



**1092 – 35 Church Lane
Clayton West**

**BS 5837:2012 Arboricultural
Report, Impact Assessment
and Method Statement**

David Vongyer

October 2024



Treefellas Arboriculture

Site: 35 Church Lane, Clayton West, HD8 9LY
Report: BS 5837:2012 Arboricultural Report, Impact Assessment and Method Statement
Reference: 1092
Client: David Vongyer
Issue Date: 25/10/2024
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Document Revision Record:

Revision No.	Author	Details	Date
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The Site survey and report have been carried out by Treefellas Arboriculture on behalf of the Client in accordance with the agreed terms.
This report is based on the information provided by the Client and on the observations made during any Site visits. Observations were limited based on the specific Site conditions, the weather and the time of year when any visits were made.
Treefellas Arboriculture makes no representation whatsoever concerning the legal significance of its findings or the legal matters referred to within this report.
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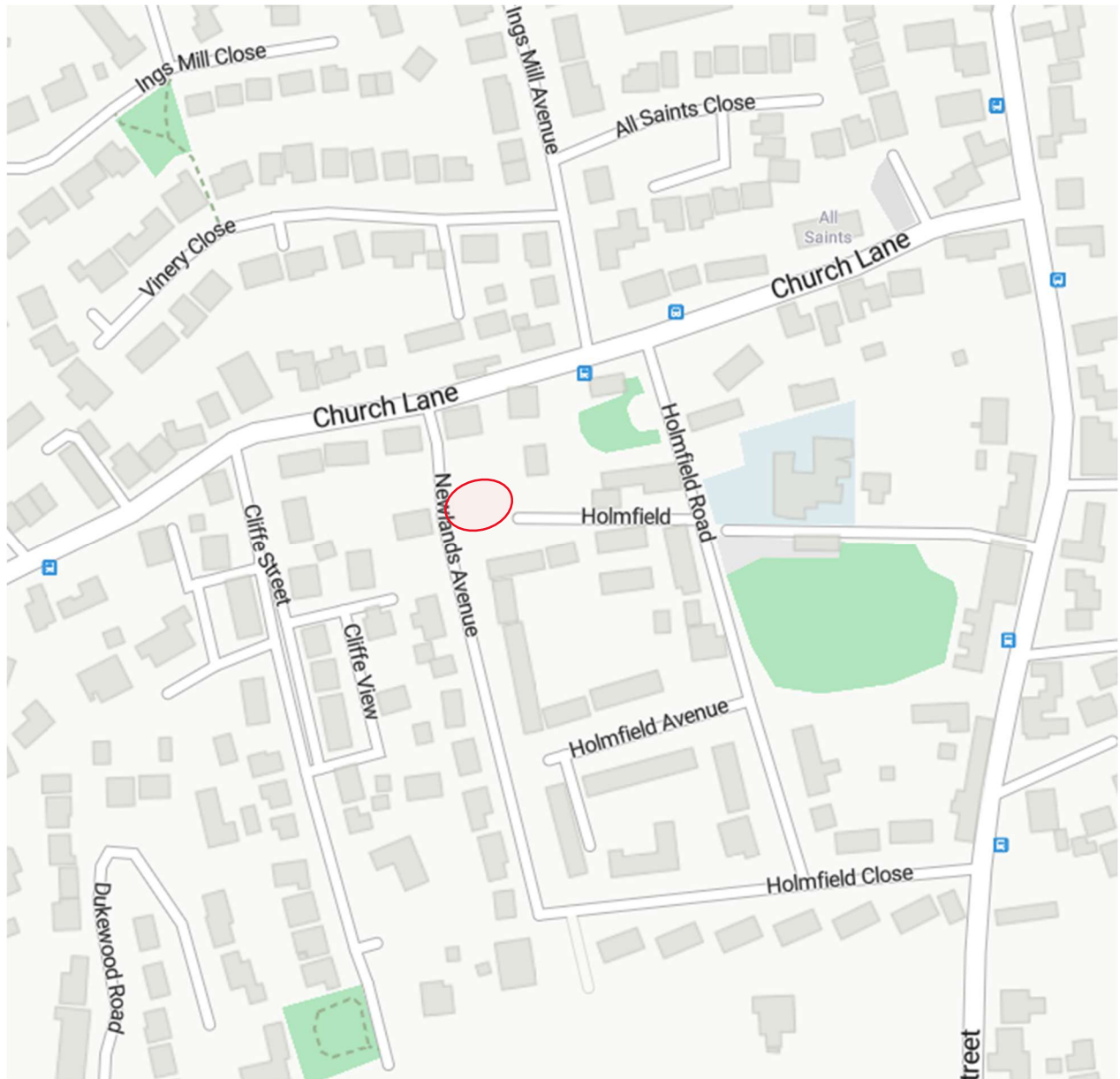
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1. Introduction

- 1.1 On behalf of David Vongyer (the Client), Treefellas Arboriculture Ltd has carried out a tree survey in accordance with BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations* at 35 Church Lane, Clayton West, HD8 9LY (the Site). The Site location is shown in Figure 1.

Figure 1: Location Plan



- 1.2 The survey was a ground based visual inspection carried out by Matt Pearson DipArb L4 TechArborA, Arboricultural Consultant at Treefellas Arboriculture on the 18th of October 2024.
- 1.3 During the survey the weather was clear and bright, which allowed for a thorough inspection of all trees and hedgerows. The deciduous trees at the Site were generally in full leaf.

- 1.4 The survey recorded all significant trees and hedgerows within the Site, and any beyond the Site boundary which may be affected by development proposed within it, recording a number of parameters including species, crown spread and Root Protection Area (RPA).
- 1.5 The information available on the Kirklees Council website (www.Kirklees.gov.uk) indicates that the Site is not located in a Conservation Area, however 2 trees included in the survey are protected by a Tree Preservation Order (TPO).
- 1.6 Reference to the Multi Agency Geographical Information for the Countryside (MAGIC) website indicates that no ancient woodland is present at the Site or within 15.0m of its boundaries.
- 1.7 The Client proposes the construction of a new driveway and carport in the south west corner of the garden area.
- 1.8 The proposed development will require the removal of 1 individual tree and will potentially have an impact on the roots, stems and canopies of retained trees and hedgerows unless suitable protection measures are put in place.
- 1.9 This report aims to provide detailed and independent arboricultural advice in the context of future Site development. The report discusses the potential arboricultural impacts that the proposed development may have on the surveyed trees and hedgerows and offers a range of protection measures and construction methodologies which should be adopted. These measures aim to prevent accidental damage and other adverse effects on the health of retained trees and hedgerows during the construction process.

2. Tree Survey Methodology

- 2.1 The survey recorded all individual trees or tree groups with one or more stem diameters of 75mm or more at a height of 1.5m above ground level, and any significant hedgerows, within the Site boundary. Any significant trees outside the boundary which could be significantly affected by the future development of the Site were also recorded.
- 2.2 For the purposes of this report a hedgerow is described as a line of trees or shrubs with canopies less than 5m wide which has been regularly managed through pruning. Where trees are present within a hedgerow that are significantly different in character from the remainder, these have been identified and recorded separately.
- 2.3 The following characteristics were recorded:
- Reference number
 - Species
 - Height
 - Crown spreads in four cardinal directions (north, east, south and west)
 - Minimum crown clearance
 - Number of stems
 - Stem diameter, generally measured at 1.5m above ground level or in accordance with BS 5827:2012
 - Estimate of the number of years that the tree is likely to remain suitable for retention
 - Age class
 - Overall condition
 - Categorisation in accordance with BS 5837:2012:
 - 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
 - Category A: Trees of high quality with an estimated remaining life expectancy of at least 40 years
 - Category B: Trees of moderate quality with an estimated remaining life expectancy of at least 20 years
 - 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
 - Sub-categorisation where appropriate in accordance with BS 5837:2012:
 - 1: Mainly arboricultural qualities
 - 2: Mainly landscape qualities
 - 3: Mainly cultural values, including conservation
 - General notes about physiological and structural condition and any management recommendations
- 2.4 All tree survey data has been based on an Ordnance Survey map base layer. Tree and hedgerow locations have been estimated using GPS technology and aerial imagery. Due to the inaccuracies this can cause, further confirmation of these estimated locations through a topographical survey may be required to ensure future design accuracy.

- 2.5 Where measurements have been estimated for trees with limited accessibility, this is highlighted with a hash (#) symbol on tree plans and in the Tree Survey Schedule.
- 2.6 Trees are living organisms that change over time. A re-inspection of all trees and hedgerows should be carried out if there have been any significant storm events, if significant Site works have taken place or if more than 12 months have passed since the survey was carried out.
- 2.7 The Root Protection Area (RPA) is calculated according to the formulae set out in BS 5837:2012. This is a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure should be treated as a priority.
- 2.8 Due to the specific topography of the Site and the presence of surrounding structures the RPA is likely to be a simplified representation of the actual morphology and disposition of roots. Any deviation in the shape of the RPA from the calculated circular shape will largely be based on conjecture and so should generally be avoided. However, where significant Site features are present that could clearly influence the disposition of tree root growth (e.g. water courses, building foundations and retaining walls), the RPA may be amended to take these features into account.

3. Protected Species

Bats

- 3.1 Mature trees can often contain cavities or hollows which provide potential roosting locations for bats. Bats and the places they use for shelter or protection (i.e. roosts) are protected under *The Conservation of Habitats and Species Regulations 2017* (Habitats Regulations 2017). They also receive legal protection under the *Wildlife and Countryside Act* (WCA) 1981. Consequently, causing damage to a bat roost constitutes an offence.
- 3.2 Generally, should the presence of a bat roost be suspected whilst completing works on any trees on Site then an appropriately licensed bat worker should be consulted for advice.

Birds

- 3.3 Trees and hedgerows can provide habitat for nesting birds which are protected under the *Wildlife and Countryside Act* (WCA) 1981. Some species are further protected by special penalties. This legislation makes it an offence to intentionally or recklessly damage or destroy an active bird nest or part thereof.
- 3.4 As the vegetation at the Site provides potential habitat for nesting birds all tree work should ideally be completed outside the peak nesting bird season (generally March to August inclusive).
- 3.5 If this is not possible then the vegetation should be subject to a nesting bird inspection by a suitably experienced ecologist prior to commencement of works. If active nests are identified then the vegetation, and a defined buffer zone, will need to remain in place until the young have fully fledged.

4. Tree Survey Results

- 4.1 The Site was a residential property located in the village of Clayton West, approximately 9.0km to the north west of Barnsley and 11.5km to the south west of Wakefield.
- 4.2 There was a dwelling at the north of the Site with gardens to the south. Access was via a hard surfaced private road to the east of the property off Church Lane.
- 4.3 The significant vegetation at the Site was located close to the south and southwestern boundaries.
- 4.4 The Tree Survey Schedule at Appendix 1 details the results of the tree survey and includes any management recommendations. The Schedule should be read in conjunction with the tree plans at Appendix 3 which show the location of each tree and hedgerow surveyed and the extent of their canopies and RPA.
- 4.5 The survey recorded 3 individual trees, 1 tree group and 1 hedgerow.
- 4.6 The sycamore (T001) was a fine example of the species with good future prospects. The lack of human intervention in the trees' development has allowed it to grow relatively undisturbed and has not allowed for the ingress of decay or dysfunction into the tree's vascular system.
- 4.7 The horse chestnut, (T002) although large and impressive, had long helical cracking on the stem, with exposed bark in areas. Although this is normal for the species it can be a possible means of ingress for dysfunction. In addition to this, there were several large historical pruning wounds at various points on the stem.
- 4.8 Due to this, irrespective of any future Site development, it would be advisable to remove significant deadwood from the crown, and for a safety assessment to be carried out for this tree by a suitably qualified and experienced arboricultural professional.
- 4.9 The mixed species group (G003) individual apple tree (T004) and hedgerow (H005) were found to be of relatively low value and should not pose a significant constraint on the development potential of the Site.

5. Arboricultural Impact Assessment

5.1 An Arboricultural Impact Assessment (AIA) has been carried out in accordance with BS 5837:2012, to evaluate the potential impacts the design proposals could have on the trees and hedgerows included in the survey. Where significant impacts have been identified, mitigation measures have been recommended.

5.2 BS 5837:2012 paragraph 5.4.2 states:

“The assessment should take account of the effects of any tree loss required to implement the design, and any potentially damaging activities proposed in the vicinity of retained trees. Such activities might include the removal of existing structures and hard surfacing, the installation of new hard surfacing, the installation of services, and the location and dimensions of all proposed excavations or changes in ground level, including any that might arise from the implementation of the recommended mitigation measures. In addition to the impact of the permanent works, account should be taken of the buildability of the scheme in terms of access, adequate working space and provision for the storage of materials, including topsoil.”

5.3 The Client proposes the construction of a new driveway and carport with associated landscaping. This AIA is based on the latest design proposals provided by the client.

Tree Retention and Removal

5.4 The design proposals indicate that the low value apple tree (T004), along with particularly small sections of G003 and H005, will need to be removed to facilitate the development, as they are situated in the footprint of the proposed driveway.

5.5 Due to the low value of T004 and the limited wider effect to G003 and H005, this negligible loss will not have a significantly negative arboricultural impact.

5.6 The western extent of G003 currently encroaches approximately 1.5m into the location of the new carport. This group will need to be cut back by 1.7m to allow for the construction of the carport.

5.7 The northern extent of H005 will need removing, to leave just the hawthorn hedge along the southern boundary. The remaining hedge will need pruning back close to the stems on the northern side to allow for the installation of the driveway and car port.

5.8 Mitigation for the removals can be achieved through the planting of suitable species in alternative garden locations following completion of the proposed development.

Tree Pruning

5.9 The pruning of trees should only be undertaken where essential, to avoid unnecessary wounds that can lead to bacterial or fungal infection. Pruning works should generally be undertaken during the winter months when the tree is dormant or during the summer months when the tree is fully active.

- 5.10 The hedge (H005) may need to be pruned back close to the stems on the northern side, in order to provide more working space during the construction of the proposed driveway and carport. As this is comprised mainly of hawthorn, this would be unlikely to affect the long-term prospects of this arboricultural feature.
- 5.11 Tree pruning should be carried out by a suitably qualified and insured arboricultural contractor and in accordance with the recommendations of BS 3998:2010 *Tree work – Recommendations*.

Potential Impacts from Construction Operations

- 5.12 Where proposed operations encroach beneath the canopy or into the RPA of retained trees and hedgerows there is the potential for damage to occur if measures are not implemented to provide adequate protection.
- 5.13 Construction of the new driveway and carport is proposed within the RPA of the retained trees T002 and T003, as shown on the Tree Impacts Plan at Appendix 3.
- 5.14 The potential impacts this may have on tree roots likely to be present in this area can be overcome through the use of specialist construction techniques such as an above ground Cellular Confinement System for the driveway and the use of screw piles to support the posts for the carport.
- 5.15 Due to the particularly close proximity of the northeastern carport post to the stem of T002, it is recommended that a trial pit is dug in this location to ensure that there are no significant roots likely to be damaged by the screw pile here. This should be carried out using hand tools only and under the supervision of the project arboriculturist.
- 5.16 If significant roots are found in this location, it may be necessary to slightly adjust the location of the car port to avoid root damage.
- 5.17 Due to the height and extent of the tree canopy in the direction of the proposed carport, there is not a significant potential for tree branches to be impacted during the construction works.
- 5.18 Works beneath canopy spreads or within the RPA of retained trees and hedgerows have been detailed as part of the Arboricultural Method Statement (AMS) at Appendix 3.

Mitigation and Protection

- 5.19 The retained trees will need protecting from development operations to ensure that they are not negatively impacted by development operations. This has been detailed as part of the AMS at Appendix 3.
- 5.20 Any works that are proposed beneath the canopy or within the RPA of retained trees and hedgerows must be carried out as specified in the AMS. It is likely that these works will need to be supervised by the Project Arboriculturist so that any tree related issues that may occur can be suitably dealt with.
- 5.21 Any replacement tree planting and establishment should be carried out in accordance with BS 8545:2014 *Trees: from nursery to independence in the landscape – Recommendations*.

6. References

- BS 3998:2010 *Tree work – Recommendations*. ISBN 978 0 580 53777 6
- BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*. ISBN 978 0 580 69917 7
- BS 8545:2014 *Trees: from nursery to independence in the landscape – Recommendations*. ISBN 978 0 580 713170
- Littlefair P. (2011). *Site layout planning for daylight and sunlight: a guide to good practice (BR 209)*. ISBN 978 1 84806 178 1.
- Volume 4 National Joint Utilities Group (NJUG) *Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees*. Issue 2: 2007. www.njug.org.uk.

Appendix 1: Tree Survey Schedule

Table 1: Tree Survey Schedule

Key:	Symbols Used	Age Class	SLE	Comments	Management	Category
	< = less than ~ = approximately > = greater than # = estimated	Young, Semi mature, Early mature, Mature, Veteran or Ancient	Estimate of Safe Life Expectancy (<10 Years, 10+ Years, 20+ Years or 40+ Years)	AGL - Above Ground Level MS - Multi-Stemmed TD - Trunk Division (height in m) DED - Dutch Elm Disease ADB - Ash Die Back AHC (1, 2, 3 or 4) - Ash Health Class	<i>Tree works that are recommended regardless of future development are in Italics</i> Tree works that are required to facilitate the proposed development are in Bold	BS 5837:2012 Retention Categories: U - Unsuitable for retention A - High B - Moderate C - Low Sub-categories: 1 - Mainly arboricultural qualities 2 - Mainly landscape qualities 3 - mainly cultural values

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Overall Condition	Comments	Management	Category	RPA Radius (m)	RPA Area (m ²)
					N	E	S	W									
T001	Sycamore (<i>Acer pseudoplatanus</i>)	17.0	1	720	7.0	3.0	7.5	5.0	3.0	Semi Mature	40+ Years	Good	Plastic wrapped around stem at 1 to 2 m to encourage creepers to grow up stem. Minor deadwood throughout crown. Occasional pruning wound in upper crown. Suppressed to the east.		A1	8.6	232
T002	Horse Chestnut (<i>Aesculus hippocastanum</i>)	21.0	1	1,030	6.0	8.5	7.5	2.5	4.0	Mature	20+ Years	Fair	Helical cracking on stem from ground level on the south west side to approx 3m on the south side. Bark damage continuing to a height of around 8m on south east side. Large pruning wounds from 2m to 7m. Minor bark loss at various heights within canopy. Hanging dead limb low in canopy. Deadwood over 150mm diameter in upper central crown.	<i>Removal of significant deadwood and safety inspection recommended</i>	B1	12.3	480

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Overall Condition	Comments	Management	Category	RPA Radius (m)	RPA Area (m ²)
					N	E	S	W									
G003	Holly (<i>Ilex aquifolium</i>) Yew (<i>Taxus baccata</i>) Cotoneaster (<i>Cotoneaster sp.</i>)	4.0	>10	70 Avg	See Plan				0.0	Young	40+ Years	Good	Small group of shrubs. Maintained as a hedge on the west.	Remove western 1.7m to facilitate development.	C2	-	-
T004	Apple (<i>Malus sp.</i>)	6.0	1	150	2.5	3.0	2.5	2.5	2.0	Early Mature	40+ Years	Good	Previously topped at various heights. Minor deadwood throughout.	Remove to facilitate development.	C1	1.8	10
H005	Elder (<i>Sambucus nigra</i>) Sycamore (<i>Acer pseudoplatanus</i>) Hawthorn (<i>Crataegus monogyna</i>) Yew (<i>Taxus baccata</i>)	5.0	>10	50 Avg	See Plan				0.0	Semi Mature	40+ Years	Good	Primarily hawthorn with self seeded sycamores. Previously managed as a hedge at around 2m, since lapsed.	Remove northern section to facilitate development. And prune back to allow for working space.	C2	-	-

Appendix 2: Site Photographs



Photo 1: T001 and T002 from the north



Photo 4 G003 from the east



Photo 2: T001, from the east



Photo 5: T004 and surrounding shrubs from the north east.

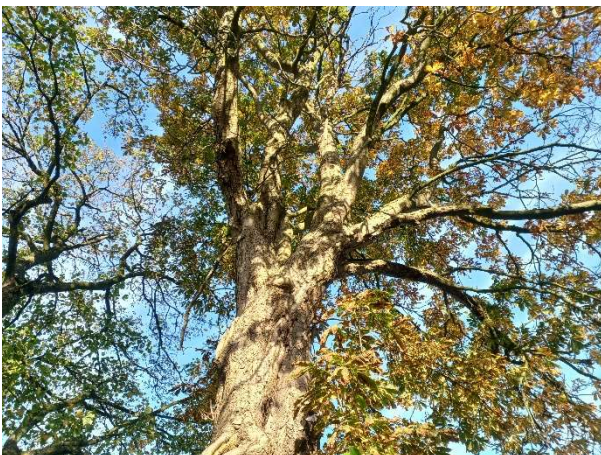
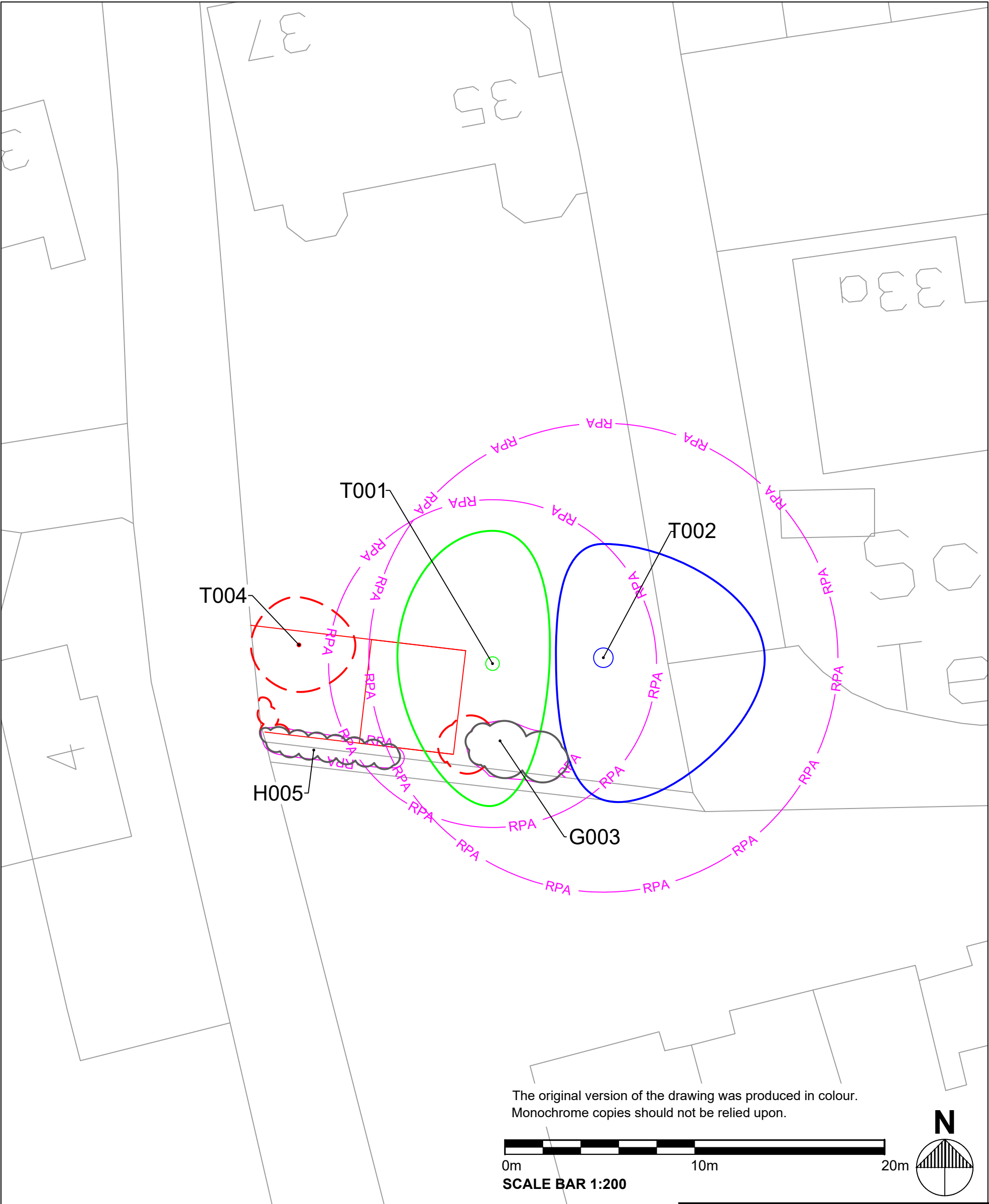


Photo 3: T003 from the south

Appendix 3: Tree Plans



GENERAL NOTES

- Refer to associated arboricultural report produced by Treefellas Arboriculture.
- Based on topographic survey and development proposals provided by the client.
- Do not scale from this drawing, check all dimensions on site.
- Please report any discrepancies or omissions to Treefellas Arboriculture.
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KEY

Stem Location

Tree Categories (BS 5837:2012)

Category A Trees

Category B Trees

Category C Trees

Tree to be Removed

Root Protection Area (RPA)

Tree Protection Fencing

Outlane Farm

Hathersage

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Project Details

1092 - 35 Church Lane Clayton West

Drawing Title

Figure 3 - Tree Impacts Plan

Drawing Number

1092-TAL-02

Drawn By

M Pearson

Date

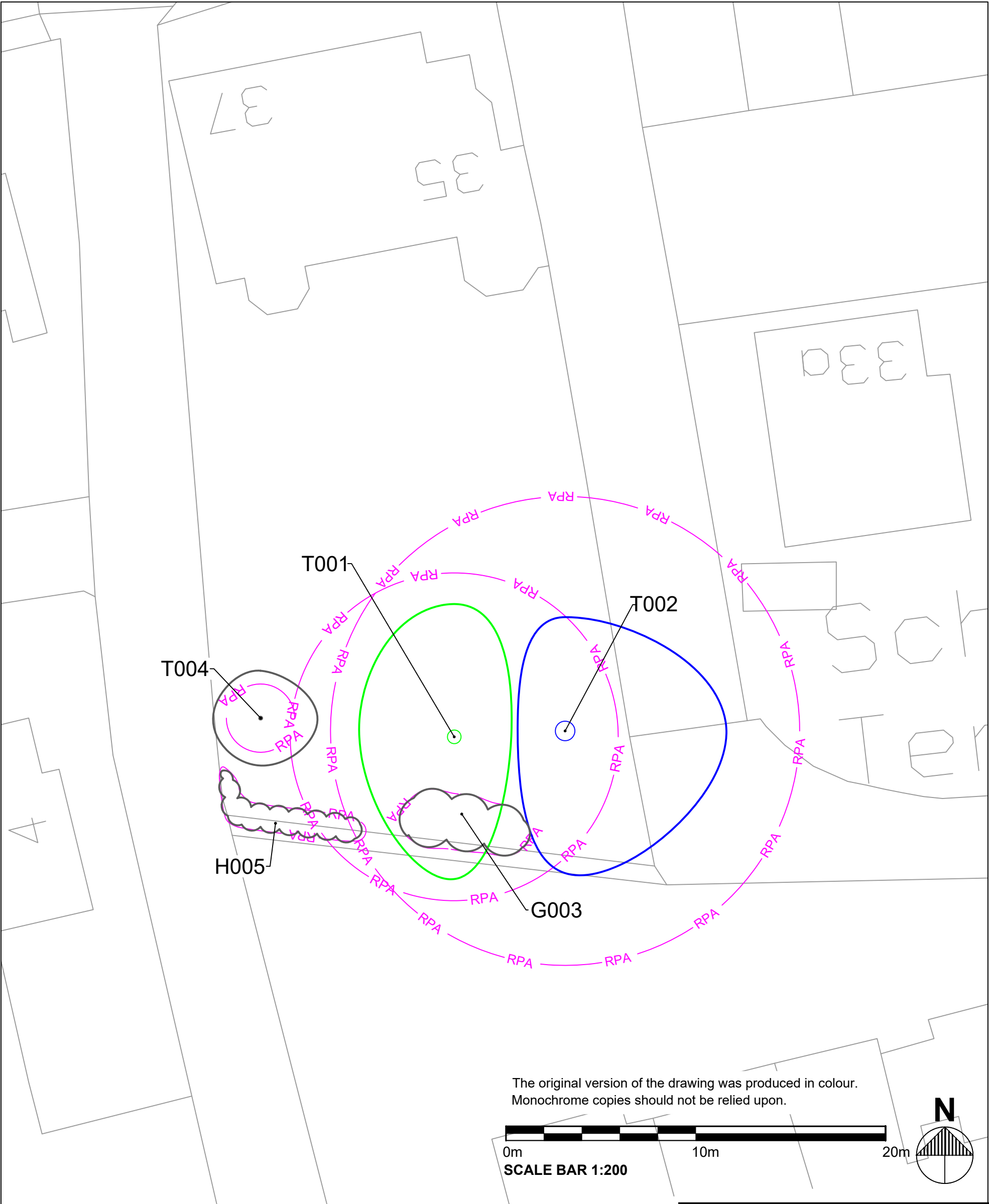
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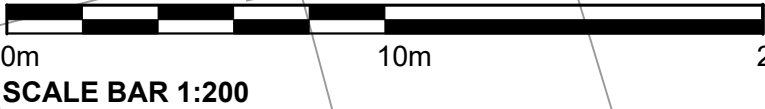
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Revision

-



The original version of the drawing was produced in colour.
Monochrome copies should not be relied upon.



GENERAL NOTES

- Refer to associated arboricultural report produced by Treefellas Arboriculture.
- Based on an Ordnance Survey map base layer.
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KEY

- 
Stem Location
- 
Location Estimated

Tree Categories (BS 5837:2012)

- 
Category A Trees
- 
Category B Trees
- 
Category C Trees
- 
Category U Trees

- 
Root Protection Area (RPA)



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Project Details

1092 - 35 Church Lane Clayton West

Drawing Title
Figure 2 - Tree Constraints Plan

Drawing Number
1092-TAL-01

Drawn By	Date	Scale	Revision
M Pearson	25/10/24	1:200 at A3	-

Introduction

An Arboricultural Method Statement (AMS) has been prepared in accordance with BS 5837:2012, to ensure that a precautionary approach is adopted towards tree protection throughout the proposed Site development.

The AMS should be read in conjunction with the associated arboricultural report produced by Treefellas Arboriculture. It aims to demonstrate that all Site operations can be undertaken with minimal risk of adverse impact to retained trees, by providing details of specific measures and methodologies to be adopted in relation to tree protection at the Site.

No equipment, machinery or materials shall be brought onto the site in connection with the development until this AMS has been submitted to and approved in writing by the Local Planning Authority (LPA).

Schedule of Specific Site Events

Operations on site that have the potential to impact the retained trees and hedgerows should be completed in the following sequence:

- Tree and hedgerow removal and pruning works
- Installation of tree protection fencing
- Construction operations including the installation of above ground cellular confinement system and construction of specialist footings.
- Removal of tree protection measures

Tree and Hedgerow Removal and Pruning

Before the commencement of any development operations or the storage of plant, machinery and materials on site, the removal of T004, the removal of sections of G003 and H005 and pruning of the northern side of H005 should be carried out. These works are detailed in the Tree Survey Schedule at Appendix 1 of the associated arboricultural report.

All tree works should be carried out by a suitably qualified and insured arboricultural contractor and in accordance with of BS 3998:2010 Tree work – Recommendations.

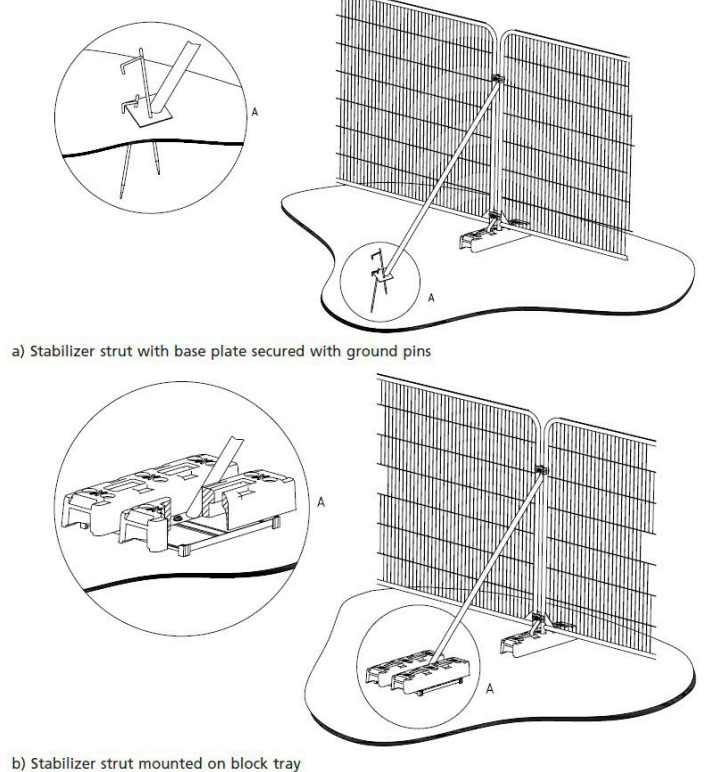
It is recommended that trees should be checked in advance of any works by a suitably qualified professional to ensure there is no disturbance to nesting birds or roosting bats.

Tree Protection Fencing

Before the commencement of any development operations or the storage of plant, machinery and materials on Site, the tree protective fencing must be installed as shown. Where possible this fencing should exclude all site activities from the RPA of retained trees, creating a sacrosanct Construction Exclusion Zone (CEZ).

It should be confirmed by the Project Arboriculturist that the fencing has been correctly set out on Site prior to the commencement of any other operations.

The default specification for tree protection fencing can be provided if needed, however in the case of this development it is believed that the alternate fencing specification will be more appropriate, if agreed by the LPA.



An example of an alternative specification is 2.0m tall, welded mesh panels on rubber or concrete feet, as below. In such cases, the fence panels should be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The distance between the fence couplers should be at least 1.0m and should be uniform throughout the fence. The panels should be supported on the inner side by stabilizer struts, which should be attached to a base plate secured with ground pins or mounted on a block tray.

All-weather notices must be attached to the fencing to indicate that operations are not permitted within the CEZ, with words such as "CONSTRUCTION EXCLUSION ZONE – NO ACCESS".

Once the tree protection fencing has been installed it must not be altered or removed without prior consultation with the Project Arboriculturist. If the tree protection fencing needs to be re-positioned to allow for development operations to continue, this must be carried out under the supervision of the project arboriculturist and with prior consent from the LPA.

The tree protective fencing must remain in place until all construction operations on site have been completed and all plant and machinery has been removed.

Design and Location of Piles for New Carport

The posts to support the new carport are within the RPA of the retained trees T001 and T002. The excavations which could be required here may lead to significant damage to the rooting structure of the trees. These footings must therefore be constructed utilising a specialist construction technique such as screw pile footing.

The design of the piles will need to be specified by a structural engineer but must be suitable to adequately support the structure and require only minimal excavations, which can be located so as to avoid damage to any significant roots.

The north eastern post is located particularly close to the stem of T001. To avoid the potential for damage to larger roots which could be present here, the precise location for the pile must be determined through the digging of a trial hole.

This must be carried out using hand tools only and under the supervision of the Project Arboriculturist. A depth of 300mm will be adequate to ascertain the presence or otherwise of significant roots in this particular instance.

Installation of New Driveway

The new driveway is located within the RPA of the retained trees T001 and T002. To ensure any roots that may be present are suitably protected throughout construction, the hard surface must be installed in line with the following no-dig methodology:

Significant excavations must not occur within the RPA, however the removal of surface vegetation is allowed, to a maximum depth of 50mm.

If any individual roots become exposed that are smaller than 25mm diameter they may be pruned back, making a clean cut with a suitable sharp tool. Roots occurring in clumps or of 25mm diameter and over should be retained where possible and worked around. Where severance of these roots is unavoidable, this must only be carried out following consultation with the Project Arboriculturist, as such roots might be essential to the tree's health and stability.

It may be determined that the location of the hard surfaces must be altered to allow for the retention and adequate protection of significant roots.

The exposed soil must be covered with a permeable geotextile membrane, laid out in accordance with the manufacturer's recommendations and temporarily held in place with pins, stakes or weights.

A three-dimensional Cellular Confinement System (CCS) must then be laid across the entire area and held in place. The CCS must be specified by the manufacturer or site engineer, and be suitable for the site and the loads that are expected to be applied. Soft soils may require an additional sub-base beneath the CCS for it to be effective.

The CCS will be filled with a 'no fines' aggregate to the manufacturer's specification, and lightly rolled or whacked to ensure cohesion. Any heavy plant or machinery used must be located outside of the RPA or on suitable ground protection and beyond the canopy of any retained trees.

Installation of Utilities and Services

Where possible any above and below ground utilities and services should be directed away from the retained trees and hedgerows. Above ground services should be routed away from tree canopies, allowing sufficient space to allow for likely future canopy growth. Below ground services should be grouped together and routed beyond the RPA of retained trees and hedgerows.

Where the below ground routing of utilities or services through the RPA is unavoidable, this must be installed in accordance with BS 5837:2012 clause 7.7.2 and NJUG 10: *Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees* (Issue 2).

Trenchless insertion methods such as microtunnelling, directional drilling or pipe ramming may be required, with entry and retrieval pits located outside of the RPA, to avoid causing damage to significant roots.

Management of Any Exposed / Damaged Roots

If works in close proximity to retained trees are carried out in line with the specifications detailed in this report, the potential for damage to significant roots is low. However, on occasion, approved works that are close to or within the RPA of retained trees can result in roots becoming exposed or accidental root damage occurring.

If any roots become exposed which are smaller than 25mm diameter they can be pruned back if required, using a suitable sharp tool such as secateurs or a handsaw. However, roots occurring in clumps or of 25mm diameter and over should be retained where possible and worked around.

Where the severance of larger roots is unavoidable, this must only be carried out following consultation with the Project Arboriculturist, as such roots might be essential to the tree's health and stability.

Roots that are heavily damaged or severed during approved works may need to be pruned back using a suitable sharp tool. The cut must be made cleanly, leaving the smallest surface area possible, and beyond any obvious damage, towards the tree that the root is likely to have come from. If it is unclear which direction the root has grown from, the root should be pruned back to both sides of the damage/severance.

A health and safety assessment should be carried out or a regular monitoring regime put in place for trees that have incurred damage to roots in close proximity to their stems or where the damaged roots are 100mm diameter or greater. Such damage could lead to instability or a decline in health and condition.

Exposed roots or roots that have been pruned should be immediately recovered with earth to prevent desiccation. If this is not possible, they should be wrapped in hessian sheets which are dry in winter, wet in summer. These should be removed prior to backfilling.

Landscaping Works

Where soft landscaping is proposed within the RPA of retained trees, excavations should be kept to the minimum required to provide adequate conditions for the establishment of new shrubs and trees. Excavations should be carried out carefully using hand tools only, avoiding the severance of any roots larger than 25mm diameter.

Ground levels within the RPA should generally not be altered to avoid the potential for damage to tree roots. Roots are considered to be primarily within the top 600mm of the soil. Any excavations have the potential to damage or remove part of the root system and could affect the vigour or stability of the tree. Conversely, increasing the ground level can compact the soil, potentially suffocating the roots and causing them to die off. If minor level changes are unavoidable as part of an approved landscaping scheme, the advice of the Project Arboriculturist must be sought.

Any landscaping works that are within the RPA of retained trees or will require the tree protection fencing to be temporarily breached must be carried out in consultation with the Project Arboriculturist.

Additional Precautions

Consideration should be given to site operations outside of the CEZ that could indirectly impact the retained trees, including the provision of adequate space for site cabins, welfare facilities and other temporary structures.

Site operations should take sufficient account of wide or tall loads in order that they can operate without coming into contact with retained trees. Even very minor damage to branches can lead to significant tree dysfunction.

Operations in close proximity to tree canopies should be carried out utilising the smallest machinery appropriate for the task, and additional banksmen should be present to ensure adequate clearance is maintained at all times.

Fires on sites should generally be avoided. Where fires are unavoidable, they should not be lit in a position where heat could affect the foliage or branches of retained trees. The potential size of the fire and the wind direction should be taken into account when determining its location, and it should be attended at all times.

Any materials that could contaminate the ground around tree roots, such as fuels, oils or cement, should be stored and handled well away from the outer edge of the RPA.

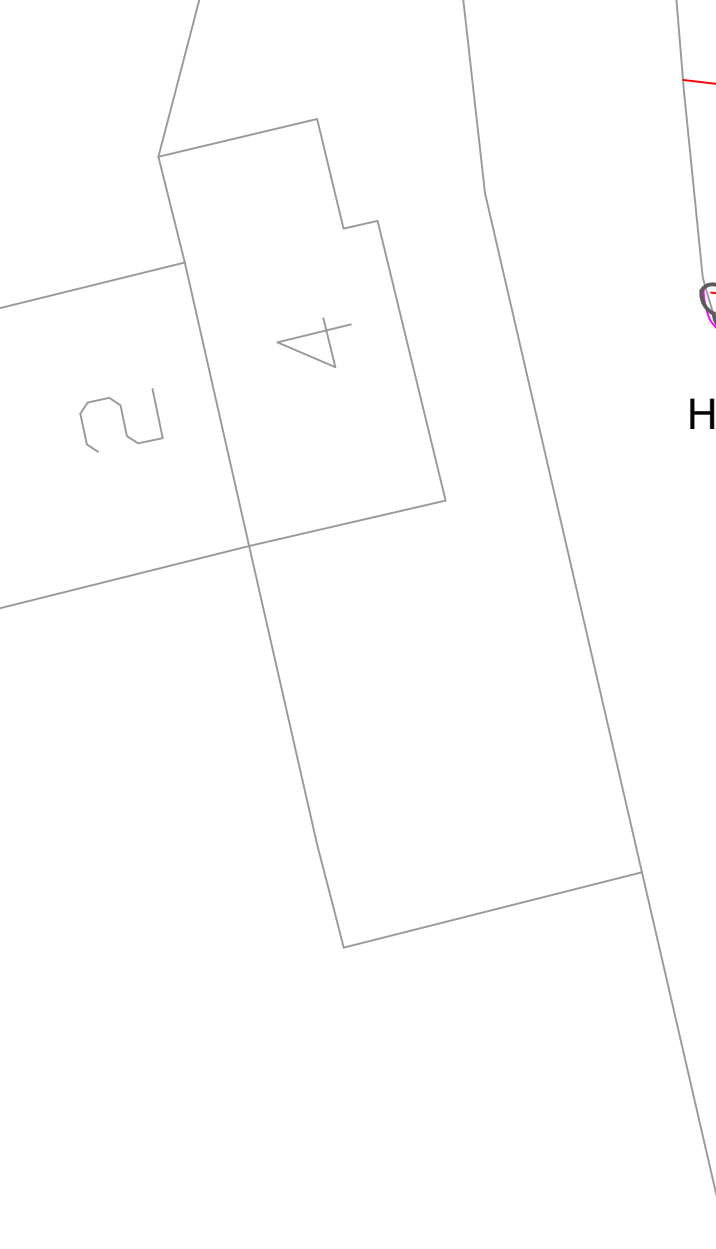
Installation of Fencing

Fencing is to be installed within the RPA of the retained trees T001 and T002. This must consist of posts and panels or rails only as trenched footings are likely to cause damage to significant roots. The holes for posts should be kept to the minimum depth required and excavated using hand tools only.

Fence posts must be erected a minimum of 1.0m from tree stems. The post locations may need adjusting if significant roots are uncovered, so that the roots remain unaffected. If wet concrete is to be used, post holes should be lined with an impermeable membrane to prevent soil contamination close to tree roots.

The fencing alignment must allow for a minimum distance of 0.5m between any tree stem and the fence, providing sufficient room for future growth and minimising the risk of potential conflicts between the fence structure and tree stems.

This will require the tree protection fencing to be temporarily breached and must therefore be carried out in consultation with the Project Arboriculturist.



GENERAL NOTES

- Refer to associated arboricultural report produced by Treefellas Arboriculture.
- Based on topographic survey and development proposals provided by the client.
- Do not scale from this drawing, check all dimensions on site.
- Please report any discrepancies or omissions to Treefellas Arboriculture.
- Where information has been provided by a third party, Treefellas Arboriculture cannot accept any liability for its content or accuracy.
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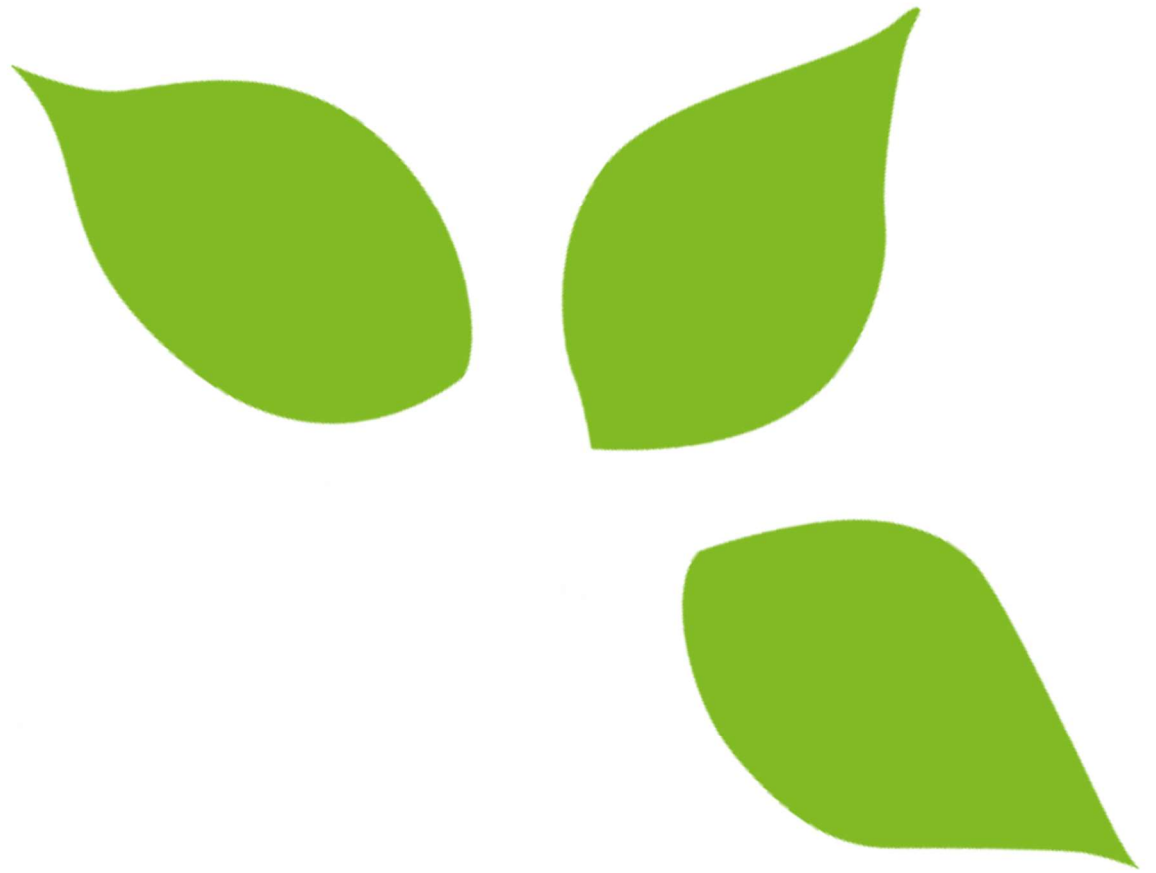
- Stem Location
- # Location Estimated

Tree Categories (BS 5837:2012)

- Category A Trees
- Category B Trees
- Category C Trees

- Root Protection Area (RPA)
- Tree Protection Fencing

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