven geotextile over existing ground surface by hand;



- 5. Cover the area with compressible layer, woodchip, for example, using hand tools only;
- Cover compressible layer with side butting scaffold boards or plywood boards;
- 7. Confirm surface is acceptable for use with project arboriculturist;
- 8. Area ready for construction access;
- Any scaffolding required within the area will be erected with the uprights placed on spreader boards;
- 10. The boarding will be left in place until the construction works are finished.



Scaffold ground protection

- 6.22. A single thickness of boarding laid on the soil surface will provide sufficient protection for pedestrian loads. However, for wheeled or tracked construction traffic movements within the RPA, ground protection will involve the use of temporary cellular confinement systems, reinforced concrete slabs or track-board systems details of which are to be specified by the project engineer and approved for use by the project arboriculturist and local authority before construction commences.
- 6.23. Track-boards can be sourced from Trakmats Europe Ltd, 0845 6435388, www. trakmatseurope.com, or groundguards.com
- 6.24. There is to be no excavation within ground protection area whatsoever. This includes installation of services and associated utilities.



## Tree Surgery

- 6.25. Should any pruning work be required, the following must be adhered to once any requisite consist are obtained.
- 6.26. All work will be carried out in accordance with BS3998<sup>3</sup> industry best practice and in line with any works already agreed with the council.
- 6.27. The statutory protection<sup>4 5</sup> will be adhered to. If further advice is required, particularly if bats are discovered during tree work, it will be obtained from Natural England or other competent persons and recommendations adhered to.
- 6.28. The stumps of any trees removed from within the Construction Exclusion Zone or the RPAs of retained trees will be either cut flush to ground level and left in situ or ground out using a stump grinder. They will not be winched out.
- 6.29. All operations shall be carefully carried out to avoid damage to the trees being treated or neighbouring trees. No trees to be retained shall be used for anchorage or winching purposes.

# Installation of Underground Services

- 6.47. Mechanical trenching for the installation of underground apparatus and drainage severs any roots present and can change the local soil hydrology in a way that adversely affects the health of the tree. For this reason, particular care must be taken in the routeing and methods of installation of all underground apparatus. Wherever possible, apparatus must be routed outside RPAs. Where this is not possible, it is preferable to keep apparatus together in common ducts. Inspection chambers should be sited outside the RPA.
- 6.48. Where underground apparatus is to pass within the RPA, detailed plans showing the proposed routeing must be drawn up in conjunction with the project arboriculturist. In such cases, trenchless insertion methods should be used: Microtunnelling, Surface-launched directional drilling, Pipe ramming or Impact moling (see BS5837:2012 Table 3), with entry and retrieval pits being sited outside the RPA. Provided that roots can be retained and protected, excavation using hand-held tools might be acceptable for shallow service runs. If this is case, the following methodology must be followed:

## 6.49. Stages for installing services:

1. Contact project arboriculturist to hold pre-start site meeting and 'toolbox' talk before starting work.

<sup>&</sup>lt;sup>5</sup> Countryside and Rights of Way Act. (2000) London: HMSO.



<sup>&</sup>lt;sup>3</sup> BS3998:2010- Recommendations for Tree Work. London: British Standards Institute

<sup>&</sup>lt;sup>4</sup> Wildlife and Countryside Act. (1981) London: HMSO.

- 2. Remove just enough tree protection fencing to allow access to area and facilitate trenching.
- 3. Remove any surface vegetation or existing hard surfaces using hand tools.
- 4. Using and air-pick excavate the trench, keeping to minimum dimensions required.
- 5. Roots occurring in clumps of 25 mm diameter and over are encountered they will be retained and kept damp by covering with hessian (re-wetted as required). If required, these should be severed only following consultation with an arboriculturist; as such roots might be essential to the tree's health and stability.
- 6. Feed in services.
- 7. Backfill trench with 200-300mm depth of excavated soil, or a mixture of excavated and imported topsoil to BS3882: 2015, firming down with heels.
- 8. Repeat step 7 until trench is filled.
- 9. Re-erect tree protection fencing as per approved plan.
- 6.50. The method of excavation above, for trenching within RPAs, is using air excavation. This tool utilises compressed air to remove soil from around tree roots causing minimal damage and can be run off a typical site compressor. I can provide details of contractors supplying air excavation services if required.
- 6.51. Alternatively, trenchless technology, such as thrust boring can be used in some instances and is particularly effective as it can pass directly under the tree, at a depth which is likely to avoid almost all impact on roots of the subject tree. As no access/thrust pits will be located within the RPAs of the subject trees, the need for arboricultural supervision is limited.
- 6.52. Reference can be made to NJUG Vol 46 for guidance, but any approach must be approved by the project arboriculturist and brought to the attention of the local authority tree officer.

<sup>6</sup> National Joint Utilities Group. (2010). Volume 4: NJUG Guidelines For The Planning, Installation And Maintenance Of Utility Apparatus In Proximity To Trees (Issue 2) – Operatives Handbook. NJUG.



## Fencepost Foundations in RPA

#### 6.53. Stages for installing wooden posts:

#### No plant machinery to be used in the area for whatever reason

- 1. Contact project arboriculturist to hold pre-start site meeting and 'toolbox' talk before starting work.
- 2. Remove TPF to allow access to area.
- 3. Dig postholes using hand tools, avoiding damage to the protective bark covering larger roots. Roots smaller than 25mm diameter may be pruned back using either secateurs or a hand saw, leaving a clean cut.
- 4. Damage or severance of roots above 25mm diameter must be avoided. If roots of this size are discovered, the hole should be relocated. If there are a large number of such roots it may be necessary to relocate the hole by half a fence panels length and adjust the fence panels accordingly.
- 5. Line hole with non-porous lining, for example, durable polyethene bag.
- 6. Insert post and fill post-hole with concrete to just below ground level.
- 7. Trim polyethene to ground level and fill with clean topsoil.

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# appendices

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# tree categories explained

Category and definition	Criteria (including subcategorie	es where appropriate)		
Trees unsuitable for retention (s	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 are dead or are showing signs of significant, immediate, and irreversible overall de  *Trees infected with pathogens of significance to the health and/or safety of other trees near			
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for reten	tion			
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 semiformal 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 woodpasture)	
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	
Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	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	



II.

# protection plan

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#### BS5837 Tree Survey Schedule Stem Diameter Canopy NESW Common Name air overall physiological condition Acer 300mm; 0mm; 200m but reduced structural condition due to tight main stem union. Ivy on stem. 6N6E6S6W 20 Years Hawthorn, Common Heavily ivy clad. Elder growing Crataegus 3 N 3 E 3 S 3 W 10 Years 500mm Crataegus 400mm 3 N 3 E 3 S 3 W leavily ivy clad. 10 Years Ash, Common 300mm 2 N 4 E 5 S 5 W Mature vy on stem. One of a group of three. 20 Years axinus excelsior Ash, Common 350mm; 300mm 3 N 5 E 3 S 6 W Mature Ivy on stem. One of a group of three. 20 Years B1 xinus excelsior 550mm; 250mm | 6 N 5 E 2.5 S 5 W Ivy on stem. One of a group of three.

Survey by M Welby RCArborA, FArborA, Feb 2020

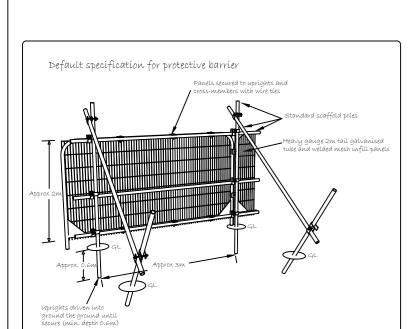
Where dimensions are not listed please refere to the plan graphics for an indicatvie representation (typically for groups).

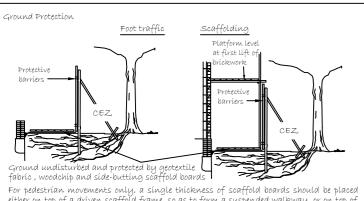
Retained Trees				
Ref	Species	Common Name	Category	
T2	Crataegus monogyna	Hawthorn, Common	C1	
T3	Crataegus monogyna	Hawthorn, Common	C1	
T4	Fraxinus excelsior	Ash, Common	B1	
T5	Fraxinus excelsior	Ash, Common	B1	
T6	Acer pseudoplatanus	Sycamore	B1	

Trees for Removal or Retention

Trees for Removal				
ef	Species	Common Name	Category	
1	Acer pseudoplatanus	Sycamore	C1	

Tree Work Schedule			
Work to Retained Trees			
Species	Common Name	Recommendations	Category
Crataegus monogyna	Hawthorn, Common	Sever ivy at base and remove elder	C1
Crataegus monogyna	Hawthorn, Common	Sever ivy at base	C1





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.

For pedestrian operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards should be placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile.

For wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. pre-cast reinforced concrete slabs) should be employed to an engineering specification designed in conjunction with arboricultural advice to accommodate the likely loading to which it will be subjected.



# Construction Exclusion Zone

t is the responsibility of everyone engaged in the construction process to respect the tree protection measures and observe he necessary precautions within and adjacent to them.

nside the exclusion zone, the following shall apply:

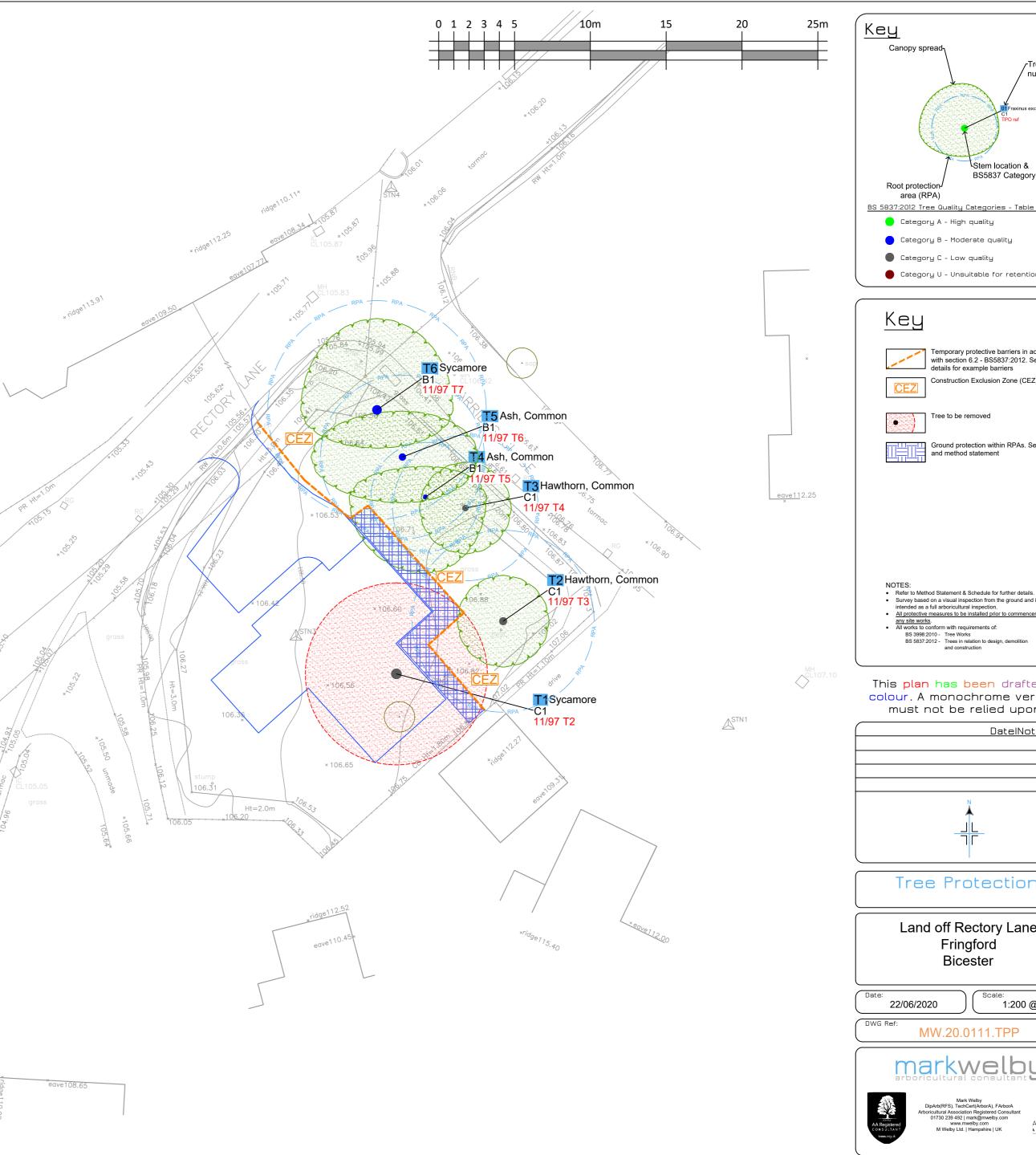
- No mechanical excavation whatsoever; No excavation by any other means without arboricultural
- site supervision; No hand digging without a written method statement having
- first been approved by the project arboriculturist;
- No lowering of levels for any purpose (except removal of grass sward using hand tools);
- No storage of plant or materials;
- No storage or handling of any chemical including cement washings;
- No vehicular access;
- No fire lighting.

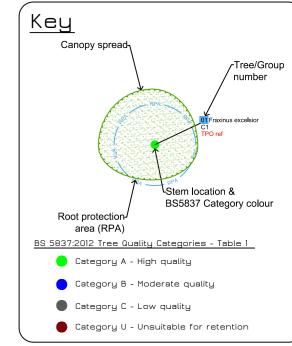
retained trees;

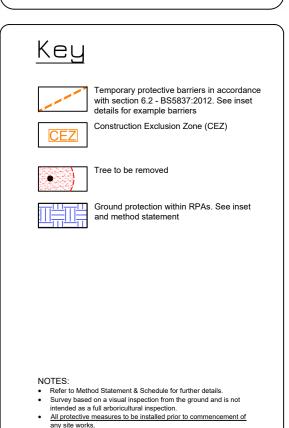
#### addition to the above, further precautions are necessary adjacent to trees:

- No substances injurious to tree health, including fuels, oil, bitumen, cement (including cement washings), builder's sand, concrete mixing and other chemicals shall be stored or used within or directly adjacent to the protection area of
- No fire shall be lit such that flames come within 5m of tree foliage.

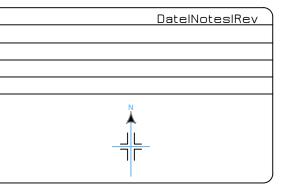
All weather signs shall be erected at reasonable intervals on the barriers. See example inset







This plan has been drafted in colour. A monochrome version must not be relied upon



Tree Protection

Land off Rectory Lane Fringford Bicester

1:200 @A2



