

Gartree 2

Arboricultural Impact Assessment and Method Statement

On behalf of The Ministry of Justice



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Project Title: Gartree 2

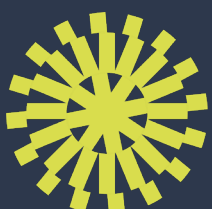
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Summary

- S.1. This Arboricultural Impact Assessment and Method Statement has been prepared by Tyler Grange Group Limited on behalf of Mace Group to accompany an Outline Planning Application for a new prison development on land adjacent to HMP Gartree.
- S.2. This report provides details of a tree survey and assesses the impact of the proposed development towards existing trees. This report has been guided by the recommendations set out within the British Standard BS5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendations'.
- S.3. The site is located to the south of HMP Gartree and comprises of multiple agricultural fields under arable use. Trees are present at the field boundaries in the form of tree lines and hedgerows, and groups of denser tree cover. No ancient woodland, ancient trees, veteran trees or high value tree (Category A) are present on the site to be affected by the development.
- S.4. The development requires the removal of low and moderate value trees located internally. The tree removals required are necessary for the development of the main prison area and its associated parking. New tree planting in the form of woodland and amenity trees will be provided to serve as compensation for the trees removed. The new area of planting will provide an increase in canopy cover on the site subject to its successful implementation.
- S.5. This report also identifies where construction work will be required near to trees and provides recommendations to protect them by way of a Tree Protection Plan and Arboricultural Method Statement. Should consent be granted, it is recommended that the protection of trees as detailed within this report is secured by way of a suitably worded planning condition.



Section 1: Introduction

Purpose

- 1.1 This Arboricultural Impact Assessment and Method Statement has been prepared by Tyler Grange Group Ltd on behalf of The Ministry of Justice to accompany a planning application that seeking outline planning permission for a new Category B prison on land adjacent to HMP Gartree in Leicestershire. The description of the proposed development is:

"Outline Planning Application with all matters reserved except for access and scale for the construction of a new Category B prison of up to 82,555sqm GEA within a secure perimeter fence together with access parking, landscaping and associated engineering works on land adjacent to HMP Gartree, Gallow Field Rd, Market Harborough, Leicestershire LE16 7RP".

- 1.2 The proposed development and works are shown on the Proposed Site Plan at **Appendix 1**.
- 1.3 This report provides details of a tree survey of the site and assesses the impact of the proposed development towards existing trees. This report has been guided by the recommendations set out within the British Standard BS5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations' (hereafter referred to as BS5837).
- 1.4 The application is to be submitted to Harborough District Council (HDC). HDC local planning policy and national planning policy pertinent to trees is set out at **Appendix 2**.



Section 2: Tree Survey Findings

Site Description

- 2.1 The site is centred on national grid reference SP 70640 88741 and the survey extended across the main prison area as shown at Figure 1 below and on the **Tree Constraints Plan (TCP) (See Plan 1)**. The application red line boundary includes additional land to the north and west of the area surveyed known as the northern and western area as shown at Appendix 1. These areas have not been subject to a tree survey as the trees will not be affected by the development as it includes new planting and habitat creation only. The site is located south of the HMP Gartree development and comprises a series of agricultural fields under arable use.



Figure 1. Indicative Survey Boundary (Imagery © Google Maps, 2021).

Tree Survey Summary

- 2.2 A tree survey was completed in accordance with BS5837 and the methodology as detailed at **Appendix 3**. The survey was completed by a suitably qualified tree surveyor on 23rd November 2020. A measured topographical survey (supplied by others) was used to inform the location of trees and their surrounding context.
- 2.3 The distribution of the trees and hedgerows surveyed is illustrated on the **Tree Constraints Plan (TCP) (See Plan 1)**, which includes plotted details of their constraints to new development in accordance with BS5837, including:



- Tree quality gradings¹;
- Root Protection Areas (RPAs)²;
- Tree canopy spreads³; and
- Tree shading⁴.

2.4 Findings for each of the trees surveyed are detailed in the Tree Survey Schedule (**See Appendix 5**). This provides a tabulated record of the trees surveyed, including; reference numbers, species composition, tree dimensions, life stage, physiological and structural condition, and the arboricultural value of each survey entry.

2.5 A total of 55 (T1 – T55) trees were surveyed as individual trees and 16 tree groups (G1 – G16) and 3 hedges (H1 – H3) were also identified. The tree cover comprises a mix of field boundary individual trees and groups, hedgerows, internal stands of dense scrubs/shrubs and roadside trees.

Tree Category Grading

2.6 The trees surveyed have been categorised using the ‘cascade chart for tree quality assessment’ (**See Appendix 4**) recommended by the BS5837. The grading system allows informed decisions to be made concerning the design and impact of the development in relation to the arboricultural value of the trees surveyed.

2.7 A breakdown of category gradings across the trees, groups and hedgerows surveyed is provided in **Table 1** below.

Table 1: Category Grading of Arboriculture Features

| | Category U | Category A | Category B | Category C |
|-------------------------|------------|------------|--|---|
| Individual Trees | T31 | None | T1, T3, T4, T7, T8, T11, T12, T14, T15, T16, T17, T18, T28, T32, T35, T36, T37, T38, T39, T40, T41, T42, T43, T45, T46, T47, T48, T49, T52, T54, T55 | T2, T5, T6, T9, T10, T13, T19, T20, T21, T22, T23, T24, T25, T26, T27, T29, T30, T33, T34, T44, T50, T51, T53 |
| Groups of Trees | None | None | G5, G13, G14, G15 | G1, G2, G3, G4, G6, G7, G8, G9, G10, G11, G12, G16 |
| Hedges | None | None | H3 | H1, H2, |
| Woodlands | None | None | None | None |

¹The value of arboricultural features surveyed in accordance with the methodology set-out Appendix 3.

²a 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 is treated as a priority. See further explanation at Appendix 3.

³Dimensions of the trees crown spread and clearance from ground level. See further explanation at Appendix 3.

⁴Shade cast by existing trees which may affect the availability of sunlight and daylight within a new development. See further explanation at Appendix 3.



- 2.8 None of the trees surveyed were considered to be of 'high' arboricultural value (Category A) and no tree veteran or ancient trees in terms of age class were identified. There are therefore no trees of such significant merit that represent a major constraint to development on the site.
- 2.9 Trees of moderate arboricultural value (Category B) are denoted by a 'Blue' tree canopy outline as illustrated on the Tree Constraints Plan. There are several individuals of groups of trees of moderate value present which provide a well-treed setting the western field parcel, providing established features at site boundaries and internally as linear field boundary features. Groups G5, G13, G14 and G15 form mature linear features internally however lack the special quality to warrant high value classification.
- 2.10 Trees of low arboriculture value (Category C) trees are denoted by a 'Grey' tree canopy outline as illustrated on the TCP. These includes trees and groups with limit arboricultural merit or those that provide transient benefits which may be readily replaced in the existing context. The subsequently present a reduced arboricultural constraint to the emerging design. The retention of low value trees is recognised as desirable where possible as they contribute to the overall extent of tree cover across the site, however, their loss is considered more appropriate where it allows the retention of moderate value trees. This includes dense groups of low-level shrubs and self-seeded trees established internally to the north-east of the site (groups G7, G8, G9, G10, G11 and G12).
- 2.11 A single crack willow tree (T31) is recommended for removal irrespective of any development on the site (Category U) and is identified by a 'Red' tree canopy outline as illustrated on the TCP. The tree has partially collapsed and has minimal future retention value.

Tree-related Designations

- 2.12 Following a background check of available online mapping as well as email confirmation (conducted on the 25th November 2020), the presence or absence of tree-related designations is detailed in **Table 2** below.

Table 2: Tree-related Designations

| Designation Type | Tree Reference Numbers |
|-------------------------------|------------------------|
| Tree Preservation Order | None |
| Conservation Area | None |
| Ancient Woodland ⁵ | None |
| Woodland Habitat ⁶ | None |

⁵ Ancient woods are areas of woodland that have persisted since 1600 in England and Wales, and 1750 in Scotland. The Magic Maps website <https://magic.defra.gov.uk/MagicMap.aspx> has been used to search for ancient woodland on or adjacent to a site.

⁶ Spatial data of woodlands identified under the Priority Habitat Inventory (England) Published by Natural England. The Magic Maps website <https://magic.defra.gov.uk/MagicMap.aspx> has been used to search for woodland on or adjacent to a site.



Section 3: Arboricultural Impact Assessment

- 3.1. The baseline tree constraints as detailed previously formed part of the overall design phase of the proposed development layout with respect to minimising the impact of arboricultural features whilst meeting the requirements of the prison layout and associated infrastructure. An arboricultural impact assessment has been completed based on a composite overlay of the proposed Site Plan and the TCP. The overlay is illustrated on the Tree Retention and Removal Plan (TRRP) and Tree Protection Plan (TPP) located at the rear of this report (**See Plan 2 and 3**).

Tree Retention and Removal

- 3.2. The TRRP (**See Plan 2**) identifies existing trees to be retained, removed, or pruned to facilitate the development and associated new landscaping. Further details are provided in **Tables 3** below.

Table 3: Proposed Tree Removal

| Category | Grading | Individual trees | Groups of trees | Hedgerows | Woodland groups |
|------------|---------|---|------------------------------------|-----------|-----------------|
| Category A | | None | None | None | None |
| Category B | | T7, T8, T28, T32, T52 | G5, G13, G14, G15 | None | None |
| Category C | | T6, T19, T20, T21, T22, T23, T4, T25, T26, T27, T29, T30, T50, T51, T53 | G6, G7, G8, G9, G10, G11, G12, G16 | H1 | None |
| Category U | | T31 | None | None | None |

- 3.3. The proposed site layout requires the removal of the majority of the site's internal tree cover. This is considered unavoidable to achieve the layout and functionality of the prison facility. The site boundary tree cover will be largely retained, except for the removal of 3 trees to facilitate the new access. The extent of tree removal represents a low to moderate arboricultural impact and in response to this, new tree planting is proposed as compensation.

New Tree Planting

- 3.4. The proposed Site Plan (**See Appendix 1**) shows where new soft landscaping will be delivered across the site. A Comprehensive Landscape Masterplan is also being submitted separately as part of the planning application. New tree planting is proposed in the form of formal landscape planting throughout the car park area and the creation of new woodlands, including a substantial woodland belt along southern and eastern boundaries and a section of new woodland to the west of the proposed car park. New tree lines will also be planted in the northern area. The extent of new canopy cover will exceed the extent of canopy cover being removed to facilitate the development.

Tree Pruning

- 3.5. Two sections of group G2 and G3 needs to be removed to allow for the construction of the parking area. These works will consist of pruning or selective removes to allow for the required space as indicated on the TRRP.



Retained Trees and Construction Mitigation

- 3.6. The proposed layout has been assessed to review the impacts it may have on the retained trees. It has been found that there are three areas of proposed surfacing within the RPAs of retained trees, as summarised below;
- 3.7. The proposed parking area is shown within the RPAs of two category B Ash trees T54 & T55 growing along the southern boundary and one Crack willow T14. The incursions have been measured at 9.4%, 15% and 13% respectively. As per the recommendation of BS5837:2012 section 7.4.2.3, the new permanent hard surfacing does not exceed 20% of any existing unsurfaced ground within the RPAs for both these trees and therefore its impact can be appropriately mitigated.
- 3.8. Within the RPA of Poplar tree, T17 is a proposed substation that is needed so the existing overground cables can be removed. The possibilities for its location are very limited leaving this as a more favourable option on the site. To limit the impact on the neighbouring tree the foundation for the station will be constructed in a sensitive manner.
- 3.9. A footpath link is required from the northern end of the car park and will be routed through the RPAs of trees T15, T16 and T17. All incursions have been measured to be less than 13% of the notional rooting area. To avoid root damage, a no-dig approach must be taken, limiting the impact on the trees. The use of a three-dimensional cellular confinement system, such as 'Cellweb' is an acceptable approach, which aims to fulfil the above design criteria. This system maintains the passage of oxygen and water to root systems; avoids root loss through severance or asphyxiation and minimises the potential for soil compaction.
- 3.10. Trees to be retained will remain unaffected by the proposed development subject to the adoption of tree protection measures during the construction phase which addressed the incursion as described above. The TPP and Arboricultural Method Statements (**See Plans 3 and 4**) details the measures for the protection of trees in accordance with BS5837.

Conclusion

- 3.11. No high value tree, or irreplaceable habitats in the form of trees are present on the site to be affected by the development.
- 3.12. The proposed development will result in the removal low and moderate value trees located internally. This is considered unavoidable and will be replaced in the form of new woodland belts at the boundaries where they are largely devoid of trees. The retention of existing trees and the extent of new planting suggests the scheme will be set within a well-treed environment, which will offer additional diversity benefits, in terms of additional tree canopy cover, and diversity in composition and species.
- 3.13. The proposed development is considered supportable from an arboricultural perspective subject to the implementation of compensatory tree planting and the adoption of tree protection measures for existing trees as detailed within this report.
- 3.14. It is recommended that the Tree Protection Plan and Arboricultural Method Statement is secured by way of a suitably worded planning condition.



Appendix 1: Proposed Site Plan





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 Do not scale from drawings. Verify all dimensions on site prior to construction. This drawing is to be read in conjunction with all relevant documents and drawings. Report all discrepancies to MOJ immediately.
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- Building Footprint
- Exercise Area
- All Weather Surface Area
- Clearance Zone
- Community Area
- Existing Vegetation Retained
- Proposed Vegetation (refer to landscape plan for details)
- Horticultural Area
- Proposed Woodland Screening
- Proposed Ponds
- Existing Ponds

- Application Red Line Boundary
- MOJ Ownership Boundary
- Existing Gas Main
- Security Fence Zonal Fencing 5.2m
- Zonal Low Level Timber Fence
- Security Fence - Internal Fence 5.2m
- Security Fence - Outer Fence 5.2m
- Badger Set and Exclusion Zone

| Rev | Date | Description |
|-----|----------|--|
| P06 | 03.08.21 | Existing gas main line type on legend revised to show class 22 |
| P05 | 30.07.21 | New ponds west of site indicated, with footpath route. New footpaths along Welland Avenue added. Existing Gas Main to south shown. |
| P04 | 26.07.21 | Proposed bus stop note removed. |
| P03 | 13.07.21 | Updated ownership and site line boundaries |
| P02 | 14.06.21 | Updated to Mace TA Comments |
| P01 | 30.04.21 | First Issue |

This document references the following linked files

| File Reference | Status | Revision |
|--|--------|----------|
| 661277-0000-PEV-GTX0000-XX-M3-A-0001-D0200 | S1 | P 00 |
| 661277-0000-CEN-GTX0000-XX-SU-G-0001-A0700 | S2 | P03 |

Project Status
 RIBA Stage 2

| | | |
|--|----------------------------|------------------------------|
| | Client | Project |
| | Ministry of Justice | New Prisons Programme |

Ministry of Justice, 102 Petty France, London, SW1H 9AJ

Project Description / Site
 New Prisons Programme
 Gartree 2

Project Address
 Site Adjacent to HMP Gartree

Building Type
 SITE INFRASTRUCTURE

Drawing Title
 Site-Block Plan-Proposed-Planning

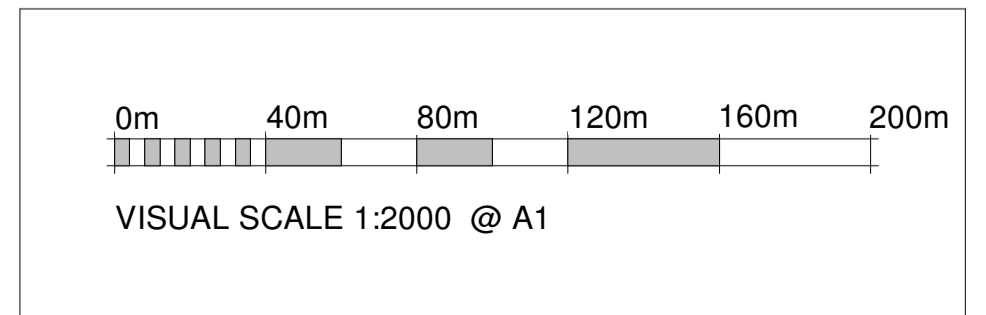
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| | Drawn By | HKM | Date | 08-04-2021 |
| | Checked By | CGI | Date | 08-04-2021 |
| | Approved By | CGI | Date | 08-04-2021 |

Drawing Number
 661277-0000-PEV-GTX0011-ZZ-DR-A-9002 Delref B0700

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| Sheet No. | Scale | Orig. Sheet Size | Rev. |
| 1 of 1 | As indicated | @ A1 | P06 |

Data Security Classification
 OFFICIAL Suitability S3

1 Plan-Site-Block-Proposed - Planning
 9002 1 : 2000



Appendix 2: Planning Policy Context

National and Local Planning Policy

- A2.1. The consideration for existing trees and woodlands in relation to planning and new development is set out within Sections 12 and 15 of the NPPF published in July 2021.
- A2.2. Section 12, paragraph 131 states that “Trees make an important contribution to the character and quality of urban environments and can also help mitigate and adapt to climate change. Planning policies and decisions should ensure that new streets are tree-lined, that opportunities are taken to incorporate trees elsewhere in developments (such as parks and community orchards), that appropriate measures are in place to secure the long-term maintenance of newly planted trees, and that existing trees are retained wherever possible. Applicants and local planning authorities should work with highways officers and tree officers to ensure that the right trees are planted in the right places, and solutions are found that are compatible with highways standards and the needs of different users.”
- A2.3. Section 15, paragraph 174 states that “Planning policies and decisions should contribute to and enhance the natural and local environment by:” Subsection 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”
- A2.4. Section 15, paragraph 180 states that “When determining planning applications, local planning authorities should apply the following principles:” Subsection C; “that 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”. No veteran, ancient trees or ancient woodlands are present to be affected by the proposed development and therefore para 180 as it relates to these features is not considered applicable to the application.

Local Planning Policy

- A2.5. Local planning policy relating to trees and new development is set-out at policies GD8 and G115 of the Harborough Local Plan (2011 - 2031) as set-out below.
- A2.6. Policy GD8 ‘Good design in development’ states that:

“Development will be permitted where it achieves a high standard of design, including meeting the following criteria:

...i) protecting and enhancing existing landscape features, wildlife habitats and natural assets (including trees, hedges and watercourses) as an integral part of the development”.



A2.7. Policy GI15 'Biodiversity and geology' states that:

"Development will be permitted where:

...a.ii. irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss".

Supplementary Planning Guidance

A2.8. The Trees and Development Note 10 was adopted as SPG to the former Harborough District Plan in March 2003. The document sets-out guidance and expectations of the LPA in relation to new existing trees and new development. In terms of the planning stage, the SPG notes that where development is likely to affect existing trees, the LPA will require a detailed tree survey to accompany the planning submission.

A2.9. Guidance on new tree planting as part of development is provided within the SPG, stating that, "The District Council wish to see an improvement in the amount and quality of new planting carried out on development sites. The need for new planting should be identified in the initial layout."



Appendix 3: Tree Survey Methodology, Constraints Mapping and Report Limitations

Field Work

- A3.1. In accordance BS5837, the tree survey included all trees within / in influence of the site and the site boundaries that were over 75mm diameter at breast height (1.5m).
- A3.2. Measured topographical survey data (supplied by others) was used to inform tree locations their surrounding context. Any trees not identified on the topographical survey are prefixed with (*) and their locations have been approximated using measurements during the tree survey and further informed by aerial photography where required.
- A3.3. The trees surveyed were visually inspected from ground level only. No invasive investigations or climbing inspections were necessary to confirm visual or audible signs of defect or debility and no tissue or soil samples were undertaken. For further clarification please refer to the tree survey explanatory notes in below.

Tree Numbers

'T' prefixes have been used to identify individual trees and commence with 'T1'.

'G' prefixes have been used to identify groups of trees.

'H' prefixes have been used to identify hedgerows.

'W' prefixes have been used to identify woodlands.

Species

- A3.4. Species are listed by their common name, both in the schedule and in the report text.

Height and Stem Diameter

- A3.5. The stem diameter is measured at 1.5m above ground level and given in millimetres (mm). Tree heights are measured in metres (m) using a clinometer where access and land topography allowed. In instances where access to tree's stem and height measurements were not possible, the dimensions have been estimated by eye.

Crown Spread and Height of Crown Clearance

- A3.6. Radial crown spread is measured in metres and is listed for each of the four cardinal points where access has been possible to obtain a measurement. Where access was not possible to measure the spread of the canopy, such distances have been estimated by eye or informed by aerial photography.
- A3.7. The measured canopy shapes have been plotted on the Tree Constraints Plan at the four cardinal points. For groups of trees, the extent of the canopy has been measured as an average across the group and plotted using the topographical survey mapping. In some instances, Tyler Grange will use aerial photography to inform the canopy spread of larger tree groups and woodlands where topographical data is limited for such features.



A3.8. The distance between the ground level and the first significant branch or radial tree crown, whichever is the lower, has been measured in metres.

Age Class

The age of each tree is defined as follows:

Young - within the first third of reaching full maturity;

Semi-Mature - within the second third of reaching full maturity;

Early-Mature - within the last third of reaching full maturity;

Mature - specimen at full maturity; and

Veteran – tree that, by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.

Physiological and Structural Condition

A3.9. The physiological or structural condition of each tree is defined as either; good, fair, poor or dead. For each tree, where appropriate, notes on the structural integrity are provided on form, taper, forking habit, storm damage, decay, fungi, pests, etc.

A3.10. An assessment of a tree's physiological condition is defined as:

Good – fully functioning biological system showing expectant vitality for the species i.e. normal bud growth, leaf size, crown density and wound closure.

Fair – fully functioning biological system showing below average vitality i.e. reduced bud growth, smaller leaf size, lower crown density and reduced wound closure.

Poor – a biological system with limited functionality showing clear physiological decline, disease or significantly below average vitality i.e. limited bud growth, small and chlorotic leaves, low crown density and limited wound closure.

Dead – tree observed to fully dead with no living parts.

A3.11. An assessment of a tree's structural condition is defined as:

Good – no significant structural defects.

Fair – structural defects which could be alleviated through remedial tree surgery or arboricultural management practices.

Poor – structural defects which cannot be alleviated through tree surgery or arboricultural management practices.



Tree Quality Gradings

A3.12. The value of trees has been assessed in accordance with the BS5837 Cascade Chart for Tree Quality Assessment (See Appendix 4). Grading subcategories (1, 2 and 3) reflect arboricultural, landscape and cultural values, respectively. **Root Protection Areas**

A3.13. The Tree Constraints Plan shows the approximate extent of Root Protection Areas (RPAs). The RPAs have been plotted and calculated in accordance with the methodology set out in Appendices C and D of BS5837, using the tree stem diameter dimensions obtained during the site visit.

A3.14. Plotted RPAs serve as 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 is treated as a priority.

A3.15. Where pre-existing site conditions or other factors indicate that rooting may occur asymmetrically, a polygon of equivalent area should be produced. Modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution observed on-site. Any deviation in the RPA from the original circular plot should take account of the following factors whilst still providing adequate protection for the root system:

a) the morphology and disposition of the roots, when influenced by past or existing site conditions (e.g. the presence of roads, structures and underground apparatus);

b) topography and drainage;

c) the soil type and structure;

d) the likely tolerance of the tree to root disturbance or damage, based on factors such as species, age, condition and past management.

A3.16. The plotted RPAs have therefore informed the design of the proposed development where possible. While developing within RPAs should be avoided, special working methods can be adopted to alleviate the RPA disturbance for cases where the development is considered necessary and unavoidable.

Tree Canopies and Shading

A3.17. The distribution of tree canopy cover on and within influence of the site is illustrated on the TCP. Canopies have been plotted at cardinal points for individual and groups of trees. The Tree Survey Schedule included at Appendix 5 to the rear of this report lists the vertical clearance from site ground level to significant tree branching of individual trees. This measurement informs the impacts of accessibility and development beneath tree canopies.

A3.18. The principal tree shadow constraints are shown on the TCP and have been plotted in accordance with BS5837 using the current height of surveyed trees. The indicative shade cast by existing surveyed trees signifies the area within which the amenity interests of shading, available daylight and the proximity of trees to any future site uses may be impacted upon should a tree be retained as part of development.



A3.19. Where shading is unavoidable, the potential adverse impact of shadowing should also be reviewed on balance with the positive aspects of retaining a degree of canopy shade. BS5837:2012 (para. 5.3.4, a) NOTE 1) states that "shading can be desirable to reduce glare or excessive solar heating, or to provide comfort during hot weather. The combination of shading, wind speed/turbulence reduction and evapotranspiration effects of trees can be utilised in conjunction with the design of buildings and spaces to provide local microclimatic benefits".

Limitations

A3.20. The comments made are based on observable factors present at the time of inspection. Although the health and stability of trees in their current context is an integral part of their suitability for retention, it must be understood that this report is not a tree risk assessment and should not be construed as such. While every attempt has been made to provide a realistic and accurate assessment of the trees' condition at the time of inspection, it may have not been appropriate, or possible, to view all parts or all sides of every tree to fulfil the assessment criteria of a risk assessment.

A3.21. No tree can be considered entirely safe, given the possibility that exceptionally strong winds could damage or uproot even a mechanically 'perfect' specimen. It is therefore usually accepted that hazards are only recognisable from distinct defects or from other failure-prone characteristics of the tree or the site. An assessment of the potential influence of trees upon existing buildings or other structures resulting from the effects of trees upon shrinkable load-bearing soils or the effects of incremental root or branch growth, are specifically excluded from this report.

Un-assessable Risks

A3.22. Any alteration to the application site or development proposals could change the current circumstances and may invalidate this report and any recommendations made.

A3.23. The Wildlife and Countryside Act (WCA) 1981 (as amended) makes it an offence to disturb nesting birds or recklessly endanger a bat or its roost. Bats are also a European protected species and are additionally protected under the Conservation (Habitats & c) Regulations 1994 and 2010 (as amended). The survey findings, constraints, opportunities and design or mitigation recommendations included within that report must be read alongside this document.

A3.24. A lack of recommended work does not imply that a tree does not pose an unacceptable level of risk and likewise, it should not be implied that a tree will present an acceptable level of risk following the completion of any recommended work.



Appendix 4: Cascade Chart for Tree Quality Assessment



Appendix 4: Cascade Chart for Tree Quality Assessment

| TREES FOR REMOVAL | | | | |
|--|---|---|---|------------------------|
| Category and Definition | Criteria | | | Identification on Plan |
| Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years | Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning). | | | DARK RED |
| | Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline. | | | |
| | Trees infected with pathogens of significance to the health and/or safety of other trees nearby or very low-quality trees suppressing adjacent trees of better quality. (NOTE: Category U trees can have existing or potential conservation value which it might be desirable to preserve) | | | |
| TREES TO BE CONSIDERED FOR RETENTION | | | | |
| Category and Definition | Criteria - Subcategories | | | Identification on Plan |
| | 1. Mainly Arboricultural Values | 2. Mainly Landscape Values | 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) | LIGHT GREEN |
| 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 remedial 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 benefits. | MID BLUE |
| 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 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 temporary/transient landscape benefit. | Trees with no material conservation or other cultural value. | GREY |



Appendix 5: Tree Survey Schedule



| Tree Number | Common Species Name | Height (m) | Trunk Diameter (mm) | Crown Spread (m) | | | | Height of Crown Clearance (m) | Height and direction of lowest branch (m) | Age Class | Physiological Condition | Structural Condition | BS5837 Category | Comments/Preliminary Management Recommendations | RPA Radius (m) | Root Protection Area (m ²) |
|-------------|---------------------|------------|---------------------|------------------|------|------|------|-------------------------------|---|-------------|-------------------------|----------------------|-----------------|---|----------------|--|
| | | | | N | E | S | W | | | | | | | | | |
| T1 | Sycamore | 9m | 373 | 3.30 | 3.70 | 4.00 | 3.20 | 1.50 | 1.00 N | Semi Mature | Good | Fair | B1/2 | Located upon grass verge to SW boundary. Stands adjacent to highway. Twin-stemmed from 1m (union stable at time of assessment). Relatively radial canopy. Dense bud cover. Forms part of wider linear group bordering highway. | 4.5 | 63 |
| T2 | Wild Cherry | 4m | 253 | 2.00 | 2.00 | 2.00 | 2.00 | 1.50 | 0.00 N | Semi Mature | Good | Fair | C1 | Located upon grass verge to SW boundary. Stands adjacent to highway. Multi-stemmed from base. Dense bud coverage. Space to fully mature. | 3.0 | 29 |
| T3 | Crab Apple | 9m | 677 | 4.70 | 6.00 | 6.80 | 6.20 | 1.00 | 1.00 N | Mature | Good | Fair | B1/2 | Located upon grass verge to SW boundary. Stands adjacent to highway. Mature apple. Stems trifurcate from base. Low spreading canopy shows dense bud cover. Shares cohesive canopy with adjacent ash. Important boundary contribution. | 8.1 | 207 |
| T4 | Common Ash | 15m | 650 | 5.30 | 5.30 | 5.50 | 5.60 | 2.50 | 2.50 S | Mature | Good | Fair | B1/2 | Located upon grass verge to SW boundary. Stands adjacent to highway. Single stemmed. Co-dominant stems divide from 2.2m. Relatively radial canopy shows dense bud cover. Small proportion of canopy deadwood. Important boundary feature specimen. Remove deadwood over highway. | 7.8 | 191 |
| T5 | Whitebeam | 5m | 247 | 2.50 | 3.00 | 3.00 | 2.50 | 1.50 | 1.20 S | Semi Mature | Good | Fair | C1/2 | Located upon grass verge to SW boundary. Stands adjacent to highway. Twin-stemmed from 1m. Radial canopy. Dense bud cover. Space to fully mature. | 3.0 | 28 |
| T6 | Bird Cherry | 8m | 383 | 4.00 | 4.20 | 4.00 | 2.80 | 1.50 | 1.00 N | Semi Mature | Good | Good | C1/2 | Located upon grass verge to SW boundary. Stands adjacent to highway. Multi-stemmed from base. Dense bud coverage. Canopy continuous with adjacent lime. Good future potential. | 4.6 | 66 |

| Tree Number | Common Species Name | Height (m) | Trunk Diameter (mm) | Crown Spread (m) | | | | Height of Crown Clearance (m) | Height and direction of lowest branch (m) | Age Class | Physiological Condition | Structural Condition | BS5837 Category | Comments/Preliminary Management Recommendations | RPA Radius (m) | Root Protection Area (m ²) |
|-------------|---------------------|------------|---------------------|------------------|------|------|------|-------------------------------|---|--------------|-------------------------|----------------------|-----------------|---|----------------|--|
| | | | | N | E | S | W | | | | | | | | | |
| T7 | Small Leaved Lime | 9m | 405 | 3.70 | 4.20 | 4.60 | 4.00 | 0.50 | 0.50 S | Semi Mature | Good | Good | B1/2 | Located upon grass verge to SW boundary. Stands adjacent to highway. Basal epicormic. Co-dominant stems divide from 1.5m (union stable at time of assessment). Radial canopy shows dense bud cover. Good future potential. Contributes to linear boundary tree group. | 4.9 | 74 |
| T8 | Common Beech | 9m | 515 | 4.10 | 4.50 | 5.70 | 4.00 | 1.00 | 0.20 SW | Early Mature | Good | Good | B1/2 | Located upon grass verge to SW boundary. Stands adjacent to highway. Single-stemmed. Structural canopy divides from 1.2m. Low radial canopy shows dense bud cover. Good future potential. Important boundary specimen. | 6.2 | 120 |
| T9 | Crab Apple | 5m | 225 | 3.00 | 3.00 | 3.00 | 3.00 | 0.50 | 0.50 E | Semi Mature | Good | Fair | C1/2 | Located upon grass verge to SW boundary. Stands adjacent to highway. Co-dominant stems divide from 0.4m. Small apple with limited wider site value. | 2.7 | 23 |
| T10 | Whitebeam | 8m | 380 | 3.00 | 3.00 | 3.00 | 2.40 | 1.50 | 1.00 E | Semi Mature | Good | Fair | C1/2 | Located upon grass verge to SW boundary. Stands adjacent to highway. Multi-stemmed from 0.5m with narrow structural unions. Dense bud cover. Contributes to wider linear boundary tree group. | 4.6 | 65 |
| T11 | Red Oak | 13m | 500 | 4.80 | 5.50 | 5.80 | 5.00 | 1.50 | 1.50 SE | Early Mature | Good | Fair | B1/2 | Located upon grass verge to SW boundary. Stands adjacent to highway. Co-dominant stems divide from 1.5m with narrow associated union (stable at time of assessment). Dense bud cover. Good future potential. Prominent boundary oak. | 6.0 | 113 |
| T12 | Norway Maple | 9m | 355 | 5.00 | 5.00 | 4.50 | 3.70 | 1.80 | 1.70 E | Semi Mature | Good | Fair | B1/2 | Located upon grass verge to SW boundary. Stands adjacent to highway. Single-stemmed. Co-dominant union divides from 1.8m. Relatively radial canopy shows dense bud cover. Important boundary maple. | 4.3 | 57 |

| Tree Number | Common Species Name | Height (m) | Trunk Diameter (mm) | Crown Spread (m) | | | | Height of Crown Clearance (m) | Height and direction of lowest branch (m) | Age Class | Physiological Condition | Structural Condition | BS5837 Category | Comments/Preliminary Management Recommendations | RPA Radius (m) | Root Protection Area (m ²) |
|-------------|---------------------|------------|---------------------|------------------|------|------|------|-------------------------------|---|--------------|-------------------------|----------------------|-----------------|--|----------------|--|
| | | | | N | E | S | W | | | | | | | | | |
| T13 | Common Beech | 8m | 350 | 4.00 | 4.00 | 3.50 | 3.50 | 1.50 | 1.20 E | Semi Mature | Good | Fair | C1/2 | Located upon grass verge to SW boundary. Stands adjacent to highway. Single stemmed. Narrow acute union divides from 1.7m with increment strip below (union stable at time of assessment). Dense bud cover. Canopy continuous with adjacent willow. | 4.2 | 55 |
| T14 | Crack Willow | 13m | 706 | 5.20 | 6.00 | 6.50 | 6.00 | 1.50 | 1.50 E | Mature | Good | Fair | B1/2 | Located upon grass verge to SW boundary. Stands adjacent to highway. Large mature specimen. Stems trifurcate from base. Dense bud cover. Prominent boundary specimen. | 8.5 | 225 |
| T15 | Crack Willow | 14m | 771 | 8.80 | 8.00 | 9.30 | 7.20 | 1.00 | 1.00 E | Mature | Good | Fair | B1/2 | Located upon grass verge to W boundary. Stands adjacent to highway. Large mature willow. Multi-stemmed from base. Wide spreading canopy. Important boundary specimen. Minor deadwood only. | 9.3 | 269 |
| T16 | Hybrid Black Poplar | 24m | 1000 | 8.60 | 7.10 | 7.00 | 8.00 | 3.00 | 1.00 S | Mature | Good | Fair | B1/2 | Located to western boundary. Stands upon field boundary ditch network forming pair with adjacent similar specimen. Dense vegetation at base restricts detailed assessment. Single stemmed. Previous storm damaged branches to canopy. Dense bud cover. Prominent landscape specimen given size and maturity. | 12.0 | 452 |
| T17 | Hybrid Black Poplar | 24m | 1000 | 6.00 | 5.50 | 7.50 | 7.00 | 3.00 | 2.00 S | Mature | Good | Fair | B1/2 | Located to western boundary. Stands upon field boundary ditch network forming pair with adjacent similar specimen. Dense vegetation at base restricts detailed assessment. Single stemmed. Previous storm damaged branches to canopy. Dense bud cover. Subordinate canopy continuous with adjacent tree. Prominent landscape specimen given size and maturity. | 12.0 | 452 |
| T18 | Italian Alder | 11m | 495 | 4.50 | 5.00 | 4.00 | 4.50 | 1.00 | 2.00 SW | Mature | Good | Good | B1/2 | Located to western boundary. Stands close to field boundary fence line. Single-stemmed. Dense radial canopy. Good example of species. | 5.9 | 111 |
| T19 | Common Hawthorn | 3m | 245 | 2.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 N | Early Mature | Good | Fair | C1 | Located to west of site. Establishing along field boundary ditch network. Multi-stemmed. Limited wider site contribution. | 2.9 | 27 |

| Tree Number | Common Species Name | Height (m) | Trunk Diameter (mm) | Crown Spread (m) | | | | Height of Crown Clearance (m) | Height and direction of lowest branch (m) | Age Class | Physiological Condition | Structural Condition | BS5837 Category | Comments/Preliminary Management Recommendations | RPA Radius (m) | Root Protection Area (m ²) |
|-------------|---------------------|------------|---------------------|------------------|------|------|------|-------------------------------|---|--------------|-------------------------|----------------------|-----------------|---|----------------|--|
| | | | | N | E | S | W | | | | | | | | | |
| T20 | Common Hawthorn | 2m | 75 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 N | Early Mature | Fair | Fair | C1 | Located to west of site. Establishing along field boundary ditch network. Small individual Hawthorn. Limited individual quality and value. | .9 | 3 |
| T21 | Common Ash | 3m | 130 | 1.00 | 1.00 | 1.00 | 1.00 | 2.00 | 1.50 SW | Young | Fair | Fair | C1 | Located to west of site. Establishing along field boundary ditch network. Stands adjacent field access track. Single-stemmed. Browsing damage to stem north side. Small insignificant ash. Low value. | 1.6 | 8 |
| T22 | Common Hawthorn | 3m | 196 | 2.00 | 2.00 | 2.00 | 2.00 | 0.50 | 0.50 N | Semi Mature | Good | Fair | C1 | Located to west of site. Establishing along field boundary ditch network. Small individual Hawthorn. Limited individual quality and value specimen. | 2.4 | 17 |
| T23 | Common Hawthorn | 4m | 214 | 3.00 | 2.00 | 2.50 | 3.00 | 0.50 | 0.50 N | Semi Mature | Good | Fair | C1 | Located to west of site. Establishing along field boundary ditch network. Small individual Hawthorn. Limited individual quality and value. Canopy continuous with adjacent tree. | 2.6 | 21 |
| T24 | Common Hawthorn | 4m | 292 | 3.00 | 3.50 | 3.00 | 3.00 | 0.50 | 0.50 N | Semi Mature | Good | Fair | C1 | Located to west of site. Establishing along field boundary ditch network. Small individual Hawthorn. Limited individual quality and value. Canopy continuous with adjacent tree. | 3.5 | 39 |
| T25 | Common Hawthorn | 3m | 196 | 2.00 | 2.00 | 2.00 | 2.00 | 0.50 | 0.50 N | Semi Mature | Good | Fair | C1 | Located to west of site. Establishing along field boundary ditch network. Small individual Hawthorn. Limited individual quality and value. | 2.4 | 17 |
| T26 | Common Hawthorn | 3m | 196 | 2.00 | 2.00 | 2.00 | 2.00 | 0.50 | 0.50 N | Semi Mature | Good | Fair | C1 | Located to west of site. Establishing along field boundary ditch network. Small individual Hawthorn. Limited individual quality and value. | 2.4 | 17 |

| Tree Number | Common Species Name | Height (m) | Trunk Diameter (mm) | Crown Spread (m) | | | | Height of Crown Clearance (m) | Height and direction of lowest branch (m) | Age Class | Physiological Condition | Structural Condition | BS5837 Category | Comments/Preliminary Management Recommendations | RPA Radius (m) | Root Protection Area (m ²) |
|-------------|---------------------|------------|---------------------|------------------|------|------|------|-------------------------------|---|--------------|-------------------------|----------------------|-----------------|--|----------------|--|
| | | | | N | E | S | W | | | | | | | | | |
| T27 | Common Hawthorn | 5m | 260 | 3.20 | 3.00 | 2.50 | 2.50 | 0.50 | 0.50 S | Semi Mature | Good | Fair | C1 | Located to central / western aspect of site adjacent field access track. Multi-stemmed. Dense bud cover. Limited wider site contribution. | 3.1 | 31 |
| T28 | Common Ash | 9m | 778 | 7.00 | 8.20 | 5.50 | 5.00 | 3.20 | 2.50 E | Early Mature | Good | Fair | B1/2 | Located along northern boundary ditch network adjacent field access track. Multi-stemmed from base. Wide spreading canopy. Prominent boundary ash. | 9.3 | 274 |
| T29 | Corsican Pine | 7m | 375 | 4.00 | 4.00 | 3.50 | 4.00 | 0.00 | 1.00 E | Semi Mature | Good | Good | C1/2 | Located towards northern aspect of site. Stands adjacent field access gate and track. Hardstanding within rooting area. Single-stemmed. Dense needle cover. | 4.5 | 64 |
| T30 | Crack Willow | 8m | 465 | 6.00 | 6.50 | 6.00 | 6.00 | 0.50 | 1.00 N | Early Mature | Good | Fair | C1/2 | Located to north of site within farmers yard. Surplus building material piled beneath canopy. Multi-stemmed from 1m with narrow associated unions. Relatively radial canopy spread. Limited site significance. | 5.6 | 98 |
| T31 | Crack Willow | 10m | 618 | 9.00 | 9.00 | 9.00 | 9.00 | 0.00 | 0.00 N | Mature | Poor | Good | U | Located to north of site within farmers yard. Multi-stemmed willow within has partially collapsed. No future retention value. Fell to ground level from site management perspective. | 7.4 | 173 |
| T32 | Downy Oak | 9m | 375 | 5.00 | 5.00 | 4.50 | 5.00 | 1.50 | 1.20 E | Semi Mature | Good | Good | B1 | Located to north of site within farmers yard. Single stemmed. Dense radial canopy. Potential long-term contribution. | 4.5 | 64 |
| T33 | Goat Willow | 4m | 212 | 2.00 | 2.00 | 2.00 | 2.00 | 1.00 | 1.00 N | Semi Mature | Fair | Fair | C1 | Located along northern boundary fence line. Twin-stemmed from base. Dense bud cover. Limited individual quality and value. | 2.5 | 20 |

| Tree Number | Common Species Name | Height (m) | Trunk Diameter (mm) | Crown Spread (m) | | | | Height of Crown Clearance (m) | Height and direction of lowest branch (m) | Age Class | Physiological Condition | Structural Condition | BS5837 Category | Comments/Preliminary Management Recommendations | RPA Radius (m) | Root Protection Area (m ²) |
|-------------|---------------------|------------|---------------------|------------------|------|------|------|-------------------------------|---|--------------|-------------------------|----------------------|-----------------|---|----------------|--|
| | | | | N | E | S | W | | | | | | | | | |
| T34 | Common Hawthorn | 5m | 290 | 3.00 | 3.00 | 3.00 | 3.00 | 0.50 | 0.50 E | Semi Mature | Good | Good | C1 | Located along eastern boundary fence line adjacent to farm track. Individual hawthorn of limited wider site importance. | 3.5 | 38 |
| T35 | Lombardy Poplar | 13m | 345 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 E | Early Mature | Good | Fair | B1/2 | Located along eastern boundary fence line. Forms part of wider linear group of Lombardy poplar. Single stemmed. Dense bud cover. Important landscape contribution within wider group feature. | 4.1 | 54 |
| T36 | Lombardy Poplar | 14m | 360 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 E | Early Mature | Good | Fair | B1/2 | Located along eastern boundary fence line. Forms part of wider linear group of Lombardy poplar. Single stemmed. Dense bud cover. Important landscape contribution within wider group feature. | 4.3 | 59 |
| T37 | Lombardy Poplar | 14m | 465 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 E | Early Mature | Good | Fair | B1/2 | Located along eastern boundary fence line. Forms part of wider linear group of Lombardy poplar. Single stemmed. Dense bud cover. Important landscape contribution within wider group feature. | 5.6 | 98 |
| T38 | Lombardy Poplar | 14m | 465 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 E | Early Mature | Good | Fair | B1/2 | Located along eastern boundary fence line. Forms part of wider linear group of Lombardy poplar. Single stemmed. Dense bud cover. Important landscape contribution within wider group feature. | 5.6 | 98 |
| T39 | Lombardy Poplar | 12m | 465 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 E | Early Mature | Good | Fair | B1/2 | Located along eastern boundary fence line. Forms part of wider linear group of Lombardy poplar. Single stemmed. Dense bud cover. Important landscape contribution within wider group feature. | 5.6 | 98 |
| T40 | Lombardy Poplar | 14m | 515 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 E | Early Mature | Good | Fair | B1/2 | Located along eastern boundary fence line. Forms part of wider linear group of Lombardy poplar. Single stemmed. Dense bud cover. Important landscape contribution within wider group feature. | 6.2 | 120 |

| Tree Number | Common Species Name | Height (m) | Trunk Diameter (mm) | Crown Spread (m) | | | | Height of Crown Clearance (m) | Height and direction of lowest branch (m) | Age Class | Physiological Condition | Structural Condition | BS5837 Category | Comments/Preliminary Management Recommendations | RPA Radius (m) | Root Protection Area (m ²) |
|-------------|---------------------|------------|---------------------|------------------|------|------|------|-------------------------------|---|--------------|-------------------------|----------------------|-----------------|--|----------------|--|
| | | | | N | E | S | W | | | | | | | | | |
| T41 | Lombardy Poplar | 14m | 435 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 E | Early Mature | Good | Fair | B1/2 | Located along eastern boundary fence line. Forms part of wider linear group of Lombardy poplar. Single stemmed. Dense bud cover. Important landscape contribution within wider group feature. | 5.2 | 86 |
| T42 | Lombardy Poplar | 13m | 440 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 E | Early Mature | Good | Fair | B1/2 | Located along eastern boundary fence line. Forms part of wider linear group of Lombardy poplar. Single stemmed. Dense bud cover. Important landscape contribution within wider group feature. | 5.3 | 88 |
| T43 | Lombardy Poplar | 12m | 470 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 E | Early Mature | Good | Fair | B1/2 | Located along eastern boundary fence line. Forms part of wider linear group of Lombardy poplar. Single stemmed. Dense bud cover. Important landscape contribution within wider group feature. | 5.6 | 100 |
| T44 | Lombardy Poplar | 9m | 245 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 E | Early Mature | Good | Fair | C1/2 | Located along eastern boundary fence line. Forms part of wider linear group of Lombardy poplar. Smaller than the majority of adjacent poplars. Single stemmed. Dense bud cover. Important landscape contribution within wider group feature. | 2.9 | 27 |
| T45 | Lombardy Poplar | 14m | 350 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 E | Early Mature | Good | Fair | B1/2 | Located along eastern boundary fence line. Forms part of wider linear group of Lombardy poplar. Single stemmed. Dense bud cover. Important landscape contribution within wider group feature. | 4.2 | 55 |
| T46 | Lombardy Poplar | 16m | 460 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 E | Early Mature | Good | Fair | B1/2 | Located along eastern boundary fence line. Forms part of wider linear group of Lombardy poplar. Single stemmed. Dense bud cover. Important landscape contribution within wider group feature. | 5.5 | 96 |
| T47 | Lombardy Poplar | 14m | 340 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 E | Early Mature | Good | Fair | B1/2 | Located along eastern boundary fence line. Forms part of wider linear group of Lombardy poplar. Single stemmed. Dense bud cover. Important landscape contribution within wider group feature. | 4.1 | 52 |

| Tree Number | Common Species Name | Height (m) | Trunk Diameter (mm) | Crown Spread (m) | | | | Height of Crown Clearance (m) | Height and direction of lowest branch (m) | Age Class | Physiological Condition | Structural Condition | BS5837 Category | Comments/Preliminary Management Recommendations | RPA Radius (m) | Root Protection Area (m ²) |
|-------------|---------------------|------------|---------------------|------------------|------|------|------|-------------------------------|---|--------------|-------------------------|----------------------|-----------------|---|----------------|--|
| | | | | N | E | S | W | | | | | | | | | |
| T48 | Lombardy Poplar | 14m | 475 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 E | Early Mature | Good | Fair | B1/2 | Located along eastern boundary fence line. Forms part of wider linear group of Lombardy poplar. Single stemmed. Dense bud cover. Important landscape contribution within wider group feature. | 5.7 | 102 |
| T49 | Lombardy Poplar | 14m | 455 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 N | Early Mature | Good | Fair | B1/2 | Located along eastern boundary fence line. Forms part of wider linear group of Lombardy poplar. Single stemmed. Dense bud cover. Important landscape contribution within wider group feature. | 5.5 | 94 |
| T50 | Common Beech | 9m | 175 | 3.00 | 3.00 | 3.00 | 3.00 | 1.00 | 1.50 W | Young | Good | Good | C1 | Located to central / southern aspect of site. Single stemmed. Slender form. Suppressed by larger adjacent willow. Limited quality and value. | 2.1 | 14 |
| T51 | Common Hawthorn | 6m | 367 | 4.00 | 3.50 | 3.00 | 4.00 | 0.00 | 0.50 N | Early Mature | Good | Fair | C1/2 | Located to central / southern aspect of site. Multi-stemmed from base. Snapped branch to west side canopy. Limited wider site contribution. Repair storm damaged branches. | 4.4 | 61 |
| T52 | Scots Pine | 9m | 445 | 5.50 | 5.50 | 5.50 | 5.50 | 1.00 | 0.50 E | Mature | Good | Fair | B1/2 | Located to central / southern aspect of site. Single stemmed. Dense canopy. Squat form. Important landscape value within wider linear group. | 5.3 | 90 |
| T53 | Common Hawthorn | 4m | 226 | 3.50 | 3.50 | 3.50 | 3.50 | 1.00 | 1.20 E | Early Mature | Good | Fair | C1/2 | Located to central / western aspect of site. Stand on margin of wider adjacent tree group. Twin-stemmed from base. Limited individual value. | 2.7 | 23 |
| T54 | Common Ash | 13m | 475 | 7.40 | 7.10 | 7.50 | 8.00 | 3.00 | 3.50 SE | Mature | Fair | Good | B1/2 | Located beyond southern boundary fence line on opposite side of public footpath. Single stemmed. Co-dominant union divides from 3m. Dense bud cover. Wide spreading canopy with large deadwood. Important landscape contribution. Remove deadwood overhanging site boundary. | 5.7 | 102 |

| Tree Number | Common Species Name | Height (m) | Trunk Diameter (mm) | Crown Spread (m) | | | | Height of Crown Clearance (m) | Height and direction of lowest branch (m) | Age Class | Physiological Condition | Structural Condition | BS5837 Category | Comments/Preliminary Management Recommendations | RPA Radius (m) | Root Protection Area (m ²) |
|-------------|--|------------|---------------------|------------------|------|------|------|-------------------------------|---|--------------|-------------------------|----------------------|-----------------|---|----------------|--|
| | | | | N | E | S | W | | | | | | | | | |
| T55 | Common Ash | 11m | 475 | 7.10 | 7.80 | 7.50 | 7.50 | 3.00 | 2.00 W | Mature | Good | Fair | B1/2 | Located beyond southern boundary fence line on opposite side of public footpath. Single stemmed. Structural canopy divides from 2m. Wide spreading canopy shows dense bud cover. Important landscape contribution. | 5.7 | 102 |
| G1 | Crab Apple, Wild Cherry & Whitebeam | 7m | 120 | 3.00 | 3.00 | 3.00 | 3.00 | 1.00 | 1.00 N | Young | Good | Fair | C1/2 | Located upon grass verge to SW boundary. Stands adjacent to highway. Short group of self-set specimens. Trees share collective canopy. Limited combined quality and value. | 1.4 | 7 |
| G2 | Wild Cherry & Whitebeam | 6m | 225 | 3.00 | 3.00 | 3.00 | 3.00 | 1.00 | 1.00 N | Young | Good | Fair | C2 | Located upon grass verge to W boundary. Stands adjacent to highway. Small group of mixed species which are principally self-set. Low collective quality and value. | 2.7 | 23 |
| G3 | Common Hawthorn, Common Blackthorn & Wild Cherry | 7m | 160 | 3.00 | 3.00 | 3.00 | 3.00 | 1.00 | 1.00 N | Semi Mature | Fair | Fair | C2 | Located to western boundary corner adjacent access track. Scrub-like group. Bramble understorey. Limited overall quality and value. | 1.9 | 12 |
| G4 | Common Ash, Italian Alder, Leyland Cypress & Wild Cherry | 13m | 370 | 4.00 | 4.00 | 4.00 | 4.00 | 2.00 | 2.00 N | Early Mature | Good | Fair | C2 | Located to western boundary. Group of trees partially screening adjacent substation. Close planting proximity. Trees share cohesive canopy. Collective screening value. | 4.4 | 62 |
| G5 | Common Ash | 12m | 661 | 7.60 | 7.60 | 7.60 | 7.60 | 2.00 | 3.00 S | Mature | Good | Fair | B2 | Located to west of site. Establishing along field boundary ditch network. Linear group of 4no. multi-stemmed ash. Trees share cohesive canopy. Minor deadwood only. Important collective value to site. | 7.9 | 198 |
| G6 | Common Hawthorn | 5m | 404 | 3.60 | 3.60 | 3.60 | 3.60 | 0.50 | 0.50 N | Semi Mature | Good | Fair | C2 | Located to west of site. Establishing along field boundary ditch network. Cluster of hawthorn trees positioned along field boundary ditch network. Trees share cohesive canopy. Limited collective site contribution. | 4.8 | 74 |

| Tree Number | Common Species Name | Height (m) | Trunk Diameter (mm) | Crown Spread (m) | | | | Height of Crown Clearance (m) | Height and direction of lowest branch (m) | Age Class | Physiological Condition | Structural Condition | BS5837 Category | Comments/Preliminary Management Recommendations | RPA Radius (m) | Root Protection Area (m ²) |
|-------------|---|------------|---------------------|------------------|------|------|------|-------------------------------|---|--------------|-------------------------|----------------------|-----------------|---|----------------|--|
| | | | | N | E | S | W | | | | | | | | | |
| G7 | Crack Willow & Goat Willow | 12m | 475 | 9.00 | 9.00 | 9.00 | 9.00 | 1.00 | 1.00 N | Early Mature | Good | Fair | C2 | Located to north of site within farmers yard. Group of 2no. large crack willow and 1no. small goat willow standing adjacent to brick outbuilding. Hardstanding within rooting area. Multi-stemmed crack willow with narrow structural unions. Trees share cohesive canopy. Low combined canopy in contact with brick outbuilding. Limited long-term retention viability due to positioning. | 5.7 | 102 |
| G8 | Crack Willow, Common Alder, Pedunculate Oak | 13m | 425 | 7.00 | 7.00 | 7.00 | 7.00 | 1.00 | 1.50 N | Early Mature | Good | Fair | C2 | Located to north of site within farmers yard. Mixed group located upon grassed area close to large farm building. Trees share dense cohesive canopy. Individual oak is of highest quality and has future long-term value. | 5.1 | 82 |
| G9 | Crack Willow, Common Hawthorn | 9m | 522 | 7.00 | 7.00 | 7.00 | 7.00 | 1.00 | 1.00 N | Early Mature | Fair | Fair | C2 | Located to north of site within farmers yard area. Sporadic group of trees positioned upon bund. Dense vegetation and at base. Multiple self-set trees. Low collective value. | 6.3 | 123 |
| G10 | Crack Willow | 11m | 636 | 6.50 | 6.50 | 6.50 | 6.50 | 1.00 | 0.50 N | Mature | Good | Fair | C2 | Located to north of site within farmers yard. Pair of large willow standing close to mesh fence line. Multi-stemmed with narrow structural unions. Trees share cohesive canopy. Limited long-term structural value remaining. | 7.6 | 183 |
| G11 | Silver Birch, Corsican Pine, Crack Willow, Common Hawthorn, Swedish Whitebeam, Young's Weeping Birch, Silver Maple, Whitebeam, Common Elder & | 8m | 354 | 5.00 | 5.00 | 5.00 | 5.00 | 1.00 | 1.00 N | Semi Mature | Good | Fair | C2 | Located to north of site within farmers yard. Sporadic group of trees positioned around bund. Largely small specimens and occasional larger willow. Limited collective site contribution. | 4.2 | 57 |

| Tree Number | Common Species Name | Height (m) | Trunk Diameter (mm) | Crown Spread (m) | | | | Height of Crown Clearance (m) | Height and direction of lowest branch (m) | Age Class | Physiological Condition | Structural Condition | BS5837 Category | Comments/Preliminary Management Recommendations | RPA Radius (m) | Root Protection Area (m ²) |
|-------------|--|------------|---------------------|------------------|-------|-------|-------|-------------------------------|---|-------------|-------------------------|----------------------|-----------------|--|----------------|--|
| | | | | N | E | S | W | | | | | | | | | |
| G12 | Common Beech, Whitebeam, Silver Birch, Silver Maple, Black Walnut, Crack Willow, Swedish Whitebeam & Field Maple | 10m | 460 | 4.00 | 4.00 | 4.00 | 4.00 | 1.50 | 1.50 N | Semi Mature | Good | Fair | C2 | Located to central / northern aspect of site. Group of mixed species trees within field area. Browsing damage to multiple stems. Crack willow are largest and most dominant trees within group. If retained group would benefit from removal of large willow and restocking large gaps. | 5.5 | 96 |
| G13 | Crack Willow | 22m | 1210 | 11.00 | 11.00 | 11.00 | 11.00 | 1.00 | 1.00 N | Mature | Good | Fair | B1/2 | Located to central / southern aspect of site. DBH taken from largest central specimen. Linear group of 6no. Mature willow positioned along field boundary ditch network. Multi-stemmed specimens. Narrow structural unions typical of species. Trees share combined mutual canopies. Storm damage and deadwood associated with combined group canopy. Important landscape value. Remove large deadwood and storm damaged branches if area beneath canopy becomes more frequently visited. | 14.5 | 662 |
| G14 | Scots Pine & Corsican Pine | 10m | 495 | 6.00 | 6.00 | 6.00 | 6.00 | 1.20 | 1.50 NW | Mature | Good | Fair | B2 | Located to central / southern aspect of site. Pair of pines, 1no. Scots and 1no. Corsican. Extensive browsing damage to lower stems. Trees share combined mutual canopy. Important collective site value. Squat form. | 5.9 | 111 |
| G15 | Hybrid Black Poplar, Sycamore & Whitebeam | 26m | 875 | 10.50 | 10.50 | 10.50 | 10.50 | 2.50 | 1.00 W | Mature | Good | Fair | B2 | Linear group of 18no. hybrid black poplar, 1no. pedunculate oak, 3no. scots pine, 15no. sycamore and multiple interspersed small Whitebeam. Poplar and dominant in size and spread with multiple trees exhibiting deadwood and previous storm damage. Understorey sycamore slightly suppressed. Important collective landscape value. Remove large deadwood and storm damaged branches if area beneath canopy becomes more frequently visited. | 10.5 | 346 |

| Tree Number | Common Species Name | Height (m) | Trunk Diameter (mm) | Crown Spread (m) | | | | Height of Crown Clearance (m) | Height and direction of lowest branch (m) | Age Class | Physiological Condition | Structural Condition | BS5837 Category | Comments/Preliminary Management Recommendations | RPA Radius (m) | Root Protection Area (m ²) |
|-------------|---|------------|---------------------|------------------|------|------|------|-------------------------------|---|--------------|-------------------------|----------------------|-----------------|--|----------------|--|
| | | | | N | E | S | W | | | | | | | | | |
| G16 | Common Hawthorn & Blackthorn | 5m | 200 | 3.00 | 3.00 | 3.00 | 3.00 | 1.00 | 1.00 N | Early Mature | Fair | Fair | C2 | Located to central / western aspect of site. Scrub-like group surrounding natural pond. Dead and collapsed trees within group. Low collective quality and value. Fell dead and collapsed specimens within group. | 2.4 | 18 |
| H1 | Common Hawthorn, Common Elder | 5m | 130 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 | 0.00 | Early Mature | Good | Fair | C2 | Located along northern boundary ditch network adjacent to field access track. Short section of predominantly hawthorn hedging. Broken and sporadic in parts. Hedgerow continues further west off-site. Partial low level screening from HMP. | 1.6 | 8 |
| H2 | Common Hawthorn & Common Blackthorn | 6m | 253 | 2.50 | 2.50 | 2.50 | 2.50 | 0.00 | 0.00 N | Mature | Good | Fair | C2 | Linear southern boundary hedgerow. Runs along field ditch network. Historically laid. Unmanaged for some time. Likely wildlife corridor. | 3.0 | 29 |
| H3 | Common Hawthorn, Common Blackthorn & Common Elder | 2m | 150 | 1.50 | 1.50 | 1.50 | 1.50 | 0.00 | 0.00 N | Mature | Good | Good | B2 | Linear southern boundary hedgerow positioned on opposite side of public footpath. Spans large proportion of southern boundary. Regularly managed. Likely wildlife corridor. | 1.8 | 10 |

Plan 1: Tree Constraints Plan



- Key:
- Survey Boundary
 - Category B - Trees of Moderate Quality and Value
 - Category C - Trees of Low Quality and Value
 - Category U - Trees Recommended for Removal
 - Approximate Extent of BS5837 Calculated Root Protection Areas (RPAs)
 - BS 5837 Calculated Tree Shadow Constraints
 - Offsite Group and Hedgerow



Project Name
Gartree 2

Drawing Title
Tree Constraints Plan



| | |
|--------------------------|-----------------------|
| Scale 1:750 @ A0 | Date November 2020 |
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Plan 2: Tree Retention and Removal Plan





- Survey Boundary
- Category B - Trees of Moderate Quality and Value
- Category C - Trees of Low Quality and Value
- Category U - Trees Recommended for Removal
- Proposed Tree Removals
- Proposed Tree Pruning Works
- Root Protection Areas
- Tree Shading Constraints
- Existing Site Features
- Proposed layout

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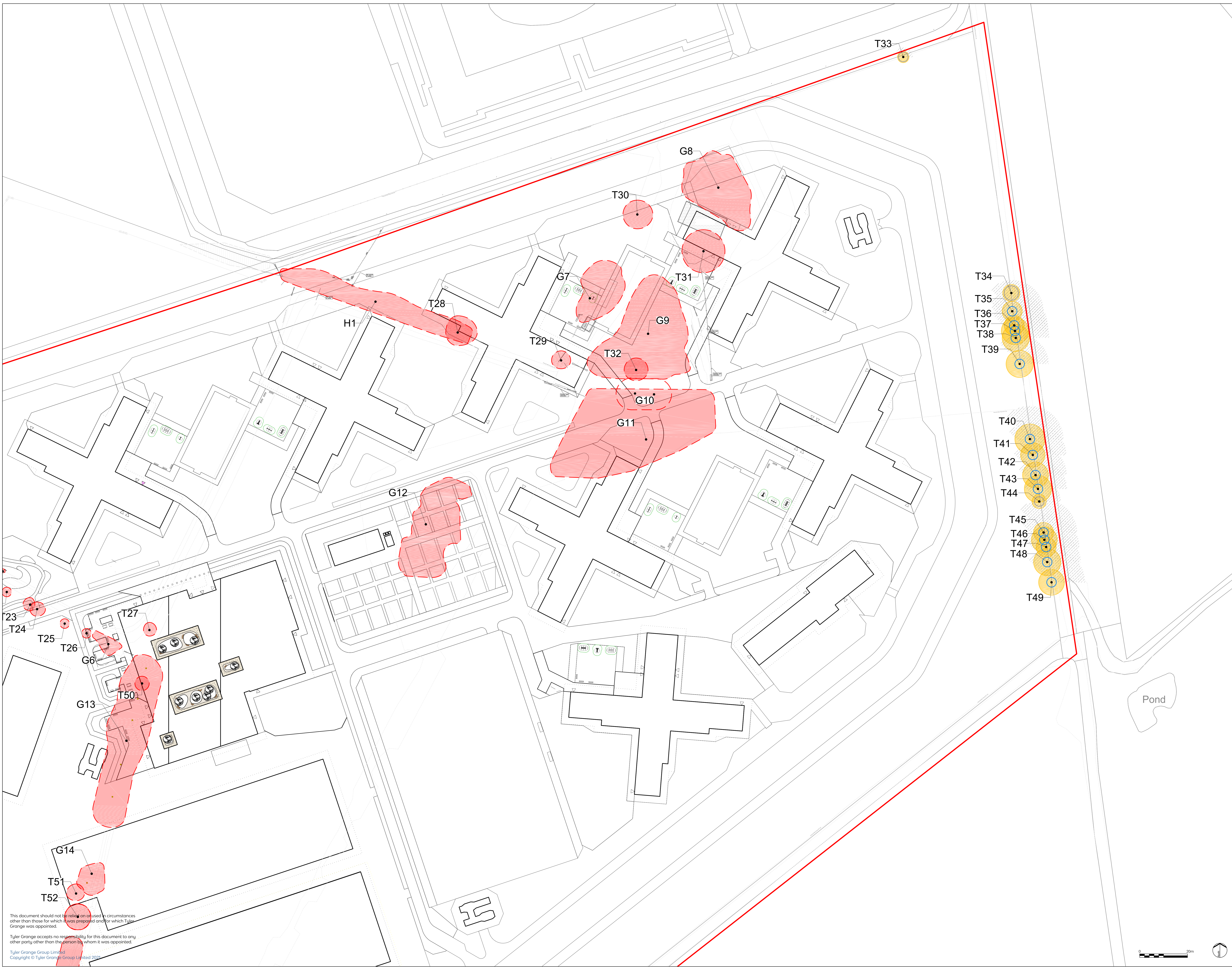
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| Drawing number 15500_P02 Sheet 1 of 2 | Drawn Checked Revision |
| | RA JP - |





- Survey Boundary
- Category B - Trees of Moderate Quality and Value
- Category C - Trees of Low Quality and Value
- Category U - Trees Recommended for Removal
- Proposed Tree Removals
- Proposed Tree Pruning Works
- Root Protection Areas
- Tree Shading Constraints
- Existing Site Features
- Proposed layout

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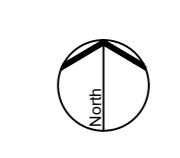


Project title
Gartree 2

Drawing title
Tree Retention and Removal Plan

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|----------------|------------------------|----------|----|
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Plan 3: Tree Protection Plan





- Survey Boundary
- Category B - Trees of Moderate Quality and Value
- Category C - Trees of Low Quality and Value
- Category U - Trees Recommended for Removal
- Proposed Tree Removals
- Proposed Tree Pruning Works
- Root Protection Areas
- Existing Site Features
- Proposed layout
- Tree Protection Barrier Locations
- Secondary Tree Protection Barrier Locations
- Manual Excavation within RPAs
- Above-soil surfacing within RPAs

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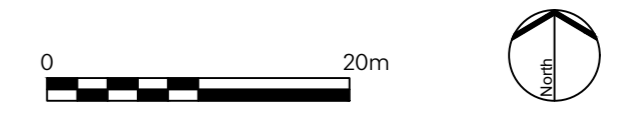
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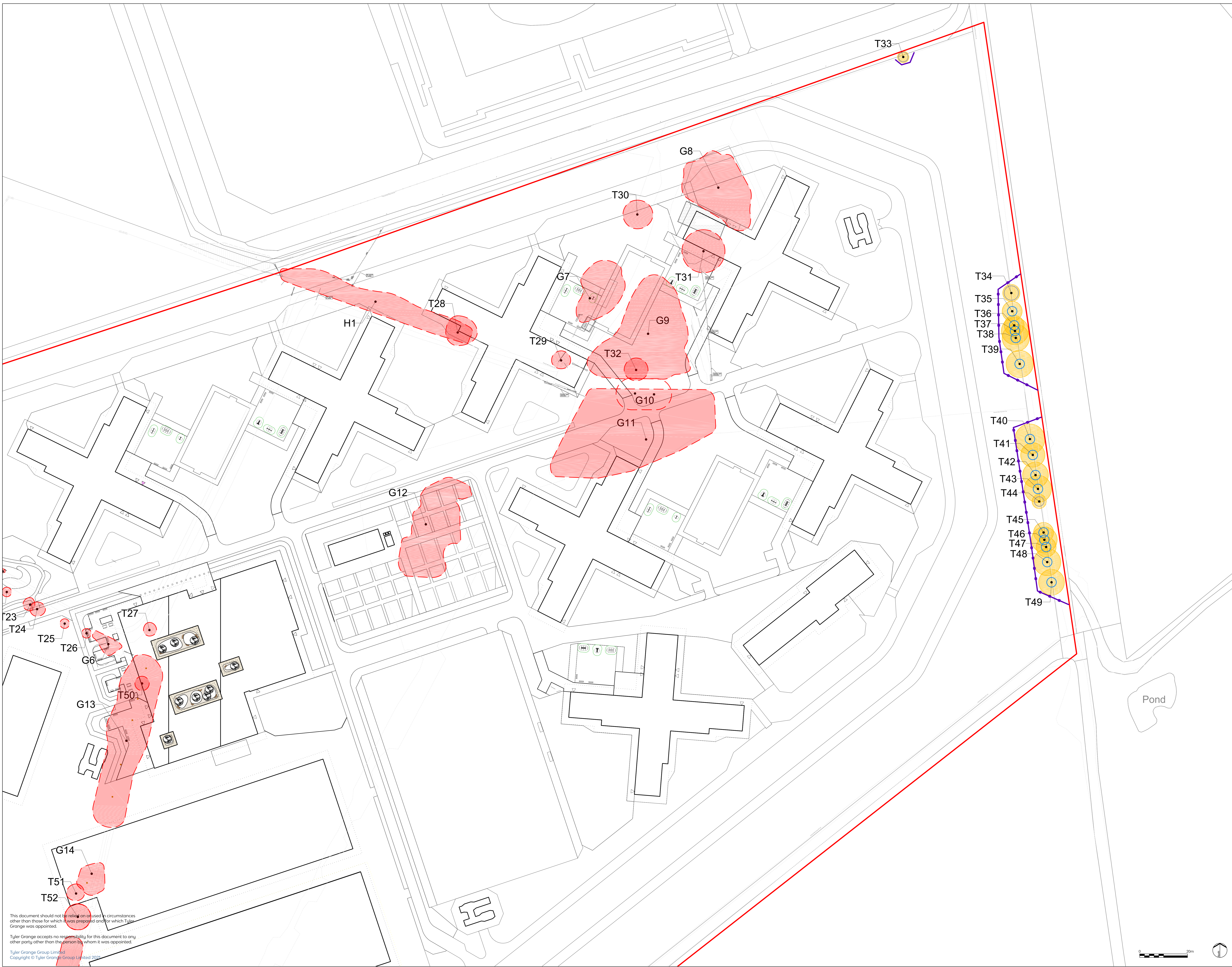
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- Survey Boundary
- Category B - Trees of Moderate Quality and Value
- Category C - Trees of Low Quality and Value
- Category U - Trees Recommended for Removal
- Proposed Tree Removals
- Proposed Tree Pruning Works
- Root Protection Areas
- Existing Site Features
- Proposed layout
- Tree Protection Barrier Locations
- Secondary Tree Protection Barrier Locations
- Manual Excavation within RPAs
- Above-soil surfacing within RPAs

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Project title
Gartree 2

Drawing title
Tree Protection Plan

Scale 1:500 @ A0
Date 08.07.2021
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Plan 4: Arboricultural Method Statement



Specification: Tree Removals and Pruning Works

1. Tree removals necessary to implement the proposals are identified by a dashed **Red** tree canopy outline with solid red hatched center, as shown on the **Tree Retention and Removal Plan (13500/P02)**.

Tree removals will be restricted to:

| Tree Category Grading | Number of Removals Required |
|-----------------------|------------------------------|
| Category A | None |
| Category B | 5x trees, 4x groups |
| Category C | 15x trees, 8x groups |
| Category U | 1x trees |
| Total | 21x trees, 12x groups |

3. Trees to be removed will be clearly identified on-site (via spray marking / taping / tagging as required) by an appointed project Arboriculturalist to avoid erroneous tree felling.

4. Tree removals works should be carried out prior to the installation of tree protection barriers.

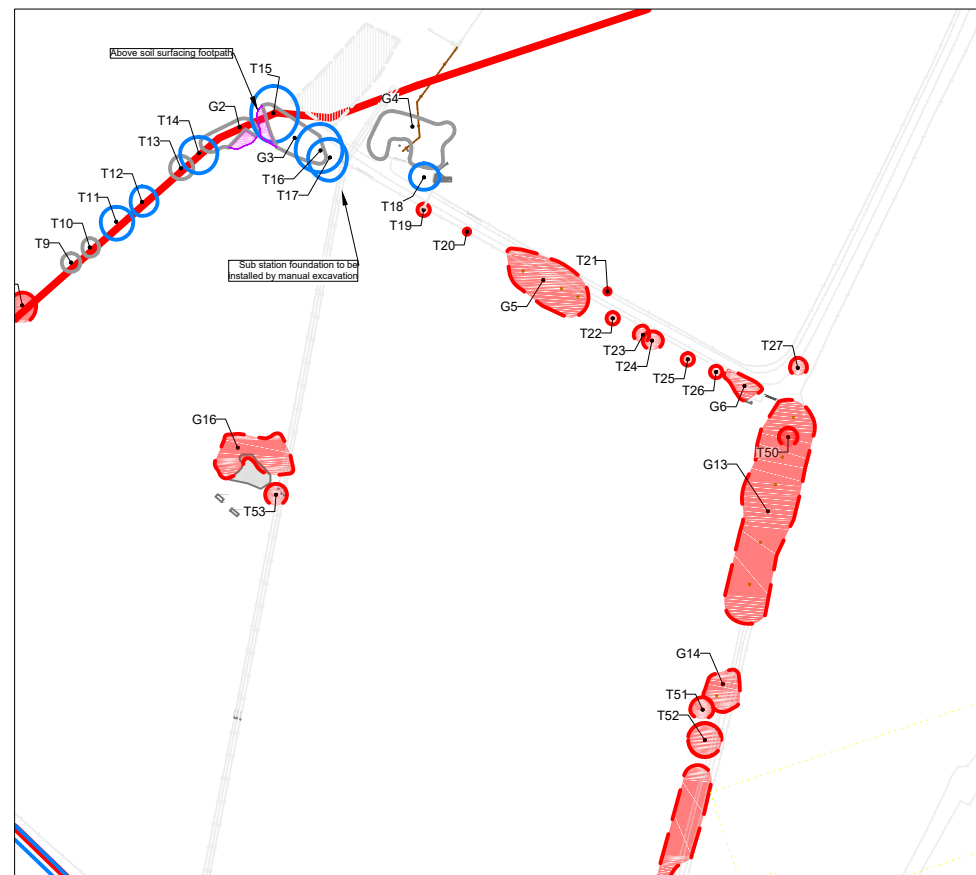
5. Particular care is required when removing the trees established within cohesive groups to avoid damage to the retained tree cover. Remaining stumps from felled trees must be carefully ground out as opposed to pulled out with a machine where required. This is required to avoid up-rooting and disturbance within the rooting environment of adjacent retained trees.

6. Tree works must be undertaken in accordance with BS3998:2010 by a competent tree contractor and should avoid the main nesting season for birds between 1st March and 31st August each year. If such timescales are unachievable, the advice of an ecologist will need to be sought to determine any further necessary protective and precautionary working measures to avoid disturbance to nesting birds and other wildlife.

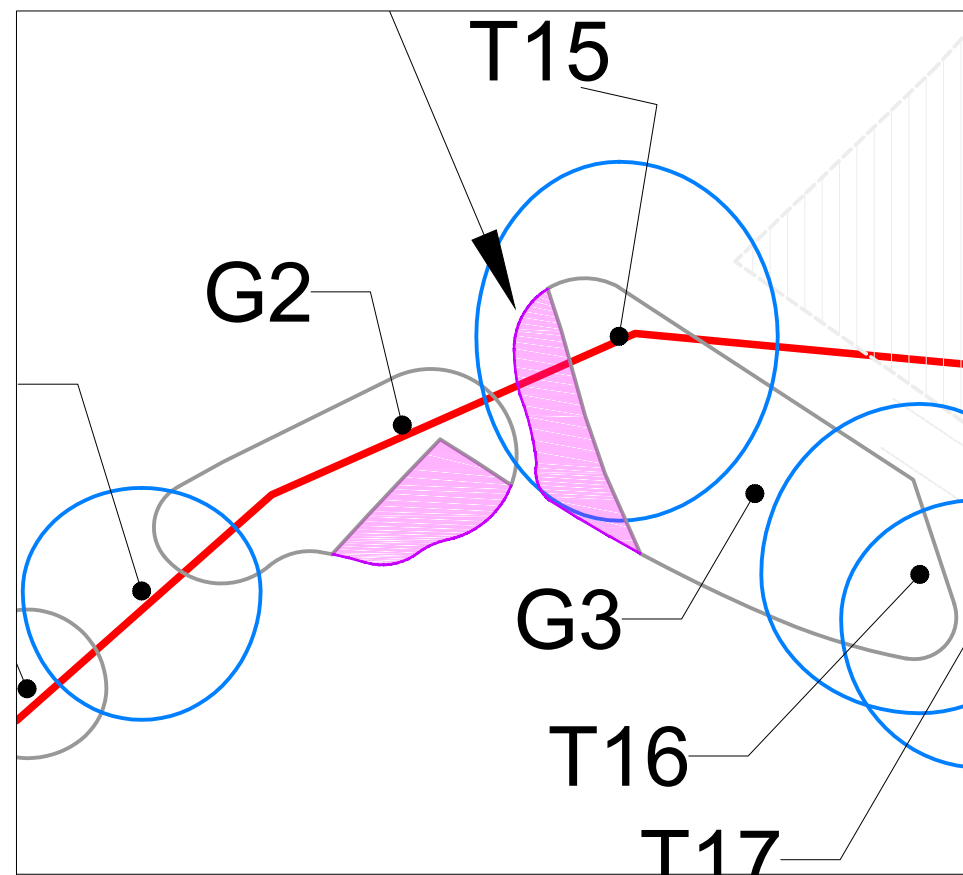
Tree Pruning

1. Two groups require cutting back either by pruning or selective removals as required. These areas are shown as with a **pink hatch** on the Tree Retention Removal Plan ref:13500_P02


2. Tree works must be undertaken in accordance with BS3998:2010 by a competent tree contractor and should avoid the main nesting season for birds between 1st March and 31st August each year. If such timescales are unachievable, the advice of an ecologist will need to be sought to determine any further necessary protective and precautionary working measures to avoid disturbance to nesting birds and other wildlife.



Extract from Tree Retention and Removal Plan (13500/P02) showing some areas of Tree Removals



Extract from Tree Retention and Removal Plan (13500/P02) showing all areas of tree pruning

| | |
|---|-------------------|
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| Drawing Title Arboricultural Method Statement -01 | |
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| Scale NTS | Date 7.07.2021 |
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Specification: Tree Protection Barriers

Tree Protection Barriers

1. The purpose of tree protection barriers is to prohibit access into areas around the tree, that require protection from construction activity, such as tree roots, trunks and branches.
2. Tree protection barriers will be fully installed before the arrival of any plant or demolition/construction activity on-site. Except where stated in this AMS, tree protection barriers will remain in place for the duration of the development.
3. The locations of tree protection fencing is shown by a **squared purple line** or on the **Tree Protection Plan (13500_P03)** for construction phases of the development.
4. Secondary tree protection fence is shown with a **purple double circle line**. secondary fence is to be installed at the same time and in the same fashion as the main fence but can be removed to allow for the construction of special detail such as no-dig surfacing
5. A DXF document can be provided digitally proving a ground surveyor with the accurate location of the TPF
6. Tree protection fencing will consist of the default specification recommended within BS5837:2012, comprising a scaffold framework, well braced to resist impacts, with vertical tubes spaced at a maximum of 3m to add further stability. Onto this, weldmesh panels will be securely fixed with wire or scaffold clamps (see extract of BS 5837 - Figure A).
7. Special attention is essential in maintaining the protective barriers during the development, ensuring that it remains rigid and complete as well as fit for the purpose intended. To avoid disturbances to the protective barriers once installed, they will be inspected frequently, including during site visits by the project Arboriculturist. Repairs shall be made immediately where required.
8. All-weather notices will be attached to the barriers with words such as 'Construction Exclusion Zone - No Access' (see **Figure B and Appendix 4** for a full A4 size).

Figure A: Default specification for protective barrier

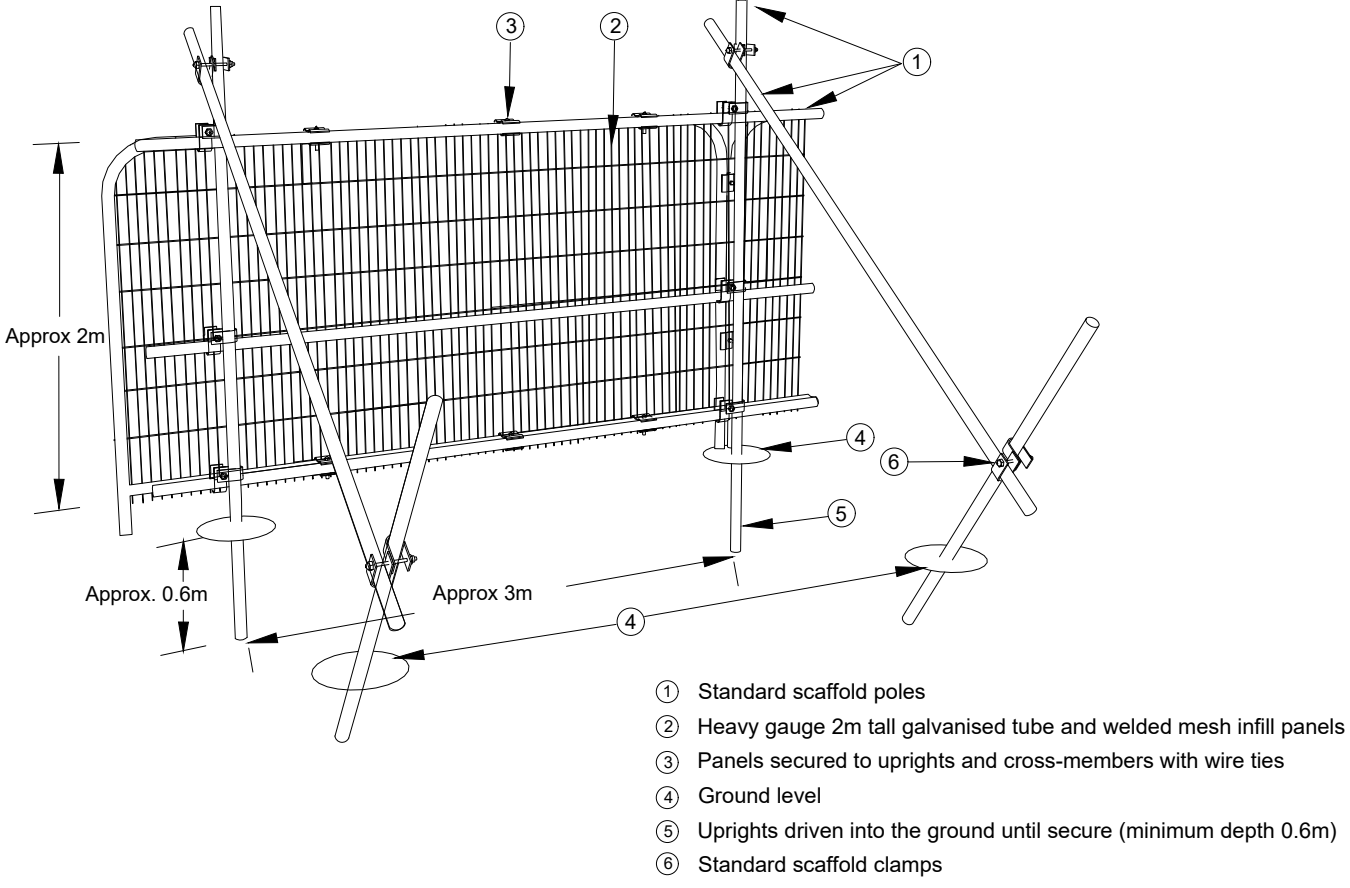
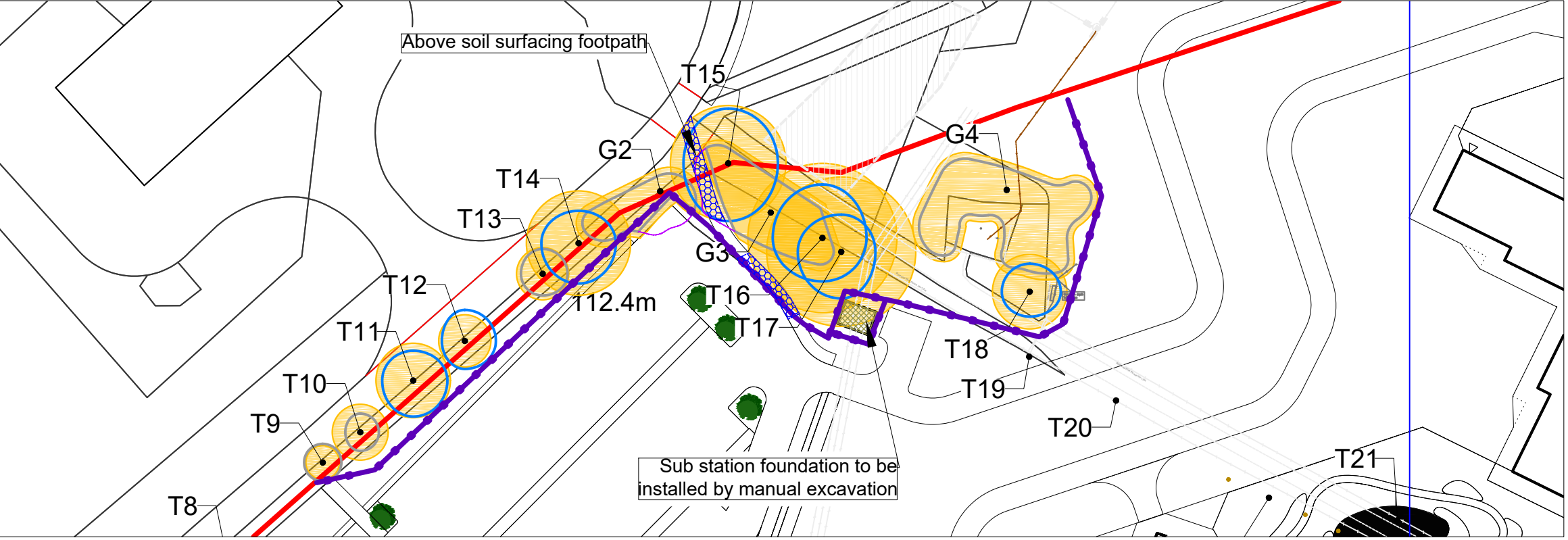



Figure B: Signage Example



Extract from Tree Protection Plan (13500-P03)

| | |
|---|--------------------|
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Specification: Works within Root Protection Areas

1. Sensitive excavations within RPAs

- The **Tree Protection Plan - 13500-P03** identifies where excavation must be undertaken manually within RPAs with a **brown checkered hatch**. The work is relevant for T6, T10 to T13 and G3. **Figure A** illustrates a typical methodology for this work.
- The excavation works as detailed above will be carried out in accordance with the following protective measures in accordance with BS5837:2012:
 - All works must be carried out under direct supervision of an appropriately qualified Arboriculturist;
 - Excavation within the RPAs will be carried out using hand-held tools or by compressed air displacement;
 - A light weight machine will only be used where practical and at the discretion of the supervising Arboriculturist (typically for the displacement hard surfacing and imbedded rocks/rumble);
 - Single roots smaller than 25mm will be cleanly pruned back using a suitable sharp hand tool;
 - For trench excavations, roots will be retained by spanning the trench with services fed beneath;
 - Roots found over 25mm and where occurring as clumps will be not be immediately pruned back, the appointed supervising Arboriculturist will record the size and nature of the root, determine its significance to tree health, and specify proceedings accordingly;
 - Exposed roots will be covered with top soil or a hessian sack to avoid root desiccation;
 - Exposed roots to be retained as part of the construction will be supported by sharp sand; and
 - Due to the highly alkaline leachate produced during the curing of wet concrete, concrete should not be poured within the RPA unless an impermeable liner has been installed. Holes must therefore be sheathed to reduce the risk of contamination where concrete is to be implemented.

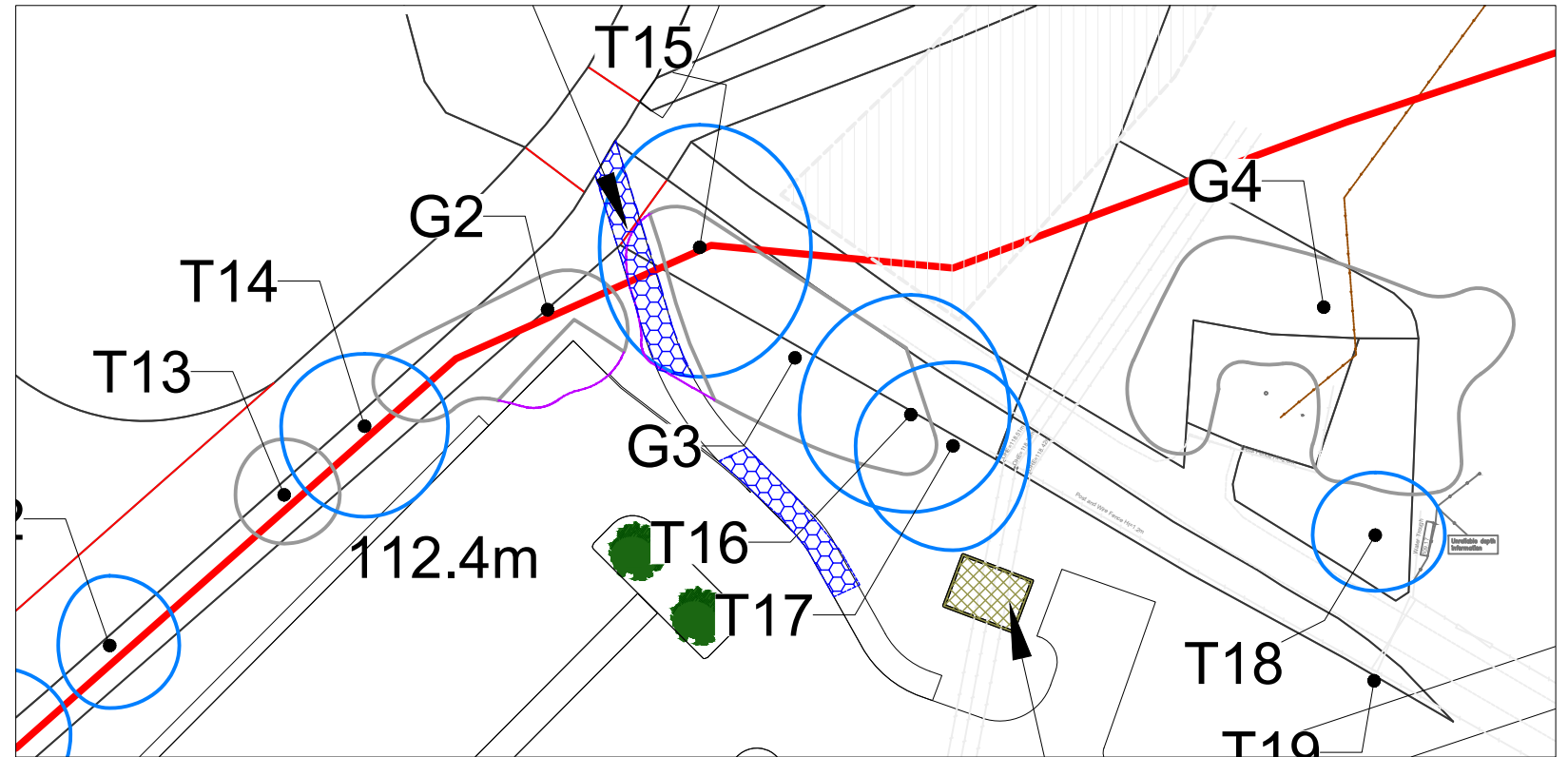


Figure A: Identifying typical methodology/arrangement for manual excavation works within RPA

New surfacing within RPAs (Construction Phase)

- The **Tree Protection Plan 13500/P03** identifies where new surfacing is proposed within the RPA of T15, T16, T17 with a **blue honeycombed hatch**.
- Works to implement the proposed porous surface within the RPAs and will utilise a no-dig technique as detailed below. The surface will be created using a porous material and granular wearing course/sub-base system, retained by non-invasive timber edging (see **Figure B** cross-section below).
- A no-dig solution using a 75mm Cellweb Tree Root Protection system will require that only turf layers and other vegetation need to be removed from the surface as the Cellweb system does not require excavation into the soil, therefore avoiding damage to tree roots. Construction will need to be undertaken by hand and with care not to disrupt the ground condition within the RPA.
- A separation fabric, using the Treetex T-300 Geotextile (Geosynthetics Ltd), will be laid directly onto the ground as a separation and filtration layer. Treetex T-300 also acts as a pollution control layer to protect the soils beneath. Angular 40/20mm stone will then be laid as a sub-base to allow for variable levels and soil conditions within the site. The [75mm] Cellweb Tree Root Protection system will then be laid, (strictly as per the manufacturer's specification – see Appendix 3) and filled with the same stone as infill to provide a load-bearing and permeable structure suitable for pedestrian movements.

See Figure A

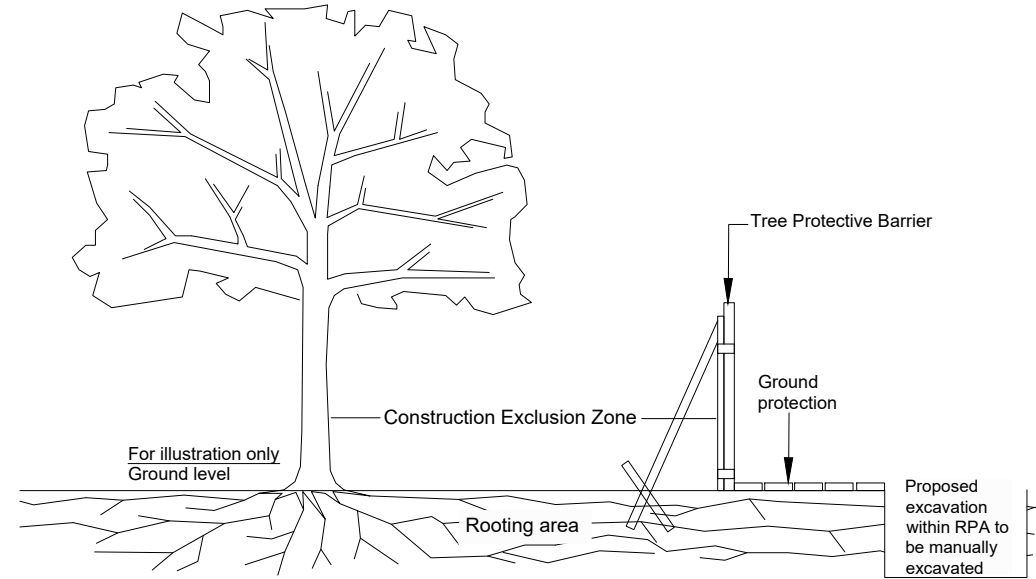
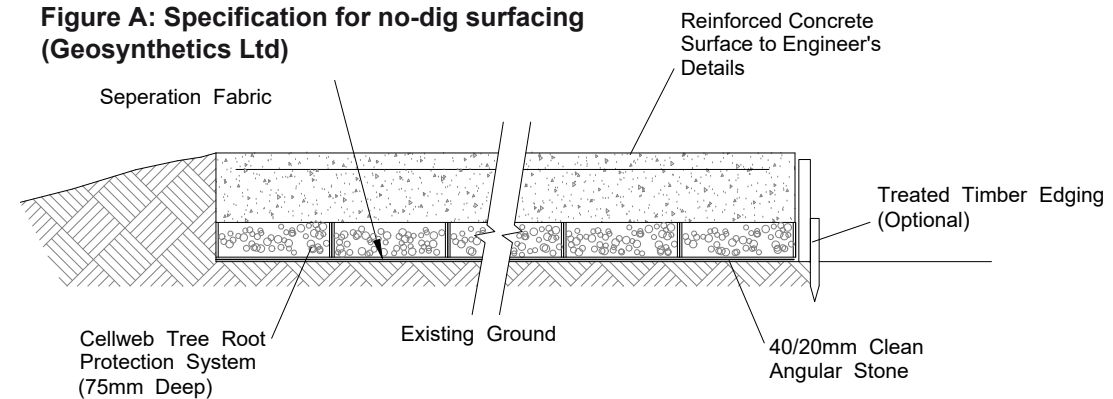


Figure A: Specification for no-dig surfacing (Geosynthetics Ltd)



Project Name
HMP Gartree 2

Drawing Title
Arboricultural Method Statement -03



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