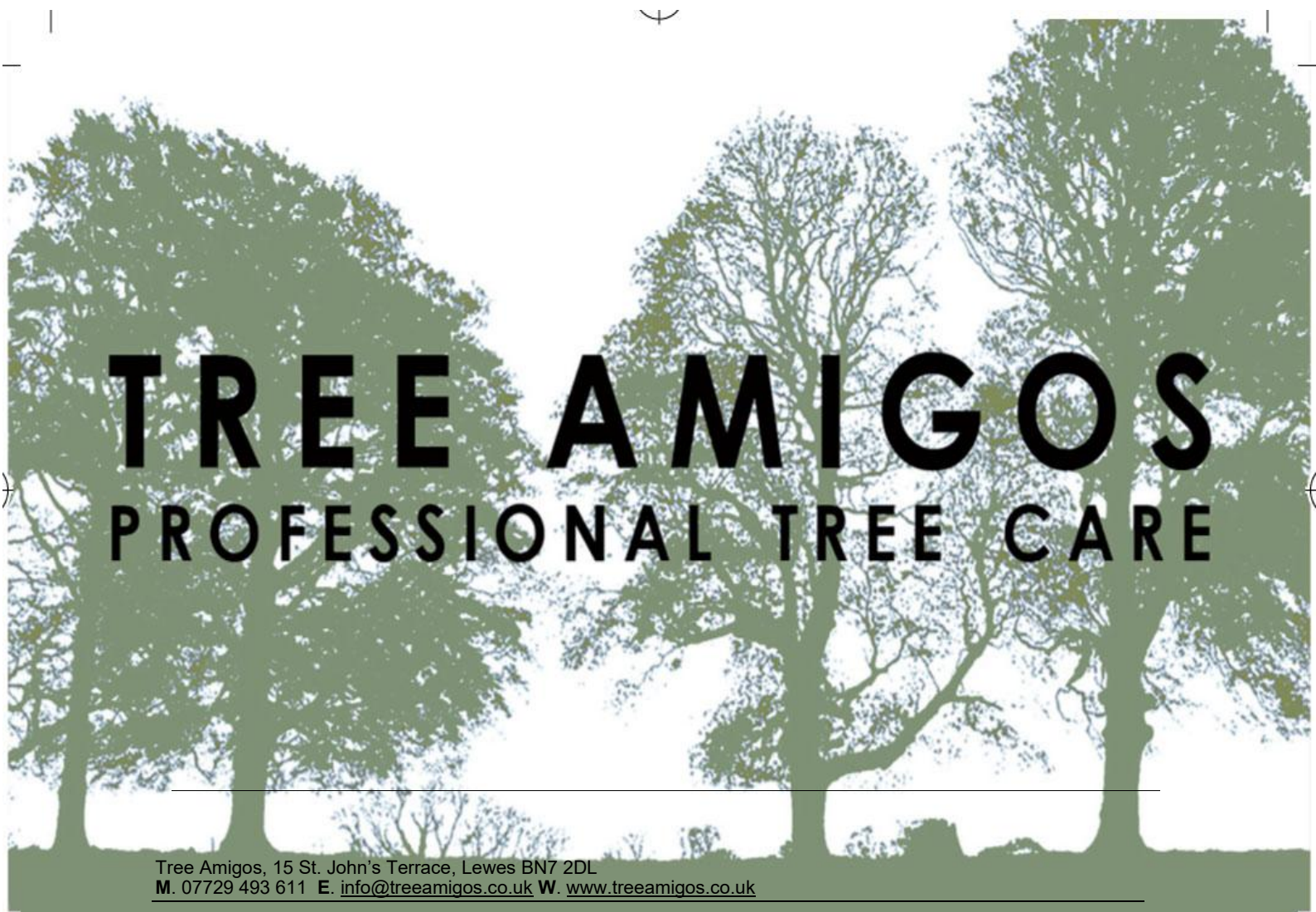


Kew Wakehurst

Arboricultural Impact Assessment

Report for Kew Wakehurst

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Executive Summary

Tree Amigos were commissioned on 19 June 2026 by Studio Hardie on behalf of Kew Wakehurst to undertake a ground level survey of trees that could be affected by the development of land at Kew Wakehurst and to produce an Arboricultural Impact Assessment (AIA) and Arboricultural Method Statement (AMS) for the construction works. A qualitative assessment of each tree was carried out according to British Standard BS 5837:2012, Trees in Relation to Design, Demolition and Construction– Recommendations, focusing on arboricultural values (categories A1, B1, C1)¹, landscape values (categories A2, B2, C2) and cultural values (A3, B3, C3)².

The main findings of the report are as follows:

- There were 73 individual trees, nine groups³ and one hedgerow in and adjacent to the Application Site each described in Appendix 1 of this report.
- Of the trees surveyed: nine individuals were attributed Category A status; 41 individuals, four groups and one hedgerow were attributed Category B status; 20 individuals and four groups were attributed Category C status and three individuals and one group were attributed Category U status.
- A total of 15 individual trees and five groups will require removal to facilitate development.
- Of the trees to be removed: eight individuals were attributed Category B status; six individuals and four groups were attributed Category C status; and one individual and one group were attributed Category U status.
- The construction process and proposal design has the potential to indirectly impact the stem, canopy or RPAs of a number of high amenity value trees. To

¹ Categorisation grading in accordance with BS 5837 2012. Trees suitable for retention: - Category A. Trees of high quality with an estimated remaining life expectancy of at least 40 years.
Category B. Trees of moderate quality with an estimated life expectancy of at least 20 years.
Category C. Trees of low quality with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150mm.

Category U. Trees of very low quality normally with a life expectancy of less than 10 years or requiring immediate removal due to health and safety concerns.

² British Standard BS 5837 2012 recommends that these categories may be further broken down into sub categories A1 A2 A3 pertaining to Arboricultural, Landscape or Cultural values respectively.

³ The term “group” is intended to identify trees that form cohesive arboricultural features either aerodynamically (e.g. trees that provide companion shelter), visually (e.g. avenues or screens) or culturally, including for biodiversity (e.g. parkland or wood pasture).

ensure that these features are successfully retained it is recommended an Arboricultural Method Statement is undertaken prior to development commencing.

1 Introduction

BACKGROUND

- 1.1 Tree Amigos were commissioned on 19 June 2026 by Studio Hardie on behalf of Kew Wakehurst to carry out an arboricultural survey of trees at Kew Wakehurst and provide an arboricultural report to aid in the determination of a planning application. The tree survey was required to assess the condition of trees that could be affected by development of the site and provide sufficient information for the development of site layouts and construction exclusion zones to enable the protection of retained trees.

SCOPE OF REPORT

- 1.2 This report has been produced in accordance with British Standard BS 5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations (hereafter referred to as BS 5837:2012). It provides information on the current condition of trees at the site, their suitability for retention, and the above and below ground constraints to development. It also evaluates the overall likely impact on the existing tree presence at the site, as well as recommending any arboriculturally sensitive construction methods required to mitigate such impact.
- 1.3 Any clear structural flaws or hazards have been identified in the Schedule of Trees provided in Appendix 1. Preliminary recommendations for the management of retained trees are provided, but a full hazard risk assessment comprising a more comprehensive analysis of tree condition and potential risk to target areas is beyond the scope of this report. Any recommendations relating to the management of potentially hazardous trees should be carried out as soon as possible⁴.

⁴ All tree works should be undertaken by a suitably qualified Arboricultural Contractor. No arboricultural works to trees subject to planning constraints shall be carried out without the written consent of the relevant Local Planning Authority (LPA). Any proposed tree works should be undertaken in accordance with British Standard BS 3998:2010 Tree work - Recommendations. Works to trees that are the subject of a Tree Preservation Order or within a Conservation Area which are deemed to be dangerous under Regulation 14 of the Town and Country Planning (England) (Regulations) 2012 may under certain circumstances be undertaken without needing to seek the prior written consent of the LPA.

SITE CONTEXT AND STATUS

- 1.4 The site comprises a small parcel of land within the grounds of Kew Wakehurst. The Ordnance Survey National Grid reference for the centre of the site is TQ 33755 31416.

DESCRIPTION OF THE PROPOSALS

- 1.5 The proposal comprises the demolition of an existing marquee slab foundation and shed base, prior to the augmentation of the existing path network, construction of a new path network, construction of children's play equipment, construction of play safety surfacing, construction of slab foundations with an associated hard and soft landscaping scheme.

2 Methodology

TREE SURVEY

- 2.1 The tree survey was conducted in accordance with BS 5837:2012. Results are presented in the Schedule of Trees (Appendix 1) and include a sequential numbering of each tree, species listed by common name, tree dimensions including overall height, canopy spreads measured against the cardinal compass points, crown height, age class, physiological condition, structural condition, life expectancy, root protection areas and preliminary management advice.
- 2.2 Each tree has been assigned a category grade in accordance with BS 5837:2012 categories A, B, C and U ranging from high to low quality. Definitions of tree quality are provided in Table 2 Appendix 1.
- 2.3 For the purposes of this report, arboricultural as well as landscape sub-categories have been used in the Schedule of Trees. BS 5837:2012 points out that each sub-category should be given equal weighting when grading trees against these criteria.
- 2.4 A tree constraints plan, based on the original tree survey data is presented in Appendix 2 showing the RPAs (Root Protection Areas) for all surveyed trees. Each grading category has been highlighted using the colour key system as described in BS 5837:2012.
- 2.5 The site was visited on 10 and 11 July 2026. Weather conditions were clear and sunny.
- 2.6 All trees likely to be affected by works inside the red line boundary of the site were visually assessed using the Visual Tree Assessment Method (VTA) (Mattheck and Breloer, 1994).
- 2.7 Stem diameters were measured using diameter tape. Canopy spreads were estimated by pacing and where possible, verified using a laser range finder. Height measurements were estimated and where possible, verified using a laser clinometer.
- 2.8 Formal assessments of topography, drainage, service conduits and soil conditions including specific laboratory investigations of soil properties (i.e. plasticity index, moisture content, suction pressure) were not undertaken and are beyond the scope of this report.

DESK STUDY

- 2.9 A tree constraints check was undertaken with Mid Sussex District Council online mapping service to search for Tree Preservation Order and Conservation Area restrictions to tree works in and adjacent to the site. It was confirmed no Tree Preservation Order or Conservation Area restrictions are present on-site.

SUPPORTING DOCUMENTS

- 2.10 *Drawing Reference: 1544_100_General Arrangement* [CAD Drawing] (Southern Green, 2026) and *Topographical Survey 22777 R2-2016* [CAD Drawing] (MK Surveys, 2016) was provided for the purposes of compiling this report. They included the layout of existing site features and the proposed general arrangements for the site.

PERSONNEL

- 2.11 This report was produced by Wesley Rawson FdSc BSc (Hons) MArborA. Wesley is a Professional Member of the Arboricultural Association. Wesley is a Senior Arboriculturist with over 11 years' industry experience working as a consultant and private contractor.

LIMITATIONS

- 2.12 The topographical survey provided was undertaken in 2016 and was therefore found to contain some inconsistencies with the existing site conditions.
- 2.13 Only preliminary recommendations for tree management are provided. A full hazard risk assessment comprising a more comprehensive analysis of the condition and potential risk to target areas is beyond the scope of this report.
- 2.14 The trees were inspected at ground level and no decay detection equipment was used. There is therefore a risk that any internal decay that may be present has gone undetected.
- 2.15 Trees are living organisms and their health and condition change with time. Therefore, this assessment remains valid for 18 months from the date of inspection, or until a severe storm is experienced, after which time a new inspection is required. For the purpose of this report, a severe storm is defined as a period of violent weather, involving rain, hail, wind, snow, lightning or any combination of these, likely to cause damage to trees.

3 Results

TREE SURVEY

- 3.1 The results of the tree survey are provided in the Schedule of Trees in Appendix 1. A Tree Constraints Plan illustrating the BS 5837:2012 categories of each tree, their crown spread, and RPAs is presented in Appendix 2 and photographs of the site are provided in Appendix 5.
- 3.2 The Tree Constraints Plan has been subject to an arboricultural assessment of likely rooting morphology based upon the existing conditions of the site. Where assumed barriers to root growth have been identified, RPAs have been offset to ensure the minimum area deemed to contain sufficient roots and rooting volume to maintain the tree's viability is accounted for.
- 3.3 The survey recorded 73 individual trees, nine groups and one hedgerow which could potentially be affected by development.
- 3.4 Physiological and structural condition⁵ for the majority of surveyed trees is consistent with Category B status, (41 individuals four groups and one hedgerow). A further nine individuals were assigned Category A status; 20 individuals and four groups were assigned Category C status; three individuals and one group were assigned Category U status.
- 3.5 Of the trees surveyed: 28 individuals and one group were classified to be at a mature life stage⁶; 34 individuals, seven groups and one hedgerow were classified as early mature; nine individuals and one group were classified as semi-mature; and two

⁵ Physiological and structural condition are terms used to differentiate between a trees physiological condition i.e. annual growth, vigour, presence of disease etc. as opposed to structural condition relating to branch formation, mechanical strength and integrity.

⁶ Young. Establishing; usually with good vigour, but as of limited significance within the landscape.
Semi-Mature. Established; normally vigorous and increasing in height. Of increasing landscape significance.
Early Mature. Fully established trees around the middle half of their life span retaining good vigour. Not yet achieved full height and retaining apical dominance.
Mature. Fully established trees retaining moderate vigour. Apical dominance lost but crown still spreading.
Over Mature. Fully mature trees in the last quarter of their usual life expectancy; vigour declining.

individuals were classified as young. No trees were found to be in the over-mature classification.

- 3.6 A summary of the number of trees surveyed corresponding to BS 5837:2012 tree quality assessment definitions is provided in Table 1.

Table 1: Grade Classifications

BS 5837:2012 Grades A to U	Trees attributed to each grade	Frequency		
		T	G	H
A	T2, T5, T11, T15, T16, T35, T40, T48, T62	9	-	-
B	T1, T3, T6, T9, T10, T12, T13, T14, T18, T20, T21, T22, T23, T25, T26, T29, T31, T32, T33, T34, T37, T38, T39, T41, T42, T43, T46, T47, T49, T50, T51, T52, T53, T54, T55, T57, T59, T60, T65, T71, T72, G2, G3, G4, G9, H1	41	4	1
C	T4, T7, T8, T24, T27, T28, T30, T36, T44, T56, T58, T61, T63, T64, T66, T67, T68, T69, T70, T73, G1, G5, G7, G8	20	4	-
U	T17, T19, T45, G6	3	1	-

4 Arboricultural Impact Assessment

- 4.1 Based on Drawing Reference: *1544_100_General Arrangement* [CAD Drawing] (Southern Green, 2026) received 9 July 2026, the impact of the construction on the existing trees has been assessed and all trees that will potentially be affected by the works are listed in Table 2. Tree numbers in the table correspond to the Schedule of Trees in Appendix 1 and Tree Constraints Plan described in Appendix 2.
- 4.2 It has been assumed that the height of all construction traffic or goods vehicles accessing the site will be within the standard minimum carriageway clearance of 5m (HSE, 2026).

4.3

Table 2: Summary of trees possibly affected by the development

Impact	Reason	BS Cat A	BS Cat B	BS Cat C	BS Cat U
Trees removed	To facilitate construction	-	T26, T33, T41, T43, T51, T53, T55, T59	T4, T24, T27, T44, T56, T68, G1, G5, G7, G8	T45, G6
Trees which could sustain damage to RPA	Demolition of existing concrete slab structures	T5, T11	T25	T6	-
	Partial removal of existing foot paths	T48	T50, T52, T54, T57, T65	-	-

Table 2: Summary of trees possibly affected by the development

Impact	Reason	BS Cat A	BS Cat B	BS Cat C	BS Cat U
	New path installation and augmentation of existing path network	T2, T5, T11, T16, T35, T40, T48	T1, T3, T6, T9, T10, T12, T14, T18, T23, T25, T29, T34, T37, T38, T39, T46, T50, T52, T54, T57, T65, T71, T72, G4, G5	T7, T28, T30, T36, T63, T69, T70	-
	Construction of firm safety surfacing	T5, T35	T25, T50, T52, T54, T72	T28, T30	-
	Excavation for safety bark depths	T5, T11, T16, T35, T40	T14, T20, T21, T22, T23, T25, T37, T38, T39, T50, T52, T54	-	-
	Excavation of play equipment foundations, seating arrangement slabs and foundations	T5, T16, T35, T40	T14, T21, T25, T31, T34, T37, T38, T50, T52, T54,	T28, T30	-
	Construction of grass topped amphitheatre seating	T48	T23, T25, T57	-	-
	Construction of slab foundations for catering cart	T5, T11	T6, T12, T18	-	-

Table 2: Summary of trees possibly affected by the development

Impact	Reason	BS Cat A	BS Cat B	BS Cat C	BS Cat U
Trees which could sustain damage to stem or canopy	Impact by construction traffic.	T5, T35, T48	T3, T6, T9, T10, T12, T14, T20, T21, T22, T23, T25, T31, T37, T38, T42, T46, T47, T49, T50, T52, T54, T57, T71, T72, G2, G4	T7, T28, T36, T58, T64, T69, T70	T19

TREE REMOVAL

- 4.4 A total of 15 individual trees and five groups will require removal to facilitate development. Of the trees to be removed: eight individuals were attributed Category B status; six individuals and four groups were attributed Category C status; and one individual and one group were attributed Category U status.

TREE PRUNING

- 4.5 Based on the design proposal and the impacts of construction activity, the following tree surgery operations will likely need to be undertaken to facilitate the development works:
- T5, T6, T11, T14, T16 and T18 will require crown lifting and/or the shortening of lower lateral branches to provide a minimum height clearance of 5m above the access path to the proposed catering cart stand;
 - T9 and T71 should have the lower lateral branches in their southern canopy quadrant shortened by 2-2.5m or crown lifted to a minimum height of 4m above the footpath to facilitate construction access;
 - T21, T22 and T23 should have their eastern canopy quadrants shortened by 2-3m or crown lifted by 2-3m away from the proposed construction detail;

- T28 will require crown lifting to a minimum height of 4m in its southern canopy quadrant to facilitate small plant machinery and play equipment;
- T31 will require the lateral branches in its northern canopy quadrant shortened by 3-4m to facilitate the lookout tower construction;
- T35 will require crown lifting between heights of 2-4m to provide pedestrian access and small plant machinery for construction;
- T37 will require crown lifting of its lower lateral branches in its south eastern canopy quadrant by 2-4m to facilitate pedestrian access and small plant machinery for construction;
- T38 will require crown lifting in its eastern and northern canopy quadrants by 2-4m to facilitate pedestrian access and small plant machinery for construction;
- T46 and T47 should have their southern canopy quadrants crown lifted to a minimum height of 2-2.5m above the existing footpath to allow for construction access;
- T48 should have the lower branches in its south eastern canopy quadrant crown lifted to 2-2.5m to allow construction access over the footpath;
- T49 will require the lower lateral branches in its northern canopy quadrant shortened by 2-2.5m to facilitate construction access;
- T50, T52 and T54 will require crown lifting in all four cardinal directions to a height of 2.5-3m to facilitate pedestrian access, the construction of play equipment, safety surfacing and the construction of new footpaths;
- T57 will require the lower lateral branches in its south eastern canopy quadrant crown lifted by 2-2.5m to facilitate construction access for the

proposed footpath and the 'fairy ringed' leader in its northern quadrant removed to facilitate construction of the grass topped amphitheatre;

- T63 should have its lateral branches in its northern canopy quadrant shortened by 1-1.5m to facilitate construction access along the footpath;
- T72 will require the lateral branches in its north eastern canopy quadrant shortened by 2-2.5m to facilitate construction access along the proposed footpath.

PRELIMINARY MANAGEMENT RECOMMENDATIONS

- 4.6 Tree works highlighted during the course of the tree survey based on sound arboricultural advice but not as a result of development are detailed in the tree data schedule found in Appendix 1.
- 4.7 All tree works should give due consideration to the potential presence of protected species, including breeding birds and roosting bats. Any ecological reports pertaining to the site should be consulted prior to the commencement of works.
- 4.8 Arisings from tree works (e.g. wood piles and standing dead trunks) can provide valuable habitats for wildlife. As such, consideration should be given to their retention on site in areas unlikely to cause issues to public health and safety.
- 4.9 All tree pruning should be carefully planned and undertaken in accordance with *BS 3998: 2010 Recommendation for Tree Works*.
- 4.10 Any recommendations highlighting the management of potentially hazardous trees should be reviewed as soon as is practically possible.

IMPACT ON VISUAL AMENITY AND LOCAL CHARACTER

- 4.11 Trees T26, T33, T41, T43, T51, T53, T55 and T59 were attributed Category B status and therefore considered to be of moderate visual amenity value. Without

appropriate mitigation, including a robust replanting plan, their removal would represent a moderate impact on local visual amenity.

4.12 While trees T53, T56, T62, T63, T64, T65, T66, T67, T68, T105, T106 were all attributed Category C status and therefore considered to be of low visual amenity value, it is recommended a replanting plan should address the minor loss to local visual amenity as a result of their removal.

4.13 Trees T45 and G6 were attributed Category U status and therefore their removal should not pose an arboricultural constraint to development proposals.

TREES WHICH COULD POTENTIALLY SUSTAIN DAMAGE

4.14 The construction process and proposal design has the potential to indirectly impact the stem, canopy or RPAs of a number of high amenity value trees as displayed in Table 2. To ensure that these features are successfully retained it is recommended an Arboricultural Method Statement is secured through a suitably worded pre-commencement condition.

SITE SPECIFIC ISSUES AND RECOMMENDATIONS

4.15 The proposed development site is situated within an enclosed area and is benefitted from a number of mature high amenity trees including a large population of non-native specimen trees. The area appears to have been used for private access and storage facilities with public access restricted in part. It is assumed the original dense planting of coniferous trees along the southern boundary of the Application Site adjacent to the existing footpath was used to screen the area from public view.

4.16 These trees were mainly comprised of Lawson cypress cultivars and western red cedar (Thuja) with one very high amenity Chinese fir (T48). It was noted during the survey this tree was of particular public interest and its rooting area was observed to be under higher than usual visitor pressures.

4.17 The cypress and Thuja trees have collectively grown as a group sharing canopies and companion shelter. Some individuals were noted to have layering branches forming

further upright trees typical of the species (fairy ring). Significant self-shaded deadwood was observed in the lower canopies and some storm damage was also noted. The removal of a select number of these trees will inevitably alter the way wind is dynamically loaded throughout the branch structures with a resulting reduction of mass damping. Any resulting tree surgery operations required to reduce future perceived hazards as a result of development will struggle to preserve any associated amenity value. While it is the clients wish to retain these trees in-situ it is recommended the removal of the cypress and thuja trees in their entirety will produce better development outcomes and lessen construction and post-development pressures for tree works.

4.18 The design proposals centre around the centrally located children's play equipment currently located in the open green space and marquee as well as providing an accessible footpath adhering to slope gradients of above 1:20 following the existing site levels. A number of additional stepped footpaths are also proposed that provide more direct access. Off some of the footpaths are included quiet spaces with hammocks either over safety bark mulch or firm safety surfacing. Further play equipment and safety bark mulch is proposed to the west of the Application Site with picnic tables, gravel footpaths and a lookout tower. A small area at the north east of the Application Site is proposed for a catering cart. Either side of one of the footpaths in the RPAs of T25 and T48 is proposed a section of grass topped amphitheatre seating.

4.19 It is expected the pedestrian access proposals can be achievable with arboriculturally sensitive demolition and construction methods. This would likely consist of the removal of existing paths and subbase material using hand tools under direct arboricultural supervision while retaining roots in situ. The construction of the new paths would require a no-dig system to be employed such as a minimum depth 75mm 3D cellular confinement system subbase or bridged design. It is preferable this is undertaken without the aid of plant machinery with materials wheelbarrowed into position. While footpaths are usually less than the 20% limit for hard surfacing BS 5837:2012 recommends the proposals are so extensive across the

tree rooting areas that a permeable surfacing that retains its porosity throughout its design life is recommended in the final design detail. This excludes resin bound surfacing which is to be treated like impermeable surfacing due to it eventually being blocked by fines. It is recommended the final wearing course be either a block paving laid dry jointed or pre-cast concrete drilled with aeration holes to an engineer's specification or other suitable solution. This is to ensure continued oxygen diffusion into the soil.

4.20 The more direct footpaths include a stepped design. No construction details are currently available for the steps however, it is expected these can be achieved using above ground construction methods subject to further approval. This may include a peg and board edged design filled with locally stiffened aggregate.

4.21 The 'firm safety surfacing' proposed is to be made of a 60mm layer of resin bound rubber mulch. This creates a permeable surface suitable for its intended use. While it can be laid directly onto existing grade for light use, the requirement for play surfacing means it must be laid on top of a subbase which is usually a 100mm layer of compacted MOT. This would be unacceptable in tree RPAs and so it is proposed that the rubber mulch is laid over a minimum 75mm depth 3D cellular confinement system with an additional 25mm layer of overfill locally stiffened without the aid of compaction. This will ensure the large areas of safety surfacing continue to allow oxygen diffusion into the soil.

4.22 The proposals feature areas of 'safety bark' around some of the play equipment. Safety bark mulch is required to be a minimum depth of 300mm to be suitable for its intended use normally constructed below the current ground level requiring excavation. This design proposal is not suitable for construction within the RPAs of retained trees where it is recommended no excavation should be undertaken. This is because the majority of tree root systems are found within the first 600mm of soil with around 50% in the first 300mm where access to oxygen and nutrients is most available. It may be possible to excavate the areas using compressed air soil displacement and retain the roots within the safety bark mulch provided it is of a

suitable material for rooting into. The current proposals however, require trench shoring the pits with boards so that retaining roots within the mulch is not possible. If the proposals can remove the need for shoring the edges of the trench excavations and thus facilitating the retention of tree roots this may be acceptable following arboricultural mitigatory measures. Otherwise, the proposals should remove these areas from within tree rooting areas for final construction drawings. The design proposals will however, be required to remove the safety bark mulch from the structural root zones of trees T20, T22, T35, T37 and T38. This is because the structural root zone relies on sufficient root and soil cohesion in order to provide sufficient soil sheer strength essential to tree structural stability so that no excavation is recommended. It will not be possible to construct the areas of safety bark mulch above ground in RPAs due to the required material depths of 300mm. This would reduce oxygen diffusion into the existing rooting areas leading to anaerobic conditions.

- 4.23 The construction details for the proposed play equipment make use of screw pile and concrete pad foundation designs. BS 5837:2012 makes allowances for intrusion into the soil for piling. While pad foundations are more intrusive they are nevertheless considered acceptable mitigatory measures for high value amenity trees that are to be retained subject to arboricultural mitigation. It is recommended the final construction design makes use of screw pile foundations over concrete pad foundations where possible. All pile and pad foundations will require micro-siting around retained roots during on-site arboriculturally supervised investigative excavations.
- 4.24 The design proposal furniture seating requires the construction of slab foundations in some instances. It is recommended the final design detail removes the need for excavated slab foundations and relies solely on screw pile and pad foundations where below ground foundation structures are necessary.
- 4.25 The picnic tables are also proposed on slab foundations. The final design detail will remove the need for excavation for the slabs. The slabs may be poured in-situ or

pre-cast and bare on existing ground with soil levels raised at the edges by no more than 250mm sloped back at 1:3 to the existing ground level.

- 4.26 A concrete slab is proposed (7m x 3m) to house the catering cart at the north east. The area of the slab is within the relative tolerance allowed for by BS 5837:2012 for trees T5, T6 and T11 and may be constructed above the existing ground level following arboricultural mitigation. The proposed finished levels strategy will require finished floor levels are raised to meet the slab.
- 4.27 Trees removed on-site are proposed for informal seating within the design. Preliminary construction details show the trunks embedded in trenches filled with compacted aggregate. This detail should be removed from the final design with a no-dig alternative proposed.
- 4.28 The grass topped amphitheatre seating has the potential to require significant cut and fill operations potentially injurious to trees T25, T48 and T57. Construction detail is currently unavailable for the proposal. In order to avoid excavation into RPAs and the disruption of oxygen diffusion through grade changes the following arboricultural mitigation solution is recommended subject to further approval. A 200mm 3D cellular confinement system should be constructed over the area identified. This will prevent ground compaction and provide a sufficient granular aeration layer. Top soil can be loaded onto the geocell over a geotextile without the aid of machinery suitable for turfing before being reprofiled. Aeration chambers will be installed which include perforated pipes connecting the 200mm aeration geocell layer to the surface to allow oxygen diffusion to the underlying rooting area. The edge of the geocell may be raised with topsoil and graded back by hand at no more than a 1:3 slope.
- 4.29 Informal gravel paths are proposed for pedestrian and light vehicle use within the soft landscaped areas of trees to be retained. It is recommended the final construction detail for the paths includes the no-dig installation of a 3D cellular

confinement system subbase to suitable depths with peg and board edging to house the gravel layer surface course.

- 4.30 An existing gravel path runs within the RPAs of T25, T16, T14, T11, T6, T5 and T2. The proposals seek to augment the existing path with a new bound surface. It is recommended the construction detail avoid the removal of the existing track and build the new surface layer above the old to avoid potentially damaging tree roots while raising the edges with top soil to match the finished levels.
- 4.31 An existing bitmac service route is proposed for reuse within the RPAs of T40, T35, T37, T30, T29 and T28. Provided no removal of the existing subbase layer or widening of the path is to be undertaken the proposals are not expected to adversely affect these trees.
- 4.32 Bridged footpaths are proposed within the RPAs of T40, T39, T38, T37, T35, T54, T57 and T25. It is expected the bridge can be constructed using a micro-sited pile design to minimise disruption in the RPAs.
- 4.33 Reinforced grass is proposed across the RPAs of T23, T25, T48, T54 and T57. The reinforced grass will be made of plastic mesh interlocking sheet mats pinned into the ground. The mesh can be laid on the existing ground without the need for excavation. The edges of the mesh will tucked under the top vegetative existing turf layer to avoid a trip hazard. The mesh will mitigate visitor pressure by providing light ground protection within the RPAs.
- 4.34 Boulders are proposed as part of the play equipment set into below ground concrete pads within the RPAs of T35 and T40. The boulders will require relatively small areas of incursions into the RPAs of these trees and may be subject to arboriculturally supervised micro-siting to avoid significant rooting volumes. The boulders will however, require delivery by plant machinery which will be unavoidable within RPAs as currently proposed. Temporary ground protection will be required to facilitate the movement of plant machinery within RPAs and

appropriate crown lifting operations will likely be required to provide appropriate clearance underneath tree canopies.

- 4.35 The soft landscaping scheme proposes tree, shrub and vegetative planting within the RPAs and crown spreads of a large quantity of existing trees allocated for retention on-site. Soft landscaping should be removed from proposal drawings where they necessitate the removal, pruning or increased competition for established existing trees of high amenity. It is recommended that as far as reasonably practical the areas underneath the crown spreads of trees to be retained should be free from soft landscaping proposals so they may be mulched to the canopy drip line at a depth of 5-10cm. This will bait new absorptive root growth prior to development and enable existing trees to better adapt to the construction pressures of site development and post development visitor pressures. The soft landscaping proposals further specify large heavy standard instant impact trees. It is recommended this specification is removed as far as possible to reduce the logistical pressure this may have on the existing trees through site delivery and installation and the associated resourcing challenges. It has further been demonstrated that younger trees which are more readily adaptable to new planting scenarios will provide a lower mortality rate and an equal canopy size in a short space of time leading to better outcomes.

POST DEVELOPMENT PRESSURE FOR TREE WORKS

- 4.36 The proposals interweave a number of publicly accessible areas and static construction targets within the zone of influence of the retained trees on-site. Any post-development formal hazard risk assessments will have to include the associated risks weighed against the benefits of tree retention. This includes tree T25, a large pedunculate oak that has suffered historic lightning damage exposing approximately 30-40% of the trees circumference including the loss of large scaffold limbs. The southern section of its buttress roots are moribund with decreased soil cohesion which limits the soil sheer strength of the trees root plate. The tree showed adaptive growth and good vitality on the dates of the BS 5837 survey. It is worth noting however, the client Kew Wakehurst has their own professional arboricultural

team which includes the regular safe management of mature amenity trees across the wider site as a whole such that any future management scenario required will centre on tree retention as a priority.

- 4.37 Due to the intrusive nature of the works and the requirement for extensive construction with retained tree RPAs it is recommended construction sequencing is undertaken between the months of May and October when the ground is driest and least prone to the damaging effects of compaction. Any plant machinery necessary to facilitate construction should be limited to weights under 2 tonnes where possible.

CONCLUSIONS

- 4.38 Tree removals to facilitate the design proposals consist of low and moderate value amenity trees. No category A trees are proposed for removal that could be considered of such importance and sensitivity as to be considered major constraints to development.
- 4.39 The construction process has the potential to damage a number of high and moderate value arboricultural features at the Application Site. To ensure that these features are successfully retained during the proposed works it is recommended an Arboricultural Method Statement be undertaken prior to the development commencing.

5 References

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Appendix 1: Schedule of Trees

Table 1: Schedule of Trees and Tree Quality Assessment*

* See Table 3 for key to terms

** See Table 2 for definitions of categories

No	Species	Ht.	S	St. 1.5m	Canopy Spread				Cr. CI	Ls	SC	PC	Comments /Observation	Preliminary Management Advice	LE	Cat **	RPAm ²	RPA r
					N	S	E	W										
T1	Copper beech	23	1	1230	7	12	11	8	2	M	Good	Good	Historical large diameter root cut on northern aspect. G. Australe fruiting between buttresses. Flaking bark and decayed root plate north east.	Suggest further investigation inspection/ hazard risk assess.	20+	B1	684.4	14.8
T2	English oak	19	1	970	7	12	7	9	2	M	Good	Good	Historic tear out of main leader. Suppressed growth by adjacent beech.		40+	A1	425.7	11.6
T3	Myrtle beech	7	1	260	4	2	3	3	1	SM	Good	Good	Phototropic growth west.		40+	B1	30.6	3.1
T4	Chilean myrtle	5	3	100; 70;6 0	1	2	1	1	1	SM	Good	Good	Phototropic growth south.		40+	C1	8.4	1.6
T5	Pedunculate oak	25	1	1220	8	6	10	11	3	M	Good	Good	Ivy clad up stem inhibiting VTA.	Sever ivy and resurvey in one year.	40+	A1	673.3	14.6
T6	Sycamore	25	1	980	8	8	8	7	1	M	Fair	Good	Extensive basal hollowing. Southern buttress root has stilted. Shows good supporting secondary growth.	Investigate strength of residual wood. Hazard risk assess.	20+	B1	434.5	11.8

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** See Table 2 for definitions of categories

No	Species	Ht.	S	St. 1.5m	Canopy Spread				Cr. CI	Ls	SC	PC	Comments /Observation	Preliminary Management Advice	LE	Cat **	RPAm 2	RPA r
					N	S	E	W										
T7	Cherry Laurel	8	2	230; 300	5	3	4	3	1	M	Fair	Good	Understory shrub growth.		10+	C1	64.6	4.5
T8	Atherosperma moschatum	4	1	70	1	1	1	1	1	Y	Good	Good	Minor heat stress		10+	C1	2.2	0.8
T9	Distylium racemosum	4	1 3	80	4	2	4	4	0	EM	Good	Good	Some chlorosis throughout crown.		20+	B2	37.6	3.5
T10	Ilex parada	7	1	200	2	2	2	2	0	SM	Good	Good	Climber up stem inhibiting VTA.	Sever climber and resurvey in one year.	20+	B1	18.1	2.4
T11	Pedunculate oak	22	1	1070	10	12	5	9	1	M	Good	Good	Phototropic crown bias. Ivy clad up stem inhibiting VTA.	Sever ivy and resurvey in one year.	40+	A1	517.9	12.8
T12	English yew	11	2	260; 180	6	1	5	2	2	SM	Fair	Good	Bifurcation at 0.5m with poor union.		20+	B2	45.2	3.8
T13	English yew	12	3	310; 440; 170	6	7	6	7	2	EM	Good	Good	Rudimentary brace in crown.	Remove brace.	20+	B2	144.1	6.8
T14	Lawson cypress	20	1	740	3	3	3	3	2	M	Good	Good	Ivy clad up stem inhibiting VTA.	Sever ivy and resurvey in one year	20+	B1	247.7	8.9
T15	English yew	15	2	370; 460	5	5	5	4	2	EM	Good	Good	Moderate retained deadwood throughout lower crown.		40+	A2	157.7	7.1

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** See Table 2 for definitions of categories

No	Species	Ht.	S	St. 1.5m	Canopy Spread				Cr. CI	Ls	SC	PC	Comments /Observation	Preliminary Management Advice	LE	Cat **	RPAm 2	RPA r
					N	S	E	W										
T16	Pedunculate oak	22	1	960	5	12	9	7	6	M	Good	Good	Major retained deadwood in no occupancy zone.		40+	A1	416.9	11.5
T17	English yew	5	1	150	3	3	3	3	0	SM	Fair	Poor	Dead standing		<10	U	10.2	1.8
T18	European hornbeam	18	1	360	3	7	6	4	1	EM	Good	Good	Crown bias south.		20+	B1	58.6	4.3
T19	Skimmia sp.	4	6	50	2	1	0	2	1	EM	Fair	Poor	In decline.		<10	U	6.8	1.5
T20	Hoheria	14	4	110; 200; 110; 200	3	3	3	5	1	EM	Fair	Good	Some weak unions.		20+	B1	47.1	3.9
T21	Hoheria	15	1	440	3	4	5	6	4	M	Fair	Good	Weak unions with high notch stress.	Consider dynamic bracing in crown.	20+	B1	87.6	5.3
T22	Hoheria	8	9	90	3	4	3	5	1	EM	Good	Good	Multi-stem form.		20+	B1	33.0	3.2
T23	Southern beech	12	3	250; 240; 100	5	4	4	5	1	EM	Good	Good	Bifurcation 1m with weak union.		20+	B1	58.9	4.3
T24	Euonymous sp.	5	8	50	3	3	3	3	1	EM	Good	Fair	Sparse crown		10+	C1	9.0	1.7

Table 1: Schedule of Trees and Tree Quality Assessment*

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** See Table 2 for definitions of categories

No	Species	Ht.	S	St. 1.5m	Canopy Spread				Cr. CI	Ls	SC	PC	Comments /Observation	Preliminary Management Advice	LE	Cat **	RPAm ²	RPA r
					N	S	E	W										
T25	Pedunculate oak	22	1	1370	8	10	7	9	3	M	Fair	Good	Large tree in prominent position. Historic lighting wound extends up most of the stem exposing heartwood over approximately 30-40% of circumference. Further storm damage throughout crown with shortened scaffold limbs. Buttress roots growing around to south west to compensate. Good vitality. High habitat potential. Wood pecker flute. Beehive.	Hazard risk assess post development scenario and keep low occupancy area around tree.	20+	B1	849.1	16.4
T26	Reevesia pubescens	8	2	180; 120	1	4	2	4	1	EM	Good	Good	Crown bias south.		20+	B1	21.2	2.6
T27	Sycamore	7	3	80;90;100	2	1	3	3	1	SM	Fair	Good	Self-set.		10+	C3	11.1	1.9

Table 1: Schedule of Trees and Tree Quality Assessment*

* See Table 3 for key to terms

** See Table 2 for definitions of categories

No	Species	Ht.	S	St. 1.5m	Canopy Spread				Cr. CI	Ls	SC	PC	Comments /Observation	Preliminary Management Advice	LE	Cat **	RPAm 2	RPA r
					N	S	E	W										
T28	Pedunculate oak	18	1	700	7	12	7	7	3	M	Fair	Fair	In decline. Major retained deadwood throughout northern crown.		10+	C1	221.7	8.4
T29	Horse chestnut	14	3	300; 300; 180	7	6	5	4	2	EM	Good	Good	Growing from pond bank dimensions estimated.		20+	B1	96.1	5.5
T30	English yew	10	1	800	6	5	6	4	2	EM	Good	Poor	Growing from pond bank dimensions estimated. Dieback throughout crown. In decline.		10+	C1	289.5	9.6
T31	Sycamore	20	1	460	5	7	7	7	1	EM	Good	Good	Ivy clad into crown.		20+	B1	95.7	5.5
T32	Pedunculate oak	15	1	550	6	6	5	6	2	EM	Good	Good	Growing from hedgerow. Moderate retained deadwood.		40+	B2	136.8	6.6
T33	Sycamore	15	8	200	5	4	7	6	2	EM	Good	Good	Self-set boundary tree. Ivy clad.		20+	B2	144.8	6.8
T34	Black pine	15	1	600	5	5	5	5	4	EM	Good	Fair	Moderate retained deadwood. Suppressed by cherry Laurel.		20+	B2	162.9	7.2
T35	Sycamore	17	1	860	9	8	8	8	2	M	Good	Good	Ivy clad into crown inhibiting VTA.	Sever ivy and resurvey in one year.	40+	A1	334.6	10.3

Table 1: Schedule of Trees and Tree Quality Assessment*

* See Table 3 for key to terms

** See Table 2 for definitions of categories

No	Species	Ht.	S	St. 1.5m	Canopy Spread				Cr. CI	Ls	SC	PC	Comments /Observation	Preliminary Management Advice	LE	Cat **	RPAm 2	RPA r
					N	S	E	W										
T36	Pedunculate oak	5	1	90	1	2	2	1	1	Y	Good	Good	Young self-set.	Remove crossing branches.	40+	C1	3.7	1.1
T37	Holly	10	2	320; 310	3	4	3	5	2	EM	Good	Good	Understory tree. Ivy clad		40+	B2	89.8	5.3
T38	Pedunculate oak	11	1	600	7	3	6	7	2	EM	Good	Good	Inaccessible dimensions estimated. Ivy clad into crown inhibiting VTA.		40+	B1	162.9	7.2
T39	Lawson cypress	18	1	800	4	4	4	4	1	M	Good	Good	Self-shaded to north east. Inaccessible dimensions estimated.		20+	B1	289.5	9.6
T40	Coastal redwood	25	1	1250	6	6	6	6	0	EM	Good	Good	Inaccessible dimensions estimated. Self-shading from adjacent Laurel.	Consider lightning management.	40+	A1	706.9	15.0
T41	Sp. Unknown	7	1	390	4	8	6	5	0	EM	Good	Good	Branches have layered		20+	B2	68.8	4.7
T42	Maytenus boaria Molina	7	3	110; 120; 180	3	1	3	3	1	EM	Fair	Good	Poor unions. Exposed heartwood on eastern scaffold limb preventing secondary tensile growth.		20+	B1	26.6	2.9

Table 1: Schedule of Trees and Tree Quality Assessment*

* See Table 3 for key to terms

** See Table 2 for definitions of categories

No	Species	Ht.	S	St. 1.5m	Canopy Spread				Cr. CI	Ls	SC	PC	Comments /Observation	Preliminary Management Advice	LE	Cat **	RPAm 2	RPA r
					N	S	E	W										
T43	Incense cedar	15	1	830	2	2	2	2	2	EM	Good	Good	Some self-shading from adjacent cypress.		20+	B1	311.7	10.0
T44	Michelia doltsopa	8	3	120; 150; 130	0	5	2	2	1	EM	Fair	Good	Suppressed by conifers.		10+	C2	24.3	2.8
T45	Chinese redbud	3	2	60;7 0	0	7	2	2	2	EM	Poor	Good	Suppressed by conifers		<10	U	3.8	1.1
T46	Katsura	14	4	160; 210; 270; 160	2	6	4	5	2	EM	Good	Good	Memorial tree. Crown bias south.		20+	B1	76.1	4.9
T47	Persimmon	8	2	130; 130	0	4	3	3	2	SM	Fair	Good	Poor union has grafted together slightly higher. No lower and mid crown to north.		20+	B1	15.3	2.2
T48	Chinese fir	18	4	640; 780; 380; 480	5	6	5	5	1	M	Good	Good	Some self-shading to north. Bulge wood at base. Large exposed buttress roots. Roots have lifted path in places. Minor leaf necrosis potentially heat stress. High visitor interest and visual amenity.		<10	A3	630.1	14.2

Table 1: Schedule of Trees and Tree Quality Assessment*

* See Table 3 for key to terms

** See Table 2 for definitions of categories

No	Species	Ht.	S	St. 1.5m	Canopy Spread				Cr. CI	Ls	SC	PC	Comments /Observation	Preliminary Management Advice	LE	Cat **	RPAm 2	RPA r
					N	S	E	W										
T49	Mytus glenleam gold	7	4	130; 120; 90;9 0	5	1	4	2	2	EM	Good	Good	Phototropic growth north. Some self- shading and leaf chlorosis.		20+	B2	21.5	2.6
T50	Lawson cypress	25	1	1100	6	6	6	6	0	M	Good	Good	Part of conifer screening belt		20+	B1	547.4	13.2
T51	Lawson cypress	20	1	600	1	3	2	2	0	M	Good	Good	Part of conifer screening belt.		20+	B1	162.9	7.2
T52	Lawson cypress	25	1	1100	6	6	6	6	0	M	Good	Good	Part of conifer screening belt		20+	B1	547.4	13.2
T53	Lawson cypress	25	1	1100	6	6	6	6	0	M	Good	Good	Part of conifer screening belt		20+	B1	547.4	13.2
T54	Lawson cypress	25	1	1100	8	6	6	6	0	M	Good	Good	Part of conifer screening belt. Some storm damage.		20+	B1	547.4	13.2
T55	Lawson cypress	25	1	1100	6	6	7	7	0	M	Good	Good	Part of conifer screening belt. Some storm damage.		20+	B1	547.4	13.2
T56	Lawson cypress	22	1	600	5	5	5	5	0	M	Good	Fair	Some chlorosis throughout crown. Apical dieback.		10+	C1	162.9	7.2
T57	Western red cedar	25	1	900	6	5	6	4	0	M	Good	Good	Buttress roots beginning to walk/ branches layering.		20+	B1	366.4	10.8

Table 1: Schedule of Trees and Tree Quality Assessment*

* See Table 3 for key to terms

** See Table 2 for definitions of categories

No	Species	Ht.	S	St. 1.5m	Canopy Spread				Cr. CI	Ls	SC	PC	Comments /Observation	Preliminary Management Advice	LE	Cat **	RPAm 2	RPA r
					N	S	E	W										
T58	Sawara cypress	9	1	310	0	5	1	4	0	EM	Poor	Good	Suppressed with poor form.		10+	C1	43.5	3.7
T59	Western red cedar	25	1	900	2	7	3	5	0	M	Good	Good	Branches layering/ buttress roots walking.		20+	B1	366.4	10.8
T60	Possibly Mediterranean buckthorn	10	1	340	3	5	4	4	2	EM	Good	Good	Minor dieback.		20+	B1	52.3	4.1
T61	Acer griseum	5	1	270	2	3	3	4	2	EM	Fair	Fair	Low crown density. Minor dieback. Lost two scaffold limbs.		10+	C1	33.0	3.2
T62	Nothofagus solandri var. cliffortioides	10	6	410	7	8	4	8	1	M	Good	Good	Multi-stem from 1m. G australe fruiting southern buttress and lower limb. Non-native epiphytes/parasite in branch unions. Heavy with foliose lichen.		40+	A1	456.3	12.1
T63	Quillia	5	1	130	2	1	3	2	1	SM	Good	Good	Some leaf chlorosis.		10+	C1	7.6	1.6
T64	Chilean fire bush	2	6	50	1	1	1	2	0	M	Good	Good	Shrub planting.		10+	C1	6.8	1.5

Table 1: Schedule of Trees and Tree Quality Assessment*

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** See Table 2 for definitions of categories

No	Species	Ht.	S	St. 1.5m	Canopy Spread				Cr. CI	Ls	SC	PC	Comments /Observation	Preliminary Management Advice	LE	Cat **	RPAm 2	RPA r
					N	S	E	W										
T65	Lawson cypress	18	1	830	3	3	3	3	0	M	Good	Good	Golden variety.		20+	B1	311.7	10.0
T66	Blepharocal yx cruckshanks ii	3	6	50	2	2	2	2	0	M	Good	Good	Shrub planting.		10+	C1	6.8	1.5
T67	Myrceugenia colchaguens is	4	6	50	1	1	1	1	0	EM	Good	Good	Shrub planting.		10+	C1	6.8	1.5
T68	Camellia sp.	4	6	50	2	2	1	2	0	EM	Fair	Fair	Previously suppressed minor dieback.		10+	C2	6.8	1.5
T69	Drimys winteri	5	1 2	80	2	2	2	3	0	EM	Good	Good	Shrub planting.		10+	C1	34.7	3.3
T70	Pieris formosa	4	1 2	50	3	2	3	2	0	M	Good	Good	Shrub planting.		10+	C1	13.6	2.1
T71	Betula ermanii	10	2	230; 280	4	5	5	6	2	EM	Good	Good	Growing well.		20+	B1	59.4	4.3
T72	Ilex x altaclerensis 'Lawsoniana'	9	2	300; 210	3	3	3	4	1	EM	Good	Good	Ivy clad into crown inhibiting VTA.	Sever ivy and resurvey in one year.	20+	B2	60.7	4.4
T73	Viburnam sp.	3	1	80	1	2	1	4	1	SM	Fair	Good	Heavy lean west.		10+	C1	2.9	1.0

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* See Table 3 for key to terms

** See Table 2 for definitions of categories

No	Species	Ht.	S	St. 1.5m	Canopy Spread				Cr. CI	Ls	SC	PC	Comments /Observation	Preliminary Management Advice	LE	Cat **	RPAm 2	RPA r
					N	S	E	W										
G1	Mixed evergreen	5-7	1	100-250	3	3	3	3	0	EM	Good	Good	Understory shrub planting of cherry Laurel and holly.		10+	C1	28.3	3.0
G2	Mixed	3-8	1	100-350	3	3	3	3	0	EM	Good	Good	Understory growth of yew, sycamore, Irish yew, elder. Crown managed from path.		20+	B2	55.4	4.2
G3	Sycamore	9	1	300-400	4	4	4	4	1	EM	Good	Good	Surveyed from a distance. Dimensions estimated.		20+	B2	72.4	4.8
G4	Mixed broadleaf	4-15	1	100-500	5	5	5	5	0	EM	Fair	Good	Self-set sycamore, yew, holly and willow around pond. Limited access.		20+	B2	113.1	6.0
G5	Mixed broadleaf	15	1	200	3	4	1	1	0	EM	Fair	Good	Unmanaged Hedgerow trees grown into line of trees. Contains hornbeam, hawthorn and horse chestnut.	Relay into hedgerow.	10+	C2	18.1	2.4
G6	Cherry laurel	5	1	100-200	3	3	3	3	0	EM	Fair	Good	Shrub growth. Acting invasively and allelopathically.		<10	U	19.2	2.5
G7	Cherry laurel	5	1	100-200	3	3	3	3	0	EM	Fair	Good	Shrub growth. Suckering.		10+	C3	20.1	2.5

Table 1: Schedule of Trees and Tree Quality Assessment*

* See Table 3 for key to terms

** See Table 2 for definitions of categories

No	Species	Ht.	S	St. 1.5m	Canopy Spread				Cr. CI	Ls	SC	PC	Comments /Observation	Preliminary Management Advice	LE	Cat **	RPAm ²	RPA r
					N	S	E	W										
G8	Mixed broadleaf	5-10	1	80- 150	4	4	4	4	1	SM	Good	Good	Self-seeded group of colonising sycamore. Some holly and maytena.		40+	C1	10.2	1.8
G9	Woolly tea tree	5	3	160; 100; 80	3	3	3	3	1	M	Good	Good	Multi-stem group planting.		20+	B2	19.0	2.5
H1	Mixed broadleaf	2	1	50- 100	1	1	1	1	0	EM	Good	Good	Managed hedgerow. Contains sycamore, hornbeam, oak and field maple.		40+	B3	4.5	1.2

Table 2: BS: 5837 2012 Tree Quality Assessment Definitions

TREES TO BE CONSIDERED FOR REMOVAL		
Category & Definition	Criteria	Identification on Plan
Category U Those in such a condition that they cannot realistically be retained as a living tree 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 U category trees (i.e. Where for whatever reason the loss of companion shelter cannot be mitigated by pruning) - Trees that are dead or are showing signs of significant immediate or irreversible overall decline. - Trees infected with pathogens of significance to the health and or safety of other trees nearby by or very low quality trees suppressing adjacent trees of better quality.	DARK RED

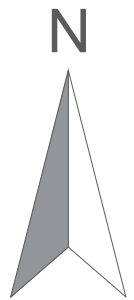
TREES TO BE CONSIDERED FOR RETENTION				
Category & Identification	1 Mainly arboricultural values	2 Mainly landscape values	3 Mainly cultural values including conservation	Identification on plan
Category A Trees of High Quality with an estimated remaining life expectancy of at least 40 years	Trees that are a particularly good example of their species, especially if rare or unusual, or essential components of groups or of formal or semi-formal arboricultural features e.g. the dominant and/or principal trees in an avenue)	Tree groups or woodlands of particular visual importance as arboricultural and/or landscape features.	Tree groups or woodlands of significant conservation historical, commemorative or other value (e.g. veteran trees or wood pasture)	GREEN
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.	Trees that might be included in the high category but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage).	Trees present in numbers, usually 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.	BLUE

TREES TO BE CONSIDERED FOR RETENTION				
Category & Identification	1 Mainly arboricultural values	2 Mainly landscape values	3 Mainly cultural values including conservation	Identification on plan
Category C Trees of a 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 landscape value and/or trees offering low or only temporary/transient landscape benefits.	Trees with no material conservation or other cultural benefits.	GREY

Table 3: Key Schedule of Trees

Column Heading	Explanation
Tree No	Sequential number corresponding to number on plan.
Species	English names.
Ht.	Height in metres.
S	Number of main stems.
St. 1.5 (Stem Diameter)	Stem diameter when measured in accordance with Annex C of BS 5837:2012.
NSEW	Crown radius in metres to cardinal points of the compass.
Cr. Cl. (Crown Clearance)	Height in metres between the ground and underside of canopy.
Ls.	Life stage definitions. Y= Young. SM = Semi-mature. EM = Early mature. M = Mature. OM = Over mature.
SC	Brief description of structural condition.
PC	Brief description of physiological condition.
Preliminary Advice	Preliminary tree works advice and recommendations.
LE	Estimated remaining useful life contribution in years. <10, 10+, 20+ and 40+ yr.
Cat. (Category)	Categorisation grading in accordance with BS 5837 2012. Trees suitable for retention: - Category A trees of high quality and amenity value. Category B trees of moderate quality and amenity value. Category C trees of low quality or amenity value. British Standards BS 5837:2012 recommends that these categories may be further broken down into sub-categories A1 A2 A3 pertaining to Arboricultural, Landscape or Cultural values respectively.
RPA m²	Root Protection Area (RPA). Indicative area around a tree measured in m ² and calculated in accordance with Annex C of BS 5837:2012 deemed to contain sufficient rooting volume to maintain the viability of a tree and where the protection of roots and soil structure is treated as a priority.
RPA r	Root Protection Area (RPA) radius calculation centred on the base of the tree and calculated in accordance with Annex C of BS 5837:2012

Appendix 2: Tree Constraints Plan



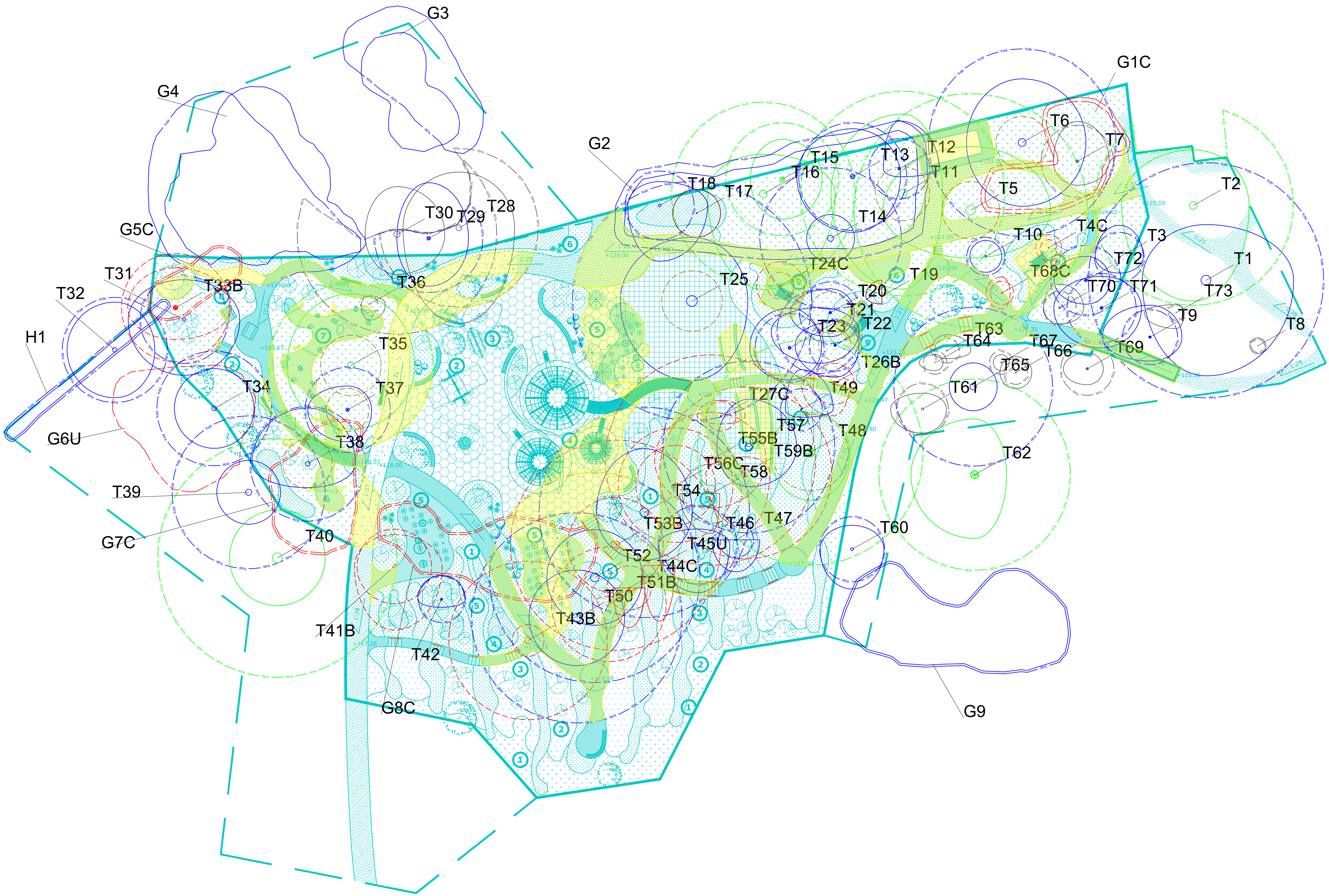
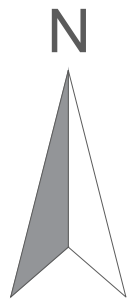
Limited access around pond. Trees surveyed from a distance. RPAs offset from permanent water feature.



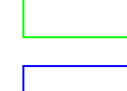
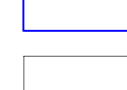
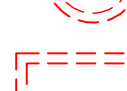
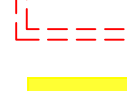
Job title		
Wakehurst		
Client		
Kew Gardens - Wakehurst		
Map title		
Tree Constraints Plan		
Section:	1/1	Scale (at A1) 1:300
Date of survey		
3/07/2026 & 4/07/2026		
Surveyor		
Wesley Rawson		
Drawn	Approved	Date
WR	IH	6/07/2026

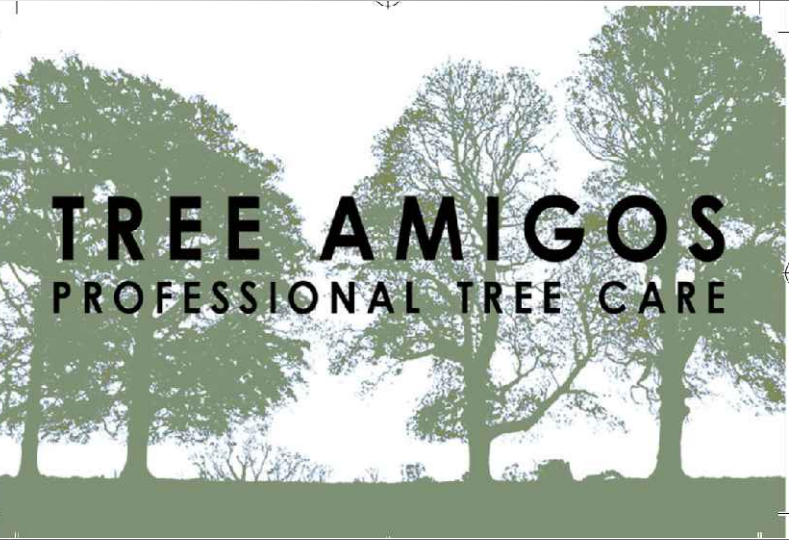
- Category A - Trees of high quality or value with a life expectancy of 40+ years*
- Category B - Trees of moderate quality or value with a life expectancy of 20+ years
- Category C - Trees of low quality or value with a life expectancy of 10+ years
- Category U - Poor quality trees with limited value and a life expectancy of <10 years
- RPA Root Protection Area (RPA) of category A trees
- RPA Root Protection Area (RPA) of category B trees
- RPA Root Protection Area (RPA) of category C trees
- Category A - Groups of trees, hedgerows and woodland
- Category B - Groups of trees, hedgerows and woodland
- Category C - Groups of trees, hedgerows and woodland
- Category U - Groups of trees, hedgerows and woodland

Appendix 3: Tree Retention and Removal Plan



Job title			Wakehurst
Client			Kew Wakehurst
Map title			Tree Retention and Removal Plan
Section:	1/1	Scale (at A1)	1:300
Date of survey			3/07/2026 & 4/07/2026
Surveyor			Wesley Rawson
Drawn	WR	Approved	IH
		Date	13/07/2026

-  Category A - Trees of high quality or value with a life expectancy of 40+ years*
-  Category B - Trees of moderate quality or value with a life expectancy of 20+ years
-  Category C - Trees of low quality or value with a life expectancy of 10+ years
-  Category U - Poor quality trees with limited value and a life expectancy of <10 years
-  RPA - Root Protection Area (RPA) of category A trees
-  RPA - Root Protection Area (RPA) of category B trees
-  RPA - Root Protection Area (RPA) of category C trees
-  Category A - Groups of trees, hedgerows and woodland
-  Category B - Groups of trees, hedgerows and woodland
-  Category C - Groups of trees, hedgerows and woodland
-  Category U - Groups of trees, hedgerows and woodland
-  Structural Root Zone (SRZ) around stems of trees
-  Trees to be removed
-  Groups & Hedgerows to be removed
-  Construction incursion into RPA of retained tree



Appendix 4: Glossary of Terms

Glossary of Terms

Term	Explanation
Arboricultural impact assessment and method statement (AIA)	Evaluation of direct and indirect effects of a proposed design and/or construction.
Arboricultural Method Statement (AMS)	Methodology for the implementation of any aspect of development that is in the root protection area or has the potential to result in the loss of or damage to a tree to be retained.
Branch structure	Qualitative description of formation of main framework of limbs and branches.
Canopy face	Orientation of canopy relative to cardinal points of the compass
Canopy radius	A measurement taken from the centre of a tree to the furthest radial extension of tree canopy relative to the cardinal points of the compass.
Competent Person	Person who has training and experience relevant to the matter being addressed and an understanding of the requirements of the particular task being approached.
Conservation Area	Local Planning Authority special designation generally prohibiting tree works without 6 weeks prior written notification.
Construction Exclusion Zone (CEZ)	Area based upon the calculated root protection area prohibiting access.
Cavity	Open and exposed aperture where wood tissue has internally degraded.
Constraints check	Formal search of local authority records to determine legal and statutory constraints on tree works.
Crown lifting	Removal of lower branches to achieve a stated vertical clearance above ground level or other surface.
Crown reduction	Pruning of a trees canopy in both height and width.
Decay	Deterioration and breakdown of tree wood fibres resulting in structural and/or physiological dysfunction of a tree.
Dieback	Continual decline and death of wood tissue including twigs and branches.
Epicormic growth	Growth that emerges from dormant buds along the trunk and branches of a tree.
Failure	Description of structural failure or wood fibres including fracture of branches, limbs and main stems.
Fork	Area or point of union between one or more limbs or branches.

Glossary of Terms

Term	Explanation
Hazard Risk Assessment	Qualitative and quantitative appraisal of the potential for tree failure and the possible risk of harm or damage to persons or property.
Local Planning Authority	Body responsible for the administration of Statutory duties relating to Development Management.
Multi-stem	A single tree formed from 2 or more codominant main stems
Occlusion	Wood development enclosing an extant wound or pruning cut.
Pruning	The targeted removal of branches or limbs using saws or other tools.
Physiological Condition	Observation relating to a trees physiology for example vigour, leaf area, growth rate, the presence of pests or disease.
Root Protection Area	Root Protection Area (RPA). Indicative area around a tree deemed to contain sufficient rooting volume to maintain the viability of a tree.
Shelter belt	A wind break normally made up of one or more trees planted in such a way to provide cover from the wind.
Structural Condition	Observation relating to a trees structural integrity and the presence of any physical defects.
Suppressed	Where a trees development has been influenced or effected by the presence of competing vegetation.
Tree Constraints Plan	A scaled plan indicating above and below ground constraints relating to the protection of trees
Tree Preservation Order	A legal order made by the local planning authority protecting specific trees in the interests of amenity.
Visual Tree Assessment (VTA)	A method of assessment based upon the research developed to recognise dynamic responses of a tree to its surroundings.
'V' Shaped Branch Union	The union point between two branches that have grown at a tight angle, forming the 'V' shape. This structure is inherently weaker than the 'U' shaped union.
'U' Shaped Branch Union	The union point between two branches that have grown at a wider angle, forming the 'U' shape. This structure is considered to be the strongest and most optimised shape that a union can form.

Appendix 5: Photographs

Photograph 1

View looking east towards T2 and
T1 (left to right).



Photograph 2

View looking west with T18,
T17 and G2 on the right.



Photograph 3

View looking north towards T25.



Photograph 4

View looking north west with T35 on the left and trees T28-T30 beyond the wall on the right.



Photograph 5

View looking south with G8 in the foreground and the cypress and thuja trees behind.



Photograph 6

View looking north at the line of cypress and thuja trees on the southern boundary of the Application Site.



Photograph 7

View looking south at the stems
of Chinese fir T48.



Photograph 8

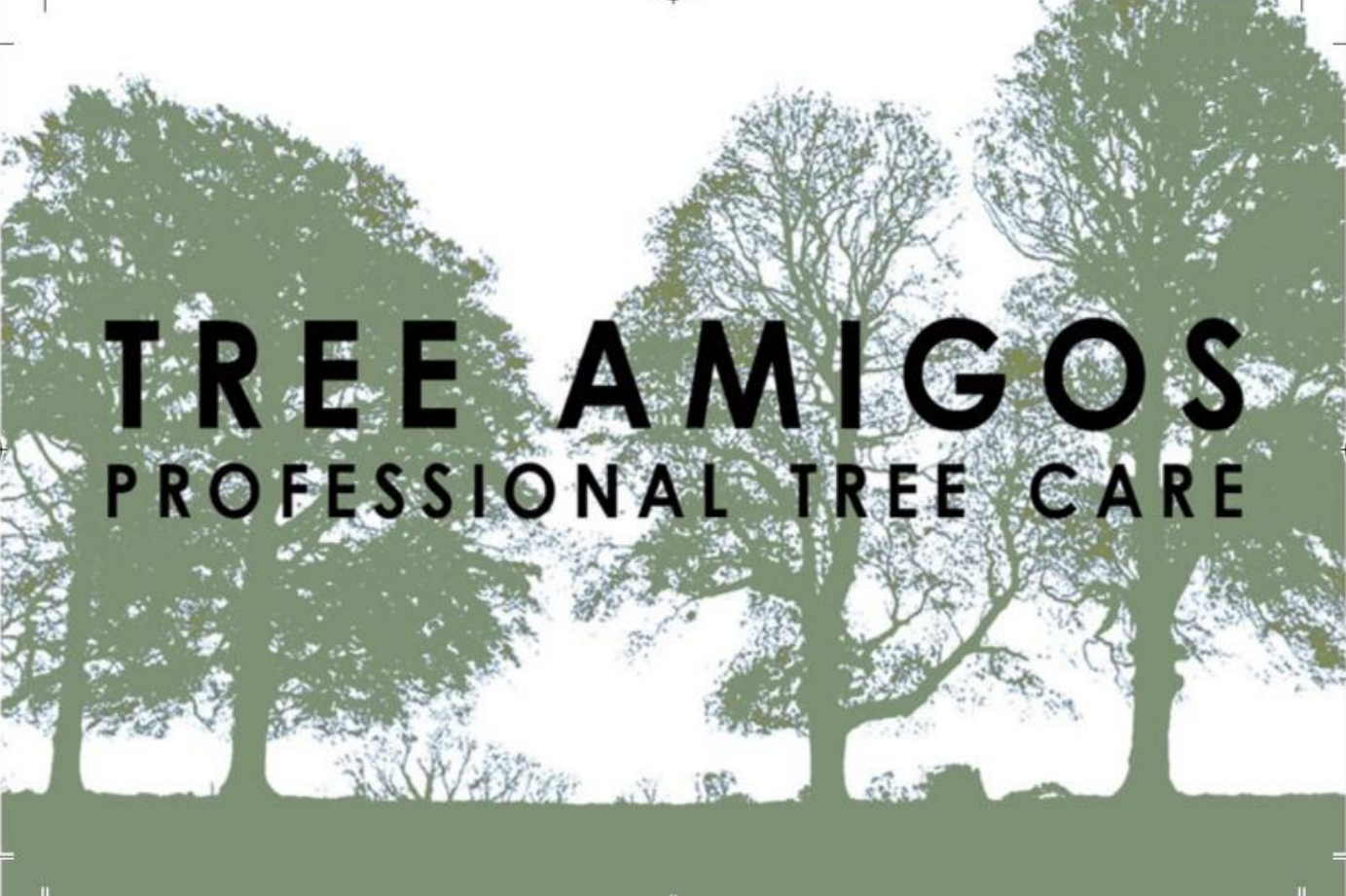
View looking west with T57 in the
foreground on the right.



Photograph 9

View looking west at T11 and T12
(left to right) within the group G2.





TREE AMIGOS

PROFESSIONAL TREE CARE