

Preliminary Arboricultural Impact Assessment



Kings Croft Farm, Havant

29th June 2022



**Tyler
Grange**

TG Report No. 13813_R02b_WS_CW

Report No:	Date	Revision	Author	Checked
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Summary

- S.1. This report details the findings of a tree survey and the potential impacts toward existing trees to accommodate the proposed new development at Kings Croft Farm, Havant. The survey and assessment work has been completed by a suitably qualified arboricultural consultant of Tyler Grange Group Ltd (TG) on behalf of Foreman Homes Ltd.
- S.2. The site comprises an area of pastoral land situated on the southwestern edge of Havant, between the Hermitage Stream and existing residential and commercial development west of Brockhampton Road. It comprises paddocks and contains small structures associated with that use.
- S.3. The baseline survey and preliminary assessment of impacts have been completed in accordance with the British Standard 5837 (2012) in accordance with industry best practice.
- S.4. Three trees of high arboricultural value are present at the site, located toward the northern and central areas of the site. The majority of the site's tree cover includes trees of moderate to low quality value which comprise established boundary screen planting.
- S.5. A desk study was undertaken, which confirmed that the site does not lie within a Conservation Area, nor are any trees present on site subject to a Tree Preservation Order.
- S.6. The illustrative Masterplan has been designed to retain the vast majority of the surveyed tree stock present on site. Internally, necessary tree losses are limited to two groups of low quality (G2 and G3), which require removal to facilitate the development as proposed.



Section 1: Introduction

Context

- 1.1. This Preliminary Arboricultural Impact Assessment has been prepared by Tyler Grange Group Ltd on behalf of Foreman Homes Ltd to accompany an outline planning application at Kings Croft Farm, Havant.
- 1.2. Outline planning permission is sought for a residential development. The indicative layout of the proposed development is shown on the Illustrative Layout as shown within the **Preliminary Tree Retention and Removal Plan (TRRP) (13813/P02)** to the rear of this report.

Purpose

- 1.3. This report:
 - Provides the findings of a field-based tree survey and the associated tree constraints towards new development; and
 - Addresses the potential arboricultural impacts of the proposed development based on its indicative design in the context of local and national planning policy.
- 1.4. The tree survey and assessment have been guided by the recommendations set out within the British Standard 5837 (2012) 'Trees in relation to design, demolition and construction – recommendations' (hereafter 'BS5837') to accord with industry best practice

Planning Policy

- 1.5. The application is to be submitted to Havant Borough Council. Local planning policy and national planning policy pertinent to trees and the new development is set-out at **Appendix 1**.



Section 2: Baseline Information

Site Description

- 2.1 The site comprises an area of pastoral land situated on the southwestern edge of Havant, between the Hermitage Stream and existing residential and commercial development west of Brockhampton Road. It comprises paddocks and contains small structures associated with that use. The site boundary is demarcated by the red line as illustrated in **Figure 1.1** below.



Figure 1.1: Indicative Site Boundary and Location (Bing Maps).

- 2.2 The tree survey was completed by a suitably qualified Arboricultural Surveyor of Tyler Grange Group Limited. The survey was completed in accordance with BS5837 and the methodology as detailed at **Appendix 2**. 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 surveyed is illustrated on the **TCP** together 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 3)**. 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.

Tree Survey Summary

2.5 A total of 12no. individual trees and 11no. groups of trees were identified during the tree survey of the site and its immediate vicinity.

2.6 The tree cover consists largely of moderate to low quality boundary screen planting, bordering the site to the east, south and west. The tree species present are predominantly Hawthorn and Norway Maple, with areas of understory shrubs. There are three trees of high quality present on site, with two located on the northern boundary and one situated within the centre of the site. Additionally, there are a number of Ash trees assessed as unsuitable for retention regardless of any development proposals due to their poor overall condition and limited remaining life expectancy.

Tree Grading Summary

2.7 The trees surveyed have been categorised using the 'cascade chart for tree quality assessment' (See **Appendix 3**) 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.

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

² 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. See further explanation at Appendix 3.

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

⁴ Shade 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 The category gradings for each survey is detailed in the table below.

Table 1. Category grading of arboricultural features

	Category U	Category A	Category B	Category C
Individual Trees	T9	T10, T19, T20	T5, T6	T7, T16, T18
Groups of Trees	-	-	G1, G8, G11	G2-G4, G12-G15, G17

High Value Trees (Category A)

2.9 Trees of high arboricultural value (Category A) are denoted by a Green tree canopy outline, as illustrated on the TCP. They represent significant mature specimens to be retained within suitable landscape buffers from development design, as they represent specimens that are particularly good examples of their species, often with particular visual importance as arboricultural or landscape features. They are to be retained within suitable landscape buffers from development and incorporated into the green infrastructure proposals of the site.

2.10 A total of three high-value trees were identified within the influence of the site boundary. These predominantly include large mature Norway Maple, Beech, and Austrian Pine specimens established at the site, all of which showed good potential for retention as trees of high arboricultural and amenity value.

Moderate Value Trees (Category B)

2.11 Trees of moderate arboricultural value (Category B) are denoted by a Blue tree canopy outline, as illustrated on the TCP. They signify those that provide a moderate arboricultural feature. Category B trees are considered desirable to retain as part of the development, where possible, as they include well-established mature trees and groups of trees with good future potential.

Low Value Trees (Category C)

2.12 Trees of low arboricultural value (Category C) are denoted by a Grey tree canopy outline on the TCP. These primarily consist of self-seeded trees established within the site, or poorly managed hedgerows, often with large gaps. The remaining tree cover is considered to provide limited or transient benefits which may be readily replaced in the existing context. Such trees subsequently presented a minimal constraint to proposed development from an arboricultural perspective.

Trees Unsuitable for Retention (Category U)

2.13 Two trees were identified that are considered to be in such a condition that they cannot realistically be retained as a living trees in the existing context (Category U), denoted by a dark Red tree canopy outline on the TCP.

Tree-related Designations

2.14 Following a background check of Havant Borough Councils available online mapping (dated 18/05/2022), the presence or absence of tree-related designations is detailed in **Table 2.1** below.



Table 2. Tree-related Designations / Tree References Numbers

Designation Type	TG Tree Reference Number(s)
Tree Preservation Order ⁵	None
Conservation Area ⁶	None
Ancient Woodland ⁷	None
Woodland Habitat ⁸	None

⁵ A Tree Preservation Order is an order made by a local planning authority in England to protect specific trees, groups of trees or woodlands in the interests of amenity. An Order prohibits the any works and damage to trees (with some exceptions) without the local planning authority's written consent. More information can be found online <https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas#tree-preservation-orders--general>.

⁶ Trees in a conservation area that are not protected by an Order are protected by the provisions in section 211 of the Town and Country Planning Act 1990. These provisions require people to notify the local planning authority, using a 'section 211 notice', 6 weeks before carrying out certain work on such trees, unless an exception applies. More information can be found online <https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas#tree-preservation-orders--general>.

⁷ 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.

⁸ 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: Preliminary Arboricultural Impact Assessment

- 3.1. This Preliminary Arboricultural Impact Assessment has been undertaken to address the outline development proposals in relation to existing trees.
- 3.2. The assessment is informed by a composite overlay of the tree survey information and proposed Illustrative Layout which is shown on the **Preliminary Tree Retention and Removal Plan (TRRP)** located to the rear of this report.
- 3.3. The proposed development is presented in outline ahead of preparing fully detailed designs. This assessment therefore should be considered as an initial appraisal of expected arboricultural impacts. It is reasonable to expect that changes to the general layout of the development would form part of subsequent detailed designs. Further assessment work will therefore be required to provide a definitive assessment of arboricultural impacts based on proposals presented in detail.

Expected Tree Retention and Removal

- 3.4. The likely extent of tree removal to accommodate the development is illustrated on the **TRRP** and is further detailed in **Table 3.1** below by reference to tree category grading.

Table 3.

Tree Number / Grading Category	Description of Loss
G2 (Category C)	Removal of the group to facilitate construction of development as proposed.
G3 (Category C)	Removal of the group to facilitate access for construction of adjacent dwellings as proposed
T9 & T22 (Category U)	Removal of trees regardless of development due to limited future life expectancy.

Potential Works within Root Protection Areas

- 3.5. The **TRRP** shows the RPAs of retained trees in relation to the indicative layout of the development.
- 3.6. There are potential incursions into the RPA of the southern extent of G4, the eastern extent of G8, and discrete locations along the western edge of G11. An area of hard surfacing is also proposed within the RPAs of G4 and G8.
- 3.7. These incursions are minimal and not anticipated to have an adverse effect on the longevity of these three groups. The incursions into G11 are slightly larger and would require mitigation to adequately protect the RPAs during the construction phase of the development. Where minor built form is required to be positioned in the RPAs as currently shown, such works will need to utilise a no-dig technique. Such works would be fully detailed and specified within an Arboricultural Method Statement (AMS), which would be prepared to discharge suitably worded pre-commencement planning conditions to safeguard existing tree stock during the construction phase of development, but the principle of implementing such works is set out below.



- 3.8. Surface treatment can utilise permeable tarmac or permeable block paving (or similar) to maintain water and aeration in relation to the calculated site-side RPAs. A no-dig solution using 75mm – 150mm Cellweb Tree Root Protection systems (or similar; see example Figure 3.2 below) 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 damage the adjacent canopies or to disrupt the ground condition within the surrounding RPA.



Figure 3.2: Root Protection System Example.

- 3.9. Separation fabric, using the Treetex T-300 Geotextile (Geosynthetics Ltd) will be laid directly onto the ground as a separation and filtration layer, an illustrative cross section of which is included below (see Figure 3.3). 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 specified depth of Cellweb Tree Root Protection system will then be laid and filled with the same stone as infill to provide a load-bearing and permeable structure suitable for pedestrian movements.
- 3.10. Alternatively, these incursions could be largely removed if there is scope to shift the proposed dwellings west by approximately 3m. the remaining incursions are boundary treatments, such as fencing, which can be constructed by digging exploratory holes for posts, under the supervision of a suitably qualified arboriculturist.

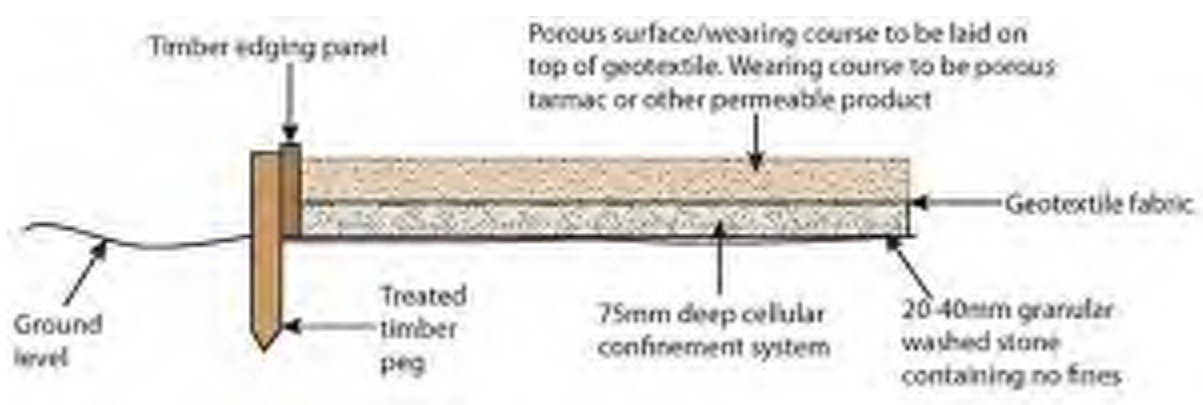


Figure 3.3: Illustrative Cross Section of Root Protection System.

- 3.11. Any plot boundary fence posts can be hand dug and realigned if required to avoid principal tree-roots with holes being sheathed with an impenetrable membrane to avoid contamination of concrete in relation to tree roots. Any paving slabs which are to be laid within the RPAs can be dry-



jointed on a sharp sand, or coarse aggregate no-fines, foundation to allow air and moisture to penetrate to the rooting area.

- 3.12. Any requirement for excavation in close proximity to RPAs would also be overseen by a suitably qualified arborist to ensure that any identified tree roots are appropriately managed and protected. Site monitoring and full details of construction phase mitigation would be stipulated as part of a later Arboricultural Method Statement (AMS) report.

Proximity trees to new development

- 3.13. The social proximity associated with retained trees has been recognised in relation to the potential impacts of tree shading and future canopy growth towards newly occupied buildings.
- 3.14. The **TRRP** illustrates where shade cast by retained trees will be located for the main part of the day across the development and the distance between new built structures and the canopies of retained trees.

New Tree Planting Opportunities

- 3.15. If a landscape masterplan is not available / been prepared, high-level recommendations should be made for replacement and new tree planting where this is possible on the layout provided.
- 3.16. In the absence of detailed soft-landscaping proposals at this outline stage, the level of indicative tree planting shown, together with the retained trees, suggests that the proposed scheme be set within well-treed environment.
- 3.17. The detailed landscape proposals should include a mixture of native trees and specimen trees within the landscape margins and green open space. Specimen trees of landscape and amenity value should be incorporated into new street scenes where possible, which would be in-line with Sections 12 and 15 of the National Planning Policy's aspirations for new residential development to include tree-lined streets.
- 3.18. All new tree planting is to comply with the relevant British Standards and be obtained from approved sources. They will be good, well-formed, healthy specimens, free from disease and damage to stems, branches, roots, and foliage and have a vigorous root system with a reasonable proportion of fine fibrous rootlets. Comply with Code of Practice for Plant Handling, during lifting, packaging, transportation to site and while on site until final planting. All whips and transplants to have tree guards / spiral guards. New trees will be planted in tree pits of a suitable size and depth for the standard of tree planting and will be subject to maintenance and replacement planting for any trees which fail during the initial 12 months maintenance period, to be carried out under the Maintenance / Management plan for the site. This will ensure that appropriate measures are in place to secure the long-term maintenance of newly planted trees, in-line with Section 12 of the NPPF.

Construction Mitigation

- 3.19. Given the indicative nature of the proposed design at this stage, a detailed methodology for tree protection during the site preparation and construction stages has not been prepared.



- 3.20. During the detailed planning and design phase of the proposed development, it will be necessary to demonstrate how the above and below ground structures of retained tree cover will be protected during the construction of development. It is therefore recommended that a full Arboricultural Method Statement (AMS) is prepared as part of a reserved matters application or to discharge applicable and suitably worded planning conditions.
- 3.21. An AMS will set out a practical methodology to the protection of retained trees based on detailed designs, including groundworks, services, and new landscaping. The AMS will typically include the following key items:
- A schedule and specification of tree removal and pruning works;
 - Specifications for tree protection barriers and ground protection;
 - Procedures for any specialist construction techniques / any supervised excavations within RPAs (if required)
 - Phasing of work;
 - Site monitoring (where required); and
 - A Tree Protection Plan.



Section 4: Conclusion

- 4.1 This report sets-out the findings of a tree survey and provides a preliminary assessment of arboricultural impact to accompany the submission of an outline planning application for a residential development as proposed.
- 4.2 None of the trees surveyed are subject to a Tree Preservation Order nor are they located within a Conservation Area. 3no trees of high arboricultural value are present on the site. The site's tree cover includes trees of low to moderate value which comprise established boundary planting and associated shrub understory within the site's soft landscape.
- 4.3 The Illustrative Masterplan demonstrates the retention of trees. Tree removals will be required internally to accommodate the development, all of which are low value trees. The development is considered to demonstrate accordance with local planning policies CS13 and DM8.
- 4.4 Further work is recommended to include an Arboricultural Method Statement to accompany a **subsequent** reserved matters application and / or discharge of suitably worded planning conditions.



Appendix 1: Planning Policy Context

- A1.1 Under the Town and Country Planning Act 1990 (as amended) the requirement to consider trees as part of development is a material planning consideration and will be taken into account in the determination of planning applications. Applicable arboricultural planning policy that relates to the site is set out below at a National and Local level.

National Planning Policy

- A1.2 The National Planning Policy Framework (NPPF) is a material consideration in planning decisions and outlines the Government's planning policies for England, setting out how these are expected to be applied. 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.
- A1.3 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."*
- A1.4 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"*
- A1.5 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".*
- A1.6 At a national level, the consideration for trees is recognised in the context of their contribution green infrastructure and biodiversity networks, and also in terms of their contribution in landscape terms to the local setting and character to a place. Great weight is also applied to the importance of conserving existing aged trees, including ancient woodland and trees and trees considered to be 'veterans'.



Local Planning Policy

A1.7 Local planning policy relating to trees and new development is set-out at Policy CS13 and DM8 of Havant Borough Council's Local Plan as set-out below.

A1.8 Policies CS13 and DM8 state that:

Policy CS13 Green Infrastructure

Development will be permitted that:

- 1 Maintains and manages the network of green infrastructure identified at the subregional and local levels.*
- 2 Incorporates, where appropriate, improvements to existing green infrastructure through the restoration, enhancement or creation of additional resources.*
- 3 Does not undermine the functional integrity of the green infrastructure.*
- 4 Creates, where appropriate, new green infrastructure (including access management measures) either through on site provision or financial contributions.)*

Policy DM8 Conservation, Protection and Enhancement of Existing Natural Features.

Development will only be permitted where it protects and enhances local habitats and landscape distinctiveness and which addresses all of the relevant criteria as set out below.

- 5 Protects natural features of nature conservation and/or amenity importance on the site, for example trees, woodlands, hedgerows, soils, streams, stream corridors, springs, ditches or ponds from damage, destruction and a deterioration in quality.*
- 6 Sympathetically incorporates existing features into the overall design of the scheme including measures taken to ensure their continued survival.*
- 7 Provides new landscape works that integrate successfully with the local environment and existing natural features, using local materials and plant species and making provision for future maintenance of new landscape works associated with new developments.*
- 8 Ensures sequences of greenspaces are maintained and protects the attractiveness and visual amenity of all green open spaces that contribute to the identity of the borough.*



Appendix 2: Methodology, Constraints Mapping and Limitations

Field Work

- A2.1 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).
- A2.2 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.
- A2.3 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

- A2.4 Species are listed by their common name, both in the schedule and in the report text.

Height and Stem Diameter

- A2.5 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

- A2.6 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.
- A2.7 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.

- A2.8 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

- A2.9 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

- A2.10 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.

- A2.11 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.

- A2.12 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

- A2.13 The value of trees have 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

- A2.14 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.
- A2.15 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.
- A2.16 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.
- A2.17 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

- A2.18 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.
- A2.19 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.

- A2.20 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

- A2.21 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.
- A2.22 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

- A2.23 Any alteration to the application site or development proposals could change the current circumstances and may invalidate this report and any recommendations made.
- A2.24 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.
- A2.25 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 3: BS 5837:2012 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 4: Tree Survey Schedule



Tree Number	Common Species Name	Height (m)	Trunk Diameter and stem count	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
G1	Sycamore (Acer pseudoplatanus), Ash (Fraxinus excelsior)	16(3)	550(1)	5.00	7.00	5.00	7.00	3.00	Mature	Good	Fair	B2	Line of mature trees, mostly Sycamore, growing behind fence. Dimensions are estimated average. Diameter is estimated average.	6.6	137
G2	Hawthorn (Crataegus monogyna)	5(0)	150(3)	3.00	3.00	3.00	3.00	0.00	Mature	Good	Fair	C2	Small cluster of trees all with ivy smothering crowns Diameter is estimated average.	3.1	31
G3	Hawthorn (Crataegus monogyna), Elder (Sambucus nigra)	5(0)	100(1)	0.00	0.00	0.00	0.00	0.00	Mature	Good	Fair	C2	Dense line of trees, brambles growing into crowns along boundary fence to east. Diameter is estimated average.	1.2	5
G4	Hawthorn (Crataegus monogyna), Elder (Sambucus nigra), Aspen (Populus tremula), Sycamore (Acer pseudoplatanus)	10(0)	160(1)	0.00	0.00	0.00	0.00	0.00	Mature	Fair	Fair	C2	Area of vegetation along boundary. Comprises predominantly Hawthorn and Elder, some older Hawthorn are in decline. Aspen present only as saplings. Does provide some screening but generally of low quality.	1.9	12
T5	Sycamore (Acer pseudoplatanus)	9(3)	230(1)	4.00	3.00	4.00	2.50	3.00	Early Mature	Good	Fair	B2	Crown distorted due to group pressure.	2.8	24
T6	Norway Maple (Acer platanoides)	14(2)	510(1)	6.50	6.50	6.50	6.50	2.00	Mature	Good	Fair	B1	Stem divides at 1.8m forming multiple upright leadersOff-site and inaccessible: diameter estimated.	6.1	118
T7	Ash (Fraxinus excelsior)	9(3)	230(1)	5.00	5.00	5.00	5.00	3.00	Mature	Fair	Fair	C2	Major bark wounding on stem.	2.8	24

Tree Number	Common Species Name	Height (m)	Trunk Diameter and stem count	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
G8	Hawthorn (Crataegus monogyna), Ash (Fraxinus excelsior)	5(0)	120(1)	0.00	0.00	0.00	0.00	0.00	Mature	Good	Fair	B2	Dense boundary group of Hawthorns lightly interspersed with Ash. Hawthorns do not warrant a higher collective group rating and provide screening. Diameter is estimated average.	1.4	7
T9	Ash (Fraxinus excelsior)	9(2)	240(1)	6.00	6.00	6.00	2.00	2.00	Mature	Poor	Fair	U	Nearly all bark been removed around stem by horses	2.9	26
T10	Norway Maple (Acer platanoides)	15(3)	490(1)	6.50	6.50	7.00	5.50	3.00	Mature	Good	Fair	A2	Branches encroaching upon building. Dense crown	5.9	109
G11	Hornbeam (Carpinus betulus), Hawthorn (Crataegus monogyna)	14(0)	350(1)	0.00	0.00	0.00	0.00	0.00	Mature	Good	Fair	B2	Line of Hornbeams situated adjacent from smaller understory Hawthorns. Forms screen to site. Diameter is estimated average.	4.2	55
G12	Hawthorn (Crataegus monogyna)	7(0)	160(1)	0.00	0.00	0.00	0.00	0.00	Mature	Fair	Fair	C2	Line of Hawthorn along boundary. Lower branches been grazed	1.9	12
G13	Willow (Salix sp.)	9(0)	450(1)	6.00	6.00	6.00	6.00	0.00	Mature	Fair	Fair	C2	Cluster of willows canopies growing as one. Diameter is estimated average.	5.4	92

Tree Number	Common Species Name	Height (m)	Trunk Diameter and stem count	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
G14	Hawthorn (Crataegus monogyna), Blackthorn (Prunus spinosa)	4(0)	75(2)	0.00	0.00	0.00	0.00	0.00	Early Mature	Fair	Fair	C2	Possibly once a hedgerow that's now dilapidated and becoming overgrown with brambles and ivy	1.3	5
G15	Hawthorn (Crataegus monogyna), Blackthorn (Prunus spinosa), Elder (Sambucus nigra)	4(0)	75(2)	0.00	0.00	0.00	0.00	0.00	Early Mature	Fair	Fair	C2	Possibly once a hedgerow that's now dilapidated and becoming overgrown with brambles and ivy.	1.3	5
T16	Elder (Sambucus nigra)	6(1)	260(5)	4.00	4.00	4.00	4.00	1.00	Over Mature	Good	Fair	C2	Objects and wire nailed to stem.	7.0	153
G17	Elder (Sambucus nigra)	4(0)	100(1)	2.50	2.50	2.50	2.50	0.00	Mature	Fair	Fair	C2	Cluster of Elder	1.2	5
T18	Ash (Fraxinus excelsior)	7(3)	320(1)	3.50	3.50	3.50	3.50	3.00	Early Mature	Fair	Fair	C2	Slight kink in lower stem	3.8	46
T19*	Austrian Pine (Pinus nigra)	18(4)	800(1)	13.00	13.00	13.00	13.00	4.00	Mature	Good	Fair	A2	Plotted by eye on plan. Growing behind wall with canopy overhanging. Limited view but looks to be of Good conditionOff-site and inaccessible: diameter estimated.	9.6	290
T20*	Beech (Fagus sylvatica)	14(3)	650(1)	10.00	10.00	10.00	10.00	3.00	Mature	Good	Fair	A2	Plotted by eye on plan. Growing behind wall by looks to be in Good conditionOff-site and inaccessible: diameter estimated.	7.8	191

Tree Number	Common Species Name	Height (m)	Trunk Diameter and stem count	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
T21*	Norway Maple (Acer platanoides)	18(3)	650(1)	5.00	5.00	7.00	7.00	3.00	Mature	Fair	Good	C2	Dense ivy on stem, Crown late to flush. Poor extension growth. Off-site and inaccessible: diameter estimated.	7.8	191
T22*	Norway Maple (Acer platanoides)	18(3)	650(1)	6.00	7.00	3.00	2.00	3.00	Mature	Dead	Dead	U	Dead. Off-site and inaccessible: diameter estimated.	7.8	191
T23*	Norway Maple (Acer platanoides)	18(3)	650(1)	7.00	5.00	1.00	5.00	3.00	Mature	Fair	Good	B2	Limited access looks to be of Good quality. Off-site and inaccessible: diameter estimated.	7.8	191

Appendix 5: Illustrative Site Layout Plan





Please Note:
This drawing must not be scaled, dimensions to be checked on site and any discrepancies are to be highlighted to the Architect prior to construction.
Prior to the commencement of any works, the Contractor is to check and / or determine all construction details including checking existing site levels and dimensions.
This drawing is to be read in conjunction with all other project drawings, construction notes and / or project specifications including those by other project consultants and specialists. All discrepancies should be reported immediately.
Design subject to detail development / approval.
Measurements and accommodation schedules subject to amendments following coordinated input by others.
Costings cannot be finalised until approval / confirmation by relevant authorities and Client.

Further design information:



E	Amended to client's comments	21.06.22	VP/HJE
D	Access amended to highways' design	17.05.22	VP/HJE
C	Amended to client's comments	13.05.22	VP/HJE
B	Red line removed	26.04.22	VP/HJE
A	Amended to client comments	11.04.22	DY/HJE

Rev.	Description	DATE	DB / CB
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Date Apr '22
Drawn By/Checked By VP / HJE
Scale 1:1000 @ A2

Revision E

Project Land at Kingscroft Farm
Meyrick Road, Havant

Title Illustrative Site Plan

Dwg# 18.099.02

Status Sketch

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Plans

Plan 1: Tree Constraints Plan (TCP) (13813_P01)

Plan 2: Preliminary Tree Retention and Removal Plan (13813_P02)





Survey Boundary

Category A - Trees of High Quality and Value

Category B - Trees of Moderate Quality and Value

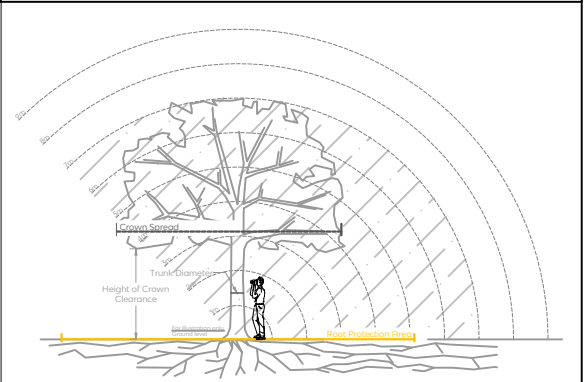
Category C - Trees of Low Quality and Value

Category U - Trees Recommended for Removal

Root Protection Areas

Tree Shading Constraints

**Denotes trees and groups not identified on topographical survey. Locations approximated using measurements taken on site.*



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Project title

Kingscroft Farm, Havant

Drawing title

Tree Constraints Plan

Scale

1:750 @ A2

Date

10.05.2022

Drawn

WS

Checked

LB

Drawing number

13813_P01b

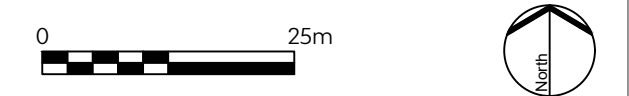
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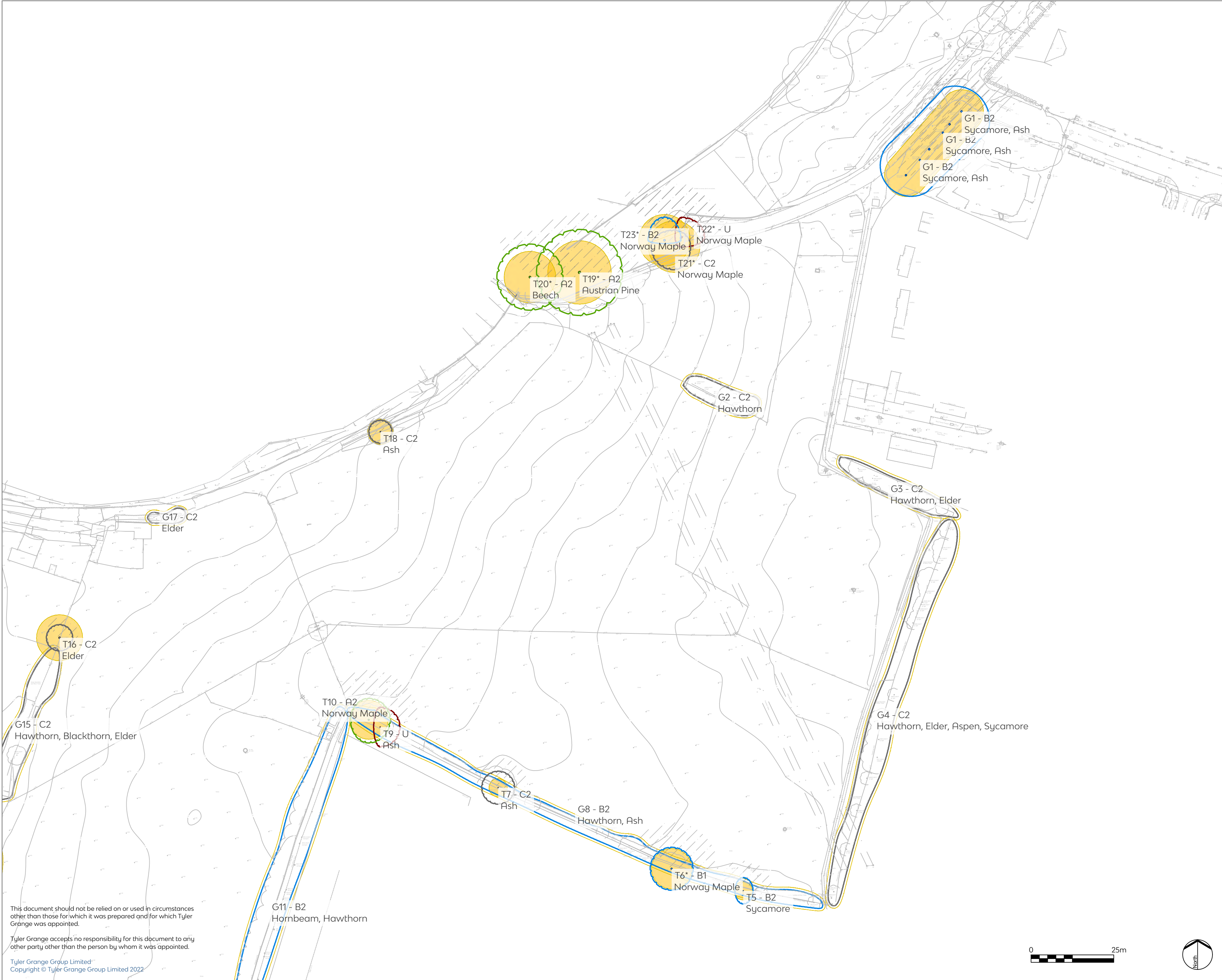
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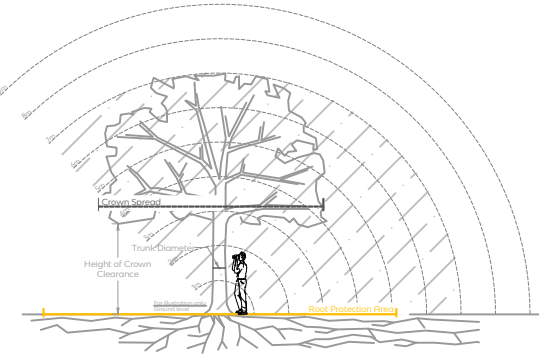
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-  Survey Boundary
-  Category A - Trees of High Quality and Value
-  Category B - Trees of Moderate Quality and Value
-  Category C - Trees of Low Quality and Value
-  Category U - Trees Recommended for Removal
-  Root Protection Areas
-  Tree Shading Constraints

**Denotes trees and groups not identified on topographical survey. Locations approximated using measurements taken on site.*



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Drawing title
Tree Constraints Plan

Scale Date 1:750 @ A2 10.05.2022 Drawn Checked WS LB

Drawing number 13813_P01a Revision -

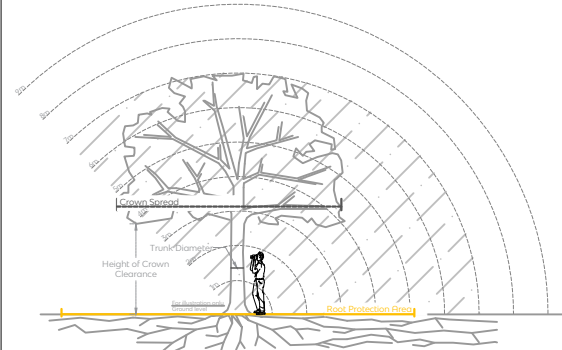
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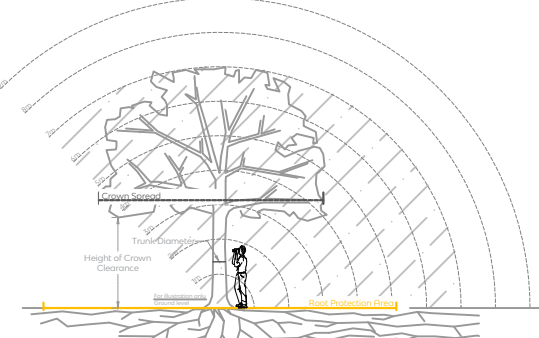
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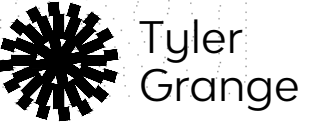


- Survey Boundary
- Phase Two Boundary
- Category A - Trees of High Quality and Value
- Category B - Trees of Moderate Quality and Value
- Category C - Trees of Low Quality and Value
- Trees to be Removed
- Root Protection Areas
- Tree Shading Constraints

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Drawing title
Preliminary Tree Removal and Retention
Plan

Scale Date 1:750 @ A2 23.06.2022 Drawn Checked WS LB

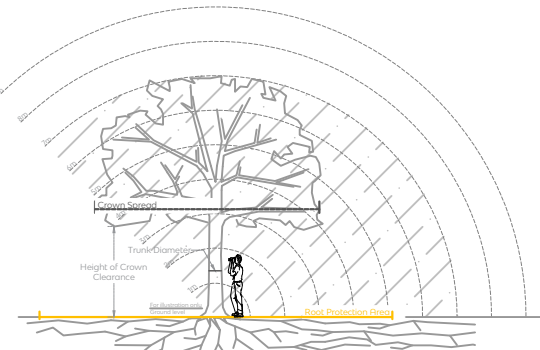
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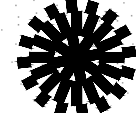


- Survey Boundary
- Phase Two Boundary
- Category A - Trees of High Quality and Value
- Category B - Trees of Moderate Quality and Value
- Category C - Trees of Low Quality and Value
- Trees Likley to be Removed
- Root Protection Areas
- Tree Shading Constraints

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Drawing title
Preliminary Tree Removal and Retention Plan

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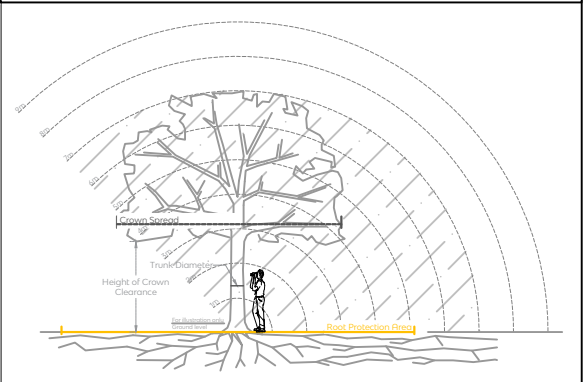
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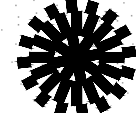


- Survey Boundary
- Phase Two Boundary
- Category A - Trees of High Quality and Value
- Category B - Trees of Moderate Quality and Value
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