





Woking Football Club

Arboricultural Impact Assessment

Report for Woking Football Club

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Author	James Potts BSc (Hons) MArk	oorA								
Version	Checked by Approved by Date									
V4.0	Wendy McFarlane MA MSc MCIEEM	Mark Cannon BA (Hons) Dip.LA MArborA	20/11/19							

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Executive Summary

The Ecology Consultancy was commissioned by Woking Football Club to undertake a ground level survey of trees that could be affected by future works associated with the development of land at Woking Football Club. 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 and landscape values (categories A2, B2, C3)².

The main findings of the survey are as follows:

- There were 81 individual trees, 23 groups³ and two hedgerows in and adjacent to the proposed development site each described in Appendix 1 of this report.
- A tree constraints check was carried out with Woking Borough Council and it was confirmed that no trees located adjacent to or in the proposed development site were the subject to Tree Preservation Order or Conservation Area restrictions.
- Of the trees surveyed, a total of ten individuals were attributed Category A status, 14 individuals and four groups were attributed Category B status, 54 individuals, 19 groups and two hedgerows were attributed Category C status and three individuals were attributed Category U status.
- Root protection areas were calculated in accordance with BS 5837:2012 for each of the surveyed trees and ranged from 0.7m² to 706.9m².
- Development proposals will require the removal of 31 individual trees and the full or partial removal of 15 tree groups, each displayed in the Tree Retention and Removal Plan, provided in Appendix 3 of this report.
- Any work to trees should consider the potential presence of protected species, including breeding birds and roosting bats. The Preliminary Ecological Appraisal (The Ecology Consultancy, 2019) and any subsequent ecological reports should be consulted prior to the commencement of works

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.

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).

1 Introduction

BACKGROUND

1.1 The Ecology Consultancy was commissioned on 2 February 2019 by Woking Football Club carry out an arboricultural survey of trees at Woking Football Club and provide a report to inform future design proposals and tree protection. The survey was required to assess the condition of trees that could be affected by future development of the site and provide sufficient information for the development of site layouts and construction exclusion zones to enable the protection of existing 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.
- 1.3 Any clear 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.
- 1.4 The site is currently occupied by a football stadium (Woking Football Club); a collection of large-footprint, low-rise buildings, including the Woking Snooker Centre; David Lloyd Leisure Centre (including tennis courts), Woking Gymnastics Club; car parking; and a small number of residential properties situated in the north of the site.

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 Treework - 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.

DESCRIPTION OF THE PROPOSALS

1.5 Proposals comprise the redevelopment of the site, following the demolition of all existing buildings and structures, to provide a replacement stadium with ancillary facilities, including flexible retail, hospitality and community spaces, independent retail floorspace (Classes A1/A2/A3), a medical centre (Class D1) and vehicle parking, plus residential accommodation comprising of 1,048 dwellings (Class C3) within 5 buildings of varying heights of between 3 and 10 storeys (and undercroft and part basement levels) on the south and west sides of the site, together with provision of new accesses from Westfield Avenue to car parking, associated landscaping and the provision of a detached residential concierge building.

2 Methodology

TREE SURVEY

- 2.1 The tree survey was conducted in accordance with BS 5837:2012 the results of which 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 3, 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 is presented in Appendix 2 showing the recommended root protection areas (RPA) for all surveyed trees and highlighting each grading category using the colour key system as described in BS 5837:2012.
- 2.5 The site was visited on 19 February 2019, weather conditions were dry 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 Beloer, 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 taken 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 using the Woking Borough Council online database to search for Tree Preservation Order or Conservation Area restrictions to tree works in or adjacent to the site.

SUPPORTING DOCUMENTS

2.10 Drawing Reference: 0189-7-851A-853A (Woods Hardwick, 2018), LRW_7884_L(00)67Z Proposed Ground Floor Plan (LRW, 2019) and A241-KR-GA01-04B Landscape Layout (Arc LDP Ltd, 2019) were provided for the purposes of compiling this report. They includes the existing site features, as well as layouts of the proposed development.

PERSONNEL

- 2.11 The tree survey was carried out by James Potts BSc (Hons), MArborA and Stefan Harrison BSc (Hons).
- 2.12 James Potts is an Arboriculturalist at The Ecology Consultancy with over 5 years' experience within the sector, working as both a contractor and private consultant.
- 2.13 Stefan Harrison is an Assistant Arboriculturalist at The Ecology Consultancy with over 3 years' experience producing arboricultural reports and conducting arboricultural surveys.

LIMITATIONS

- 2.14 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.
- 2.15 Of the trees surveyed, a total of 12 were ivy clad, inhibiting standard VTA inspection methods and stem measurements. As such, assumptions have been made relating to the condition and size of ivy clad trees. Management recommendations for ivy clad trees have been made in this report and should be followed to remove any risk that may be posed by them.
- 2.16 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.
- 2.17 Of the trees surveyed, a total of 18 were situated in areas where access to the main stem was not possible. As such, assumptions have been made relating to dimensions

of the main stem, and the overall condition is based upon the visible parts of the tree only.

2.18 Trees are living organisms and their health and condition change with time. Therefore, this assessment remains valid for 12 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 RPA is presented in Appendix 2 and photographs of the site are provided in Appendix 4.
- 3.2 The survey recorded 68 individual trees and 22 groups which could potentially be affected by future development. These comprised: arrowwood 'Dawn' *Viburnum* x bodnantense 'Dawn', black poplar *Populus nigra*, cherry laurel *Prunus laurocerasus*, cherry plum *Prunus cerasifera*, common ash *Fraxinus excelsior*, common elder *Sambucus nigra*, common hazel *Corylus avellana*, common privet *Ligustrum vulgare*, crack willow *Salix fragilis*, deodar cedar *Cedrus deodara*, field maple *Acer campestre*, goat willow *Salix caprea*, holm oak *Quercus ilex*, Japanese cherry *Prunus serrulata*, large leaved lime *Tilia platyphyllos*, Lawson cypress *Chamaecyparis lawsoniana*, Leyland cypress *Cupressus* x *leylandii*, London plane *Platanus* x *acerifolia*, Norway maple *Acer platanoides*, ornamental callery pear *Pyrus calleryana* 'Chanticleer', pedunculate oak *Quercus robur*, red oak *Quercus rubra*, silver birch *Betula pendula*, sycamore *Acer pseudoplatanus*, weeping willow *Salix* x *sepulcralis* 'Chrysocoma' and wild cherry *Prunus avium*.
- 3.3 A total of 11 groups surveyed comprised mixed species. Descriptions of their specific species composition are provided in the Schedule of Trees in Appendix 1.
- 3.4 A total of two individuals were dead, and their species could not be identified.
- 3.5 The distribution of each species is provided in Table 1 below.

Table 1: Species key and site frequency for trees potentially affected by development

Species	Frequency									
Оросноз	Tree	Group	Hedgerow							
Arrowwood 'Dawn'	-	1	-							
Black poplar	2	-	-							
Cherry laurel	4	5	-							

Table 1: Species key and site frequency for trees potentially affected by development

Species		Frequency	
Оросіса	Tree	Group	Hedgerow
Cherry plum	1	-	-
Common ash	8	-	-
Common elder	1	-	-
Common hazel	1	-	-
Common privet	1	-	-
Crack willow	2	-	-
Dead	2	-	-
Deodar cedar	1	-	-
Field maple	3	-	-
Goat willow	-	1	-
Holm oak	1	-	-
Japanese cherry	2	-	-
Large leaved lime	5	-	-
Lawson cypress	-	-	1
Lawson's cypress	12	3	-
Leyland cypress	-	2	-
London plane	9	-	-
Mixed species	-	11	1
Norway maple	4	-	-
Ornamental callery pear	2	-	-
Pedunculate oak	10	-	-
Red oak	2	-	-
Silver birch	2	-	-
Sycamore	4	-	-
Weeping willow	1	-	-
Wild cherry	1	-	-

- 3.6 Physiological and structural condition⁵ of the majority of surveyed trees was consistent with Category C status (54 individuals, 19 groups and two hedgerows), with 14 individuals and four groups assigned Category B status, ten individuals assigned Category A status and three individuals assigned Category U status.
- 3.7 Of the trees surveyed, 13 individuals and three groups were classified to be at a mature life stage⁶, two individuals and one group were classified as young, 44 individuals, 13 groups and one hedgerow were classified as semi mature, 21 individuals, six groups were classified as early mature and one individual was classified as over mature.
- 3.8 A summary of the number of trees surveyed corresponding to BS 5837:2012 tree quality assessment definitions is provided below in Table 2 below.

Table 2: Grade Classifications

BS 5837:2012	Trees attributed to each grade	F	requen	СУ
Grades A to U	Troop diffication to odoll glado	Т	G	Н
А	T1, T2, T3, T4, T16, T69, T78, T79, T80, T81	10	-	-
В	T6, T12, T27, T29, T45, T55, T56, T58, T62, T65, T70, T72, T73, T77, G5, G6, G11, G17	14	4	-
С	T5, T7, T8, T9, T10, T11, T13, T14, T15, T17, T18, T19, T20, T21, T22, T23, T24, T25, T26, T28, T30, T31, T32, T33, T34, T35, T36, T38, T39, T40, T41, T42, T43, T44, T46, T47, T48, T49, T50, T51, T52, T53, T54, T57, T59, T60, T61, T63, T64, T66, T71, T74, T75, T76, G1, G2, G3, G4, G7, G8, G9, G10, G12, G13, G14, G15, G16, G18, G19, G20, G21, G22, G23, H1, H2	54	19	2
U	T37, T67, T68			

3.9 All Category A and B trees and groups, as described in Table 2, should be given priority consideration for retention during any future development which should take full account of above and below ground constraints, as shown on the Tree Constraints Plan (Appendix 2).

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.

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.

- 3.10 A summary of the condition and value of the most noteworthy trees is provided below, based on information presented in Appendix 1.
 - London plane T1, was situated 10m north of the northern site boundary and 76m north-west of the northern corner of the football stadium. The tree was mature, was 17.5m in height, had a single stem with a diameter of 785mm and a maximum canopy radius extending 8m to the south and west. The main stem of the tree had a minor lean to the north. Despite this, the tree appeared to be in fair structural condition and good physiological condition, requiring no immediate remedial works.
 - London plane T2, was situated 16m north of the northern site boundary, 19m west
 of T1. The tree was mature, was 18m in height, had a single stem with a diameter
 of 890mm and a maximum canopy radius extending 9m to the east. The main
 stem of the tree had an acute lean to the east. Despite this, the tree appeared to
 be in fair structural and physiological condition, requiring no immediate remedial
 works.
 - London plane T3, was situated 10m north of the northern site boundary and 8m west of T2. The tree was mature, was 18m in height, had a single stem with a diameter of 1180mm and a maximum canopy radius extending 8m in all directions. The canopy of the tree contained minor retained deadwood and hanging branches. Notwithstanding this, the tree appeared to be in good structural and physiological condition.
 - London plane T4, was situated 7m north of the northern site boundary, 10m west of T3. The tree was mature, was 17.5m in height, had a single stem with a diameter of 985mm and a maximum canopy radius extending 7.5m to the south. The main stem of the tree had a minor lean to the north and the canopy of the tree contained minor retained deadwood and hanging branches. In spite of this, the tree appeared to be in fair structural and physiological condition.
 - Pedunculate oak T16, was situated 50m north of the northern site boundary and 25m south-east of T1. The tree was mature, was 20m in height, had a single stem with a diameter of 1250mm and a maximum canopy radius extending 7m in all directions. The base of the tree was inaccessible, however the visible parts of the tree appeared to be in good structural and physiological condition, requiring no immediate remedial works.
 - Pedunculate oak T27, was situated on the northern site boundary, 60m north-east of the eastern corner of the football stadium. The tree was early mature, was 16m

in height, had a single stem with a diameter of 700mm and a maximum canopy radius extending 7.5m in all directions. The base of the tree was inaccessible and the main stem was ivy clad. However, the visible parts of the tree appeared to be in fair structural and good physiological condition.

- Weeping willow T58, was situated directly south of the access road to the Woking David Lloyd Gym, 147m west of the eastern site boundary. The tree was mature, was 13m in height, had a single stem with a stem diameter of 600mm and a maximum canopy radius extending 6.5m in all directions. The tree appeared to be in good structural and physiological condition, requiring no immediate remedial works.
- Crack willow T64, was situated on the southern site boundary, 116m west of the eastern site boundary and 110m south-east of the southern corner of the football stadium. The tree was mature, was 16m in height, had three main stems with an average diameter of 500mm and a maximum canopy radius extending 5m to the north. The tree was a lapsed pollard, was being shaded out by neighbouring canopies and had fungal fruiting bodies of *Cerioporus squamosus* located on the northern side of the stems, 1m above ground level. Access to the main stems was restricted and each were heavily ivy clad. However, the visible parts of the tree appeared to be in poor structural and physiological condition.

DESK STUDY

3.11 It was confirmed that no trees located adjacent to or in the proposed development site were the subject to Tree Preservation Order or Conservation Area restrictions.

ARBORICULTURAL IMPACT ASSESSMENT

- 3.12 Based on Drawing Reference: LRW_7884_L(00)67Q Proposed Ground Floor Plan (LRW, 2019) and A241-LA01b-Landscape Layout (Arc LDP Ltd, 2019) received from the client on the 3 July 2019, the impact of the proposal on the existing trees has been assessed and all trees that will potentially be affected by the development are listed below in Table 3. Tree numbers in the table correspond to the Schedule of Trees in Appendix 1 and Tree Constraints Plan described in Appendix 2.
- 3.13 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, 2017).

Table 3: Summary of trees possibly affected by the development

Impact	Reason	BS Cat A	BS Cat B	BS Cat C					
Trees to be removed	Located within development footprint.		T6, T12, T55, T56, T58, G11, G17 (30%)	T5, T7, T8, T9, T10, T11, T13, T14, T15, T33, T34, T46, T47, T48, T49, T50, T51, T52, T53, T54, T57, T59, T60, T61, T64. T66, G1, G4 (35%), G7 (40%), G10, G12, G13, G14, G16 (85%), G18, G19, G20 (40%), G21 (35%), G22 (15%)					
	Health and safety	T67, T68							
Trees which	Excavation for new hardstanding.	T2, T3, T4	T27, T29, T45, T65, G5, G17	T25, T26, T30, T31, T32, 35, 38, 39, 40, T41, T42, T43, T44, G3, G4, G9					
could sustain damage to RPA	Excavation for foundation	T3, T4	T45, T65	T41					
	Soil compaction through construction traffic access	T1, T2, T3, T4	T45	T34, T35, T36, T38, T39, T40, T41, T42, T43, T44					
Trees which could sustain damage to stem or canopy	Impact by construction traffic.	T1, T2, T3, T4	T45, T65	T34, T35, T36, T38, T39, T40, T41, T42, T43, T44, T64, T66, G19, G20, G21					
Trees to be pruned	Access facilitation	-	T45, T58, T65, G17	T64, T66, G20, G21					

Tree removal and Pruning

- 3.14 Based on the design proposal, a total of 31 individual trees and eight groups will require removal in order to facilitate access for construction, each described in Table 3.
- 3.15 A further seven groups, G4, G7, G16, G17, G20, G21 and G22 will require partial removal of between 15% and 85% of their total canopy areas for G22 and G16 respectively. Indicative areas to be removed from these are displayed in the Tree Retention and Removal Plan, provided in Appendix 3.

- 3.16 Two individual trees T67 and T68, attributed Category U status, should be removed for health and safety reasons as well as for the purpose of facilitating development proposals.
- 3.17 Trees T45, T58, T64, T65, T66 and groups G17, G20 and G21 will all require moderate pruning works in order to facilitate access for demolition and construction work. Pruning specifications are detailed in Section 4 of this report.

Trees which could potentially sustain damage to stem, canopy or RPA.

3.18 Development proposals have the potential to indirectly impact the stem, canopy or RPAs of 18 individual trees and three groups scheduled for retention as displayed in Table 3. In order to ensure that these features are successfully retained during the proposed works, the drafting of specialist tree protection measures as part of an Arboricultural Method Statement will be required.

Incursions into RPA of trees effected by the development proposal.

3.19 The proposed development will encroach into the RPA's of 22 individual trees and five groups to be retained. As displayed in Table 4 below.

Table 4: Proposed incursions in RPAs of trees to be retained.

Tree ID	Activity	Total RPA (m²)	Area of incursion (m²)	Area of Incursion (%)
T2	Installation of hardstanding	358.3	24.2	6.8
T3	Installation of hardstanding	629.9	138.0	21.9
T4	Installation of hardstanding	438.9	119.2	27.2
T25	Installation of hardstanding	40.7	14.9	36.6
T26	Installation of hardstanding	40.7	9.7	23.8
T27	Installation of hardstanding	221.7	27.9	12.6
T29	Installation of hardstanding	166.3	44.4	26.7
T30	Installation of hardstanding	55.4	20.6	37.2
T31	Installation of hardstanding	55.4	21.8	39.3
T32	Installation of hardstanding	40.7	10.5	25.8
T35	Installation of hardstanding	4.5	1.4	30.9

Table 4: Proposed incursions in RPAs of trees to be retained.

Tree ID	Activity	Total RPA (m²)	Area of incursion (m²)	Area of Incursion (%)
T37	Installation of hardstanding	10.2	0.3	2.9
T38	Installation of hardstanding	4.5	1.3	28.7
T39	Installation of hardstanding	4.5	0.6	13.3
T40	Installation of hardstanding	4.5	0.4	8.8
T41	Installation of hardstanding	326.9	97.3	29.8
T42	Installation of hardstanding	81.4	24.8	30.5
T43	Installation of hardstanding	40.7	13.3	32.7
T44	Installation of hardstanding	28.3	12.3	43.5
T45	Installation of hardstanding	191.1	49.6	26.0
T65	Installation of hardstanding	221.7	25.9	11.7
T66	Installation of hardstanding	55.4	21.6	39.0
G5	Installation of hardstanding	118.2	18.6	15.7
G7	Installation of hardstanding	41.5	4.8	11.6
G8	Installation of hardstanding	92.0	18.2	19.8
G9	Installation of hardstanding	47.8	7.4	15.5
G17	Installation of hardstanding	865.0	387.0	44.7
G20	Installation of hardstanding	246.7	103.2	41.8
G21	Installation of hardstanding	285.8	94.0	32.9
Т3	Excavation for foundation	629.9	28.2	4.5
T4	Excavation for foundation	438.9	19.1	4.4
T41	Excavation for foundation	326.9	11.2	3.4
T65	Excavation for foundation	221.7	37.7	17.0

3.20 Installation of proposed new hardstanding for access roads, carparks and public walkways will incur into the RPAs of 24 individual trees and seven groups to be retained as detailed in Table 4. Incursions into the RPAs of these trees ranged from 2.9% to 44.7% of the total RPAs of T37 and G17 respectively. Proposed new hardstanding will generally be installed in areas where existing hard surfaces or made ground is already

situated and as a result, is unlikely to significantly affect soil structure inside the RPAs of trees to be retained, provided that existing sub bases in these area are retained as part of proposed works. However, where existing sub-bases and levels cannot be maintained, specialist methods of excavation and construction under direct Arboricultural Supervision will be required inside the RPAs of trees in order to enable their safe retention.

- 3.21 Proposed new surfaces inside the RPAs of trees T2-T4, T25-T32 and groups G3-G5 will be constructed over open and made ground. As a result, any proposed build-up or new surfaces in these areas will need to comprise a load bearing, permeable system in order to protect the existing soil strata, while maintaining gas and water transfer to the trees root systems.
- 3.22 Excavations for proposed new foundations will incur into the RPAs of trees T3, T4, T41, T58, T64 and T65 by between 1.1% and 19.5% for trees T66 and T58 respectively.
- 3.23 Incursions by proposed foundations inside the RPAs of trees T3, T4 and T41 as detailed in Table 4 were considered to be of negligible significance, and unlikely to impact their structural or physiological condition. As such, specialist methods of construction will not be required in these areas.
- 3.24 The Incursion by proposed building foundations inside the RPA of trees T65 is considered to be of moderate significance. However, the existing surface in this area comprises non permeable hardstanding covering the RPA of the tree. As such, it is likely that roots of trees T65 will have favoured more open, soft landscape situated to the south. As a result, excavations for foundations inside the RPA of T65 are considered unlikely to significantly impact the trees structural or physiological conditions. However, specialist methods of excavation and construction under direct Arboricultural Supervision are recommended inside the RPAs of trees in order to enable their safe retention.

Impact on visual amenity and local character

3.25 Trees T6, T12, T55, T56, G11 and G17 were all attributed Category B status for their moderate size, quality or public visibility. Without appropriate mitigation as detailed in section 4 of this report, their removal or partial removal, would represent a significant impact to visual public amenity.

3.26 Development proposals will require the removal of 24 individual Category C trees and the removal or partial removal of 12 Category C tree groups as described in Table 3. These trees and groups were attribute Category C status for small size, low quality and locations in areas of low public visibility. As a result, their removal or partial removal is not considered to represent a significant impact to visual public amenity. However, the removal of this significant percentage of the sites overall canopy cover will require appropriate mitigation as described in Section 4 of this report.

4 Recommendations

TREE WORKS

4.1 Table 5 below displays all recommended tree works required in order to facilitate proposed construction works as well as works recommended for health and safety and reasons and arboricultural good practice.

Table 5: Recommended tree works

Works	Specification	Tree ID				
	Removal of trees to facilitate construction works , as displayed in the Tree Retention and Removal Plan (Appendix 3)	T5, T6, T7, T8, T9, T10, T11, T12, T13, T14, T15, T33, T34, T46, T47, T48, T49, T50, T51, T52, T53, T54, T55, T56, T57, T58, T59, T60, T61, T64, G1, G10, G11, G12, G13, G14, G18				
Removal	Partial removal of groups facilitate construction works. Indicative areas to be removed displayed in the Tree Retention and Removal Plan (Appendix 3)	G4 (35%), G7 (40%), G16 (85%), G17 (30%), G20 (40%), G21 (35%), G22 (15%)				
	Removal for health and safety reasons	T67, T68				
	Pruning to facilitate demolition and construction works	T58, T64, T65, G17, G20, G21				
Pruning	Remedial works to tree for health and safety reasons. Remove deadwood and/or broken branches	T3, T4				
Monitoring/	Remove ivy and re-inspect	T13, T24, T25, T26, T27, T36, T41, T42, T64, T66, G2				
Inspection	Structural/Decay assessment of base due to decay fungi					

- 4.2 As detailed in Table 4, the following tree pruning operations will be required in order to facilitate access for development.
 - Tree T65 and group G17 will require lower lateral branches in their northern canopy quadrants to be reduced in length by 1.5m.

- T66 will require lateral branches in its western canopy quadrant to be reduced in length by 1.5m,
- Tree groups G20 and G21 will require lower lateral branches in their western canopy quadrants to be crown lifted to a height of 5m above ground level.
- Weeping willow T58 will require lower lateral branches in its north and west canopy quadrants to be crown lifted to a height of 5m above ground level.
- 4.3 All tree works and ivy removal, should give due consideration to the potential presence of protected species, including breeding birds and roosting bats. The Preliminary Ecological Appraisal (The Ecology Consultancy, 2019) and any subsequent ecological reports should be consulted prior to the commencement of works.
- 4.4 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.
- 4.5 All tree pruning should be carefully planned and undertaken in accordance with *BS* 3998: 2010 Recommendation for Tree Works.
- 4.6 Any recommendations highlighting the management of potentially hazardous trees should be reviewed as soon as is practically possible.

MITIGATION

- 4.7 The proposed landscaping scheme A241-LA01b-Landscape Layout (Arc LDP Ltd, 2019), includes tree planting details which addresses the potential loss of visual public amenity where tree removal has been deemed is unavoidable. The planting detail will include approximately 275 new trees to be situated across the site.
- 4.8 The removal and partial removal of 28 individual trees and 14 tree groups to facilitate access for construction represents a cumulative loss of approximately 3000m² of canopy area, representing approximately half of the total canopy cover on site. Proposed new tree planting will mitigate this loss in canopy cover by providing a range of sizes and species, to be confirmed as part of the Design and Access Statement, with details on individual species selected to be confirmed subject to planning condition. When established, the proposed planting scheme will provide an overall increase in tree quality and

- 4.9 Often the need for future remedial pruning or tree removal can be avoided through careful species selection and planning during the design of the mitigation planting scheme.
- 4.10 The tree selection should be appropriate to the site and chosen from a species palette in accordance with local tree planting policies, as well as being in accordance with any recommendations provided in the Preliminary Ecological Appraisal (The Ecology Consultancy, 2019) and any subsequent ecology reports.
- 4.11 The positioning of mitigation planting in relation to new or existing buildings should take full account of the final canopy height and spread of all trees included in the planting scheme. Buildings should ideally be located a sufficient distance from the predicted canopy line and RPA to avoid future pressure to undertake remedial pruning or tree removal.
- 4.12 It is recommended that specifications on aftercare and maintenance, including irrigation, as well as protection and formative pruning during establishment are included as part of the finalised tree planting strategy. Recommendations should be appropriate to the proposed planting and should be in compliance with Section 11 of BS 8545:2014 *Trees from nursery to establishment in the landscape- Recommendations.*

ISSUES FOR THE ARBORICULTURAL METHOD STATEMENT

- 4.13 Installation of new hardstanding and curb edges adjacent to T58 should require minimal excavation into its RPA. Levels of existing hardstanding of road and carparking surfaces should be retained. Wherever possible, existing sub-base layers should be re-used for any new surfaces to be installed to ensure minimal changes to below ground conditions. Where soil regrading is unavoidable, final levels should be informed by trial excavations to establish the depth and size of existing roots within the RPA of the tree, ensuring adequate growing media for nutrient uptake and anchorage is retained.
- 4.14 The design and layout of new buildings should take into consideration the maximum canopy height and width of all trees to be retained. Buildings should ideally be located beyond the RPAs of the trees to be retained and allow sufficient distance from the existing canopy line to avoid future pressure to undertake remedial pruning or tree removal. Where the location of buildings inside the RPA is unavoidable, special engineering of foundations will be required and presented in a future method statement.

- 4.15 In order to minimise disturbance in the RPAs of retained trees, excavation into the soil or soil regrading should not be a requirement of finalised construction layouts, existing levels should remain intact and should be protected from overloading to prevent soil compaction.
- 4.16 Protective fencing should be installed accordance with figure 2 of BS 5837:2012 to enable the safe retention of trees to be retained. The positioning of tree protection and the establishment of construction exclusion zones (CEZ) should initially be based upon the root protection areas as described in Appendix 1 and should be in place prior to the commencement of works.
- 4.17 All works should be undertaken from outside the RPA wherever possible. Where working in an RPA is unavoidable, ground protective measures fully compliant with section 6.2 of BS 5837: 2012 and agreed by the consulting arboriculturalist should be implemented.
- 4.18 Where construction of new buildings or hardstanding inside RPAs is likely to significantly impact a trees physiological or structural condition, specialist methods of construction should be developed and specified as part of the Arboricultural method Statement

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Appendix 1: Schedule of Trees

Table 1: Schedule of Trees and Tree Quality Assessment*

No Species	Species	Ht.	S	St. 1.5	C	anopy	Spre	ad	Cr.	Ls	SC	PC	Comments	Preliminary Management	LE	Cat	RPAm	RPA
140	Оросіос			m	N	S	Е	W	CI			. 0	/Observation	Advice		**	2	r
T1	London plane	17.5	1	785	7	8	6	8	6	М	Fair	Good	Minor lean to north.	No immediate works required.	40+	A2	278.8	9.4
T2	London plane	18	1	890	6	5	9	2	6	М	Fair	Fair	Heavy lean to east. Large branch stubs at crown break.	No immediate works required.	40+	A2	358.3	10.7
Т3	London plane	18	1	1180	8	8	8	8	2	М	Good	Good	Minor retained deadwood and hanging branches.	Remove deadwood and hanging branches.	40+	A1	629.9	14.2
T4	London plane	17.5	1	985	6	7.5	4	7	3	М	Fair	Fair	Minor lean to north. Minor retained deadwood.	Remove deadwood.	40+	A2	438.9	11.8
T5	Norway maple	11	1	295	3	3	3	3	3	SM	Fair	Fair	Compression fork at 1.5m.	No immediate works required.	20-40	C1	39.4	3.5
Т6	Common ash	14	1	385	4	4	4	4	3.5	EM	Fair	Fair	Base inaccessible.	No immediate works required.	20-40	B2	67.1	4.6
Т7	Wild cherry	5.5	1	70	1	1	1	1	2	Υ	Fair	Fair	-	No immediate works required.	10-20	C1	2.2	0.8
Т8	Common ash	13.5	2	365	4	4	4	4	3	EM	Fair	Fair	Twin stem. Base inaccessible.	No immediate works required.	40+	C1	60.3	4.4
Т9	Silver birch	6	1	90	1.5	1.5	1.5	1.5	2	SM	Fair	Fair	-	No immediate works required.	20-40	C1	3.7	1.1

Table 1: Schedule of Trees and Tree Quality Assessment*

No Species	Ht.	S	St. 1.5	Ca	anopy	Sprea	ad	Cr.	Ls	SC	PC	Comments	Preliminary Management	П	Cat	RPAm	RPA	
140	Орсоюз	110		m	N	S	Е	w	CI			. 0	/Observation	Advice		**	2	r
T10	Crack willow	10	5	400	5	4.5	1.5	4	2	EM	Fair	Fair	Large pruned branch stubs in eastern canopy.	No immediate works required.	20-40	C1	72.4	4.8
T11	Common ash	13	2	350/ 250	1.5	3.5	2.5	2.5	2	SM	Fair	Fair	Base inaccessible. Twin stem.	No immediate works required.	10-20	C1	83.7	5.2
T12	Pedunculate oak	11	1	600	5	5	6	5	3	EM	Fair	Fair	-	No immediate works required.	40+	B1	162.9	7.2
T13	Silver birch	13	1	365	3	1	1	1	2.5	SM	Fair	Fair	Heavily ivy clad.	Remove ivy and reinspect.	10-20	C1	60.3	4.4
T14	Common ash	12	1	350	3	3	3	3	3.5	SM	Fair	Fair	Base inaccessible.	No immediate works required.	20-40	C1	55.4	4.2
T15	Lawson's cypress	7.5	1	250	2	2	2	2	2	SM	Fair	Fair	Base inaccessible.	No immediate works required.	20-40	C1	28.3	3.0
T16	Pedunculate oak	20	1	1250	7	7	7	7	5	М	Good	Good	Base inaccessible.	No immediate works required.	40+	A1	706.9	15.0
T17	Holm oak	6	1	400	1.5	1.5	1.5	1.5	1.5	EM	Poor	Fair	Pruned completely back to scaffold structure.	No immediate works required.	10-20	C1	72.4	4.8
T18	Cherry laurel	2	1	40	0.2 5	0.2 5	0.2 5	0.2 5	0	SM	Fair	Fair	-	No immediate works required.	20-40	C2	0.7	0.5
T19	Cherry laurel	2	1	40	0.2 5	0.2 5	0.2 5	0.2 5	0	SM	Fair	Fair	-	No immediate works required.	20-40	C2	0.7	0.5

Table 1: Schedule of Trees and Tree Quality Assessment*

No	Species	Ht.	S	St. 1.5	Ca	anopy	Sprea	ad	Cr.			PC	Comments	Preliminary Management	LE	Cat	RPAm	RPA
113	Оросіос			m	N	S	Е	W	CI			. 0	/Observation	Advice		**	2	r
T20	Cherry laurel	2	1	40	0.2 5	0.2 5	0.2 5	0.2 5	0	SM	Fair	Fair	-	No immediate works required.	20-40	C2	0.7	0.5
T21	Cherry laurel	2	1	40	0.2 5	0.2 5	0.2 5	0.2 5	0	SM	Fair	Fair	-	No immediate works required.	20-40	C2	0.7	0.5
T22	Common ash	11	1	250	2	2	2	2	3.5	SM	Fair	Fair	-	No immediate works required.	20-40	C1	28.3	3.0
T23	Common ash	12	5	100/ 100/ 100/ 100/ 100	3	3	3	3	3	EM	Fair	Fair	-	No immediate works required.	20-40	C1	22.6	2.7
T24	Common ash	9	1	250	2.5	2.5	2.5	2.5	2	SM	Fair	Fair	Base inaccessible. Ivy clad.	Remove ivy and reinspect.	20-40	C1	28.3	3.0
T25	Pedunculate oak	9	1	300	3	3	3	3	1	SM	Fair	Fair	Ivy clad.	Remove ivy and reinspect.	20-40	C1	40.7	3.6
T26	Common ash	10	1	300	3	3	3	3	1	SM	Fair	Fair	Ivy clad.	Remove ivy and reinspect.	20-40	C1	40.7	3.6
T27	Pedunculate oak	16	1	700	7.5	7.5	7.5	7.5	4	EM	Fair	Good	Ivy clad. Base inaccessible.	Remove ivy and reinspect.	40+	B1	221.7	8.4
T28	Pedunculate oak	6	1	100	2.5	2	2	2	2	SM	Fair	Fair	-	No immediate works required.	40+	C1	4.5	1.2
T29	Sycamore	14	3	350/ 350/ 350	4	4	4	4	4	EM	Fair	Fair	Base inaccessible.	No immediate works required.	20-40	B2	166.3	7.3

Table 1: Schedule of Trees and Tree Quality Assessment*

No	Species	Ht.	S	St. 1.5	Ca	anopy	Sprea	ad	Cr.	Ls	SC	PC	Comments	Preliminary Management	Æ	Cat	RPAm	RPA
140	Ороско			m	N	S	E	w	CI			. 0	/Observation	Advice		**	2	r
T30	Sycamore	12	1	350	3	3	3	3	3	EM	Fair	Fair	-	No immediate works required.	20-40	C1	55.4	4.2
T31	Sycamore	12	1	350	3	3	3	3	3	EM	Fair	Fair	-	No immediate works required.	20-40	C1	55.4	4.2
T32	Common privet	6	4	150/ 150/ 150/ 150	2.5	2.5	2.5	2.5	2	EM	Good	Good	-	No immediate works required.	20-40	C1	40.7	3.6
T33	Field maple	8	1	120	1.5	1.5	1.5	1.5	2	SM	Fair	Fair	-	No immediate works required.	10-20	C1	6.5	1.4
T34	Lawson's cypress	5	1	100	1.5	1.5	1.5	1.5	0	SM	Fair	Fair	-	No immediate works required.	20-40	C1	4.5	1.2
T35	Lawson's cypress	5	1	100	1.5	1.5	1.5	1.5	0	SM	Fair	Fair	-	No immediate works required.	20-40	C1	4.5	1.2
T36	Black poplar	9	1	1250	1.5	1.5	1.5	1.5	1	ОМ	Poor	Poor	Pollarded stump. Heavily ivy clad. RPA Removed due to no active canopy	Remove ivy and reinspect.	20-40	C3	-	-
T37	Pedunculate oak	10	1	150	1	1	1	1	1.5	SM	Poor	Poor	Ivy clad pole.	Remove.	0-10	U	10.2	1.8
T38	Large leaved lime	7	1	100	2	2	2	2	2	SM	Fair	Fair	In hedge. Base inaccessible.	No immediate works required.	20-40	C1	4.5	1.2

Table 1: Schedule of Trees and Tree Quality Assessment*

No	Species	Ht.	S	St.	Ca	anopy	Sprea	ad	Cr.	Ls	SC	PC	Comments	Preliminary Management	LE	Cat	RPAm	RPA
140	Opecies	116.		1.5 m	N	S	Е	w	CI	LS			/Observation	Advice		**	2	r
T39	Large leaved lime	7	1	100	2	2	2	2	2	SM	Fair	Fair	In hedge. Base inaccessible.	No immediate works required.	20-40	C1	4.5	1.2
T40	Large leaved lime	7	1	100	2	2	2	2	2	SM	Fair	Fair	In hedge. Base inaccessible.	No immediate works required.	20-40	C1	4.5	1.2
T41	Black poplar	10	1	850	2.5	2.5	2.5	2.5	3	EM	Fair	Fair	lvy clad. Pollard regrowth.	Remove ivy and reinspect.	20-40	C2	326.9	10.2
T42	Sycamore	12	2	300/ 300	3	3	3	3	2.5	EM	Fair	Fair	lvy clad. Pollard regrowth.	Remove ivy and reinspect.	10-20	C1	81.4	5.1
T43	Large leaved lime	8	1	300	2.5	2.5	2.5	2.5	3.5	EM	Fair	Fair	-	No immediate works required.	10-20	C1	40.7	3.6
T44	Japanese cherry	12	1	250	3	3	3	3	2	SM	Fair	Fair	-	No immediate works required.	40+	C1	28.3	3.0
T45	Large leaved lime	15	1	650	5	5	5	5	3	EM	Fair	Fair	Off site. Base inaccessible.	No immediate works required.	20-40	B2	191.1	7.8
T46	Japanese cherry	3	1	150	1.5	1.5	1.5	1.5	0	ЕМ	Fair	Fair	-	No immediate works required.	40+	C1	10.2	1.8
T47	Lawson's cypress	7	1	150	1.5	1.5	1.5	1.5	0	SM	Fair	Fair	-	No immediate works required.	10-20	C1	10.2	1.8
T48	Lawson's cypress	6	1	150	1	1	1	1	0	SM	Fair	Fair	-	No immediate works required.	10-20	C1	10.2	1.8

Table 1: Schedule of Trees and Tree Quality Assessment*

No	Species	Ht.	S	St.	Ca	anopy	Spre	ad	Cr.	Ls	SC	PC	Comments	Preliminary Management	LE	Cat	RPAm	RPA
140	Оресіез	116.		1.5 m	Ν	S	Е	w	CI	LS		10	/Observation	Advice		**	2	r
T49	Lawson's cypress	6	1	150	1	1	1	1	0	SM	Fair	Fair	-	No immediate works required.	10-20	C1	10.2	1.8
T50	Lawson's cypress	6	1	150	1	1	1	1	0	SM	Fair	Fair	-	No immediate works required.	10-20	C1	10.2	1.8
T51	Lawson's cypress	5	1	150	1	1	1	1	0	SM	Fair	Fair	-	No immediate works required.	10-20	C1	10.2	1.8
T52	Lawson's cypress	5	1	150	1	1	1	1	0	SM	Fair	Fair	-	No immediate works required.	10-20	C1	10.2	1.8
T53	Lawson's cypress	5	1	150	1	1	1	1	0	SM	Fair	Fair	-	No immediate works required.	10-20	C1	10.2	1.8
T54	Lawson's cypress	3	1	150	1	1	1	1	0	SM	Fair	Fair	-	No immediate works required.	10-20	C1	10.2	1.8
T55	Ornamental callery pear	12	1	250	2.5	2.5	2.5	2.5	2	EM	Fair	Fair	-	No immediate works required.	20-40	B1	28.3	3.0
T56	Ornamental callery pear	12	1	250	2.5	2.5	2.5	2.5	2	EM	Fair	Fair	-	No immediate works required.	20-40	B1	28.3	3.0
T57	Field maple	10	3	100/ 100/ 100	3	2	2	2	2	SM	Fair	Fair	-	No immediate works required.	20-40	C1	13.6	2.1
T58	Weeping willow	13	1	600	6.5	6.5	6.5	6.5	2.5	М	Good	Good	-	No immediate works required.	40+	B1	162.9	7.2

Table 1: Schedule of Trees and Tree Quality Assessment*

No	Species	Ht.	S	St. 1.5	C	anopy	Sprea	ad	Cr.	Ls	SC	PC	Comments	Preliminary Management	LE	Cat	RPAm	RPA
				m	Z	S	Е	W	CI				/Observation	Advice		**	2	r
T59	Lawson's cypress	6	1	100	1	1	1	1	1.5	SM	Fair	Fair	-	No immediate works required.	20-40	C1	4.5	1.2
T60	Field maple	8	1	250	2	2	3	1	2.5	SM	Fair	Fair	-	No immediate works required.	20-40	C1	28.3	3.0
T61	Norway maple	8	1	250	2	2	3	1	2.5	SM	Fair	Fair	-	No immediate works required.	20-40	C1	28.3	3.0
T62	Red oak	11	1	500	4.5	3	3.5	4	2.5	SM	Fair	Fair	Stem inaccessible. growing next to building. North canopy extends over roof.	No immediate works required	20-40	B2	113.1	6.0
T63	Red oak	11	1	450	3	4.5	3.5	4	2.5	SM	Fair	Fair	Stem inaccessible. growing next to building. Northwest canopy extends over roof.	No immediate works required	20-40	C2	91.6	5.4
T64	Crack willow	16	3	500	5	4	2.5	3	2	М	Poor	Poor	Base inaccessible. Heavily ivy clad stem and canopy. Shaded out by adjacent leylandii. Lapsed pollard. Fruiting body on base.	Remove ivy, Hazard risk assessment.	10-20	C1	113.1	6.0

Table 1: Schedule of Trees and Tree Quality Assessment*

No	Species	Ht.	S	St. 1.5	Ca	anopy	Sprea	ad	Cr.	Ls	SC	PC	Comments	Preliminary Management	LE	Cat	RPAm	RPA
140	Openio			m	N	S	E	W	CI			. 0	/Observation	Advice		**	2	r
T65	Pedunculate oak	8	1	700	4.5	5	4	4	2	М	Fair	Poor	Heavily pruned canopy. Epicormic growth throughout canopy. Minor deadwood in canopy.	No immediate works required.	20-40	B2	221.7	8.4
T66	Pedunculate oak	10	1	350	4.5	4	4.5	4	3	SM	Fair	Fair	Minor ivy on stem. Minor deadwood in canopy.	Remove ivy and reinspect.	20-40	C1	55.4	4.2
T67	Dead	10	1	280	3	3	3	3	2	SM	Poor	Poor	Base inaccessible. Dead.	Remove.	0-10	U	35.5	3.4
T68	Dead	10	1	280	3	3	3	3	2	SM	Poor	Poor	Base inaccessible. Dead.	Remove.	0-10	U	35.5	3.4
T69	Pedunculate oak	16	1	980	8	8	7.5	7.5	10	М	Good	Fair	-	No immediate remedial works	40+	A2	434.5	11.8
T70	Deodar cedar	14	1	750	4.5	6.5	6	6	9	EM	Fair	Fair	Crown cleared up to 9m, minor deadwood in canopy	No immediate remedial works	40+	B1	254.5	9.0
T71	Common hazel	6.5	2	100; 80	3.5	2.5	3	3	2	SM	Fair	Fair	-	No immediate remedial works	20-40	C1	7.4	1.5
T72	Norway maple	12	1	450	5	4.5	3	6	2	EM	Fair	Fair	Minor lean to west, suppressed by neighbouring oak	No immediate remedial works	20-40	B1	91.6	5.4

Table 1: Schedule of Trees and Tree Quality Assessment*

No	Species	Ht.	S	St. 1.5	Ċ	anopy	Sprea	ad	Cr.	Ls	SC	PC	Comments	Preliminary Management	LE	Cat	RPAm	RPA
110	Openio			m	N	S	Ш	W	CI			. 0	/Observation	Advice		**	2	r
T73	Pedunculate oak	16	1	1000	5	5	4.5	7.5	8	М	Fair	Fair	Ivy clad, minor deadwood and thinning of canopy	No immediate remedial works	20-40	B1	452.4	12.0
T74	Norway maple	7	1	150	1.5	1.5	1.5	1.5	2	Υ	Fair	Fair	Inaccessible	No immediate remedial works	10_20	C1	10.2	1.8
T75	Cherry plum	7	1	150	2	2	2	2	3	SM	Fair	Fair	Inaccessible	No immediate remedial works	10_20	C1	10.2	1.8
T76	Common elder	7.5	1	150	3	1	2.5	1.5	2	SM	Fair	Fair	Inaccessible	No immediate remedial works	10_20	C1	10.2	1.8
T77	London plane	16	1	755	6	4.5	6.5	5	10	EM	Fair	Fair	Minor deadwood in canopy, fungal fruiting bodies <i>Pholiota</i> squarrosa found surrounding base	Structural/ decay assessment of base	40+	B1	257.9	9.1
T78	London plane	16.5	1	700	7	5.5	6.5	5	10	EM	Fair	Fair	Minor lean to north	No immediate remedial works	40+	A2	221.7	8.4
T79	London plane	16.5	1	825	7	7	6.5	4.5	10	М	Good	Fair	Minor lean to north	No immediate remedial works	40+	A2	307.9	9.9
T80	London plane	16.5	1	910	6	7.5	7	5	10	М	Good	Fair	Minor lean to north, habitat hole at crown break to east. approx. 3m	No immediate remedial works	40+	A2	374.6	10.9
T81	London plane	16.5	1	900	8	6.5	7	6	10	М	Good	Good	Minor lean to north-east	No immediate remedial works	40+	A1	366.4	10.8

Table 1: Schedule of Trees and Tree Quality Assessment*

No Species	Ht.	S	St. 1.5	Ca	anopy	Sprea	ad	Cr.	Ls	SC	PC	Comments	Preliminary Management	LE	Cat	RPAm	RPA	
110	Сроско			m	N	S	Е	w	CI			. 0	/Observation	Advice		**	2	r
G1	Mixed species	8	1	90	1	1	1	1	1	Υ	Fair	Fair	Group comprising hazel and sycamore.	No immediate works required.	10-20	C2	-	1.1
G2	Mixed species	7.5	1	100	1.5	1.5	1.5	1.5	1.5	SM	Fair	Fair	Boundary group comprising hawthorn and blackthorn. Ivy clad.	Remove ivy and reinspect.	40+	C2	-	1.2
G3	Mixed species	8	6	150x 6	1.5	2.5	3	2.5	1	SM	Fair	Fair	Comprising mainly common privet with horse chestnut.	No immediate works required.	20-40	C2	-	4.4
G4	Mixed species	8	6	150x 6	1.5	2.5	3	2.5	1	SM	Fair	Fair	Comprising mainly common privet with horse chestnut.	No immediate works required.	20-40	C2	-	4.4
G5	Lawson's cypress	18	1	250	2.5	2.5	2.5	2.5	3	EM	Fair	Good	-	No immediate works required.	40+	B2	1	3.0
G6	Lawson's cypress	18	1	250	2.5	2.5	2.5	2.5	3	EM	Fair	Good	-	No immediate works required.	40+	B2	-	3.0
G7	Mixed species	2.5	1	150	1.5	1.5	1.5	1.5	0	SM	Fair	Fair	Mixed shrubs including arrowwood and laurel	No immediate works required.	20-40	C2	-	1.8
G8	Arrowwood 'Dawn'	1.5	1	150	1.5	1.5	1.5	1.5	0	SM	Fair	Fair	-	No immediate works required.	20-40	C2	-	1.8
G9	Cherry laurel	2.5	1	200	2	2	2	2	0	EM	Fair	Fair	-	No immediate works required.	40+	C2	-	2.4

Table 1: Schedule of Trees and Tree Quality Assessment*

No	Species	Ht.	S	St. 1.5	Ca	anopy	Sprea	ad	Cr.	Ls	SC	PC	Comments	Preliminary Management	LE	Cat	RPAm	RPA
140	Ороскоз	110.		m	N	S	Е	W	CI				/Observation	Advice		**	2	r
G10	Cherry laurel	2.5	1	200	2	2	2	2	0	EM	Fair	Fair	-	No immediate works required.	40+	C2	-	2.4
G11	Lawson's cypress	14	1	300	0.5	1.5	1.5	1.5	0	SM	Fair	Fair	-	No immediate works required.	20-40	B2	-	3.6
G12	Mixed species	2.5	1	200	2	2	2	2	0	EM	Fair	Fair	Comprising mixed species including birch and laurel.	No immediate works required.	40+	C2	-	2.4
G13	Mixed species	10	1	300	2	2	2	2	0	SM	Fair	Fair	Group comprising birch, laurel, beech, cherry and sycamore.	No immediate works required.	20-40	C2	-	3.6
G14	Mixed species	2	1	100	1	1	1	1	0	SM	Fair	Fair	Group comprising laurel, ivy and cherry.	No immediate works required.	10-20	C1	-	1.2
G15	Goat willow	10	3	270	3	3	3.5	3	2	EM	Fair	Fair	Linear group of 5 goat willow.	No immediate works required.	10-20	C2	-	3.2
G16	Mixed species	12	1	260	4	4	4	4	2	SM	Fair	Fair	Base inaccessible. Group composed primarily of sycamore and goat willow with bramble undergrowth.	No immediate works required.	10-20	C2	-	3.1
G17	Leyland cypress	17	1	300	4	4	4	4	2	М	Fair	Fair	Linear group of Leyland cypress on site boundary	No immediate works required.	10-20	B2	-	3.6

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. 1.5	Carlopy Opicad		Cr. Ls		SC	PC	Comments	Preliminary Management	LE	Cat	RPAm	RPA		
	opeo.ee			m	Z	S	Е	W	CI			. •	/Observation	Advice		**	2	r
G18	Cherry laurel	4	1	70	1	1	1	1	0	SM	Good	Good	Linear group next to site boundary.	No immediate works required.	10-20	C2	-	0.8
G19	Cherry laurel	4	1	70	1	1	1	1	0	SM	Good	Good	Next to site boundary.	No immediate works required.	10-20	C2	-	0.8
G20	Mixed species	17	1	300	4	4	4	4	2	М	Fair	Fair	Linear group of Leyland cypress and grand fir on site boundary.	No immediate works required.	10-20	C2	-	3.6
G21	Leyland cypress	17	1	300	4	4	4	4	2	М	Fair	Fair	Linear group of Leyland cypress with field maple. On site boundary.	No immediate works required.	10-20	C2	1	3.6
G22	Mixed species	12	1	260	4	4	4	4	2	SM	Fair	Fair	Base inaccessible. Group composed primarily of sycamore and goat willow with bramble undergrowth.	No immediate works required.	10-20	C2	-	3.1
G23	Chery laurel	4	1	100	1.5	1.5	1.5	1.5	0	SM	Fair	Fair	Small group of scattered cherry laurel extending along property front	No immediate works required.	20-40	C2	-	1.2
H1	Lawson cypress	3	1	75	1	1	1	1	0	SM	Fair	Fair	Extending along property front	No immediate works required.	20-40	C2		0.9

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.	ഗ	St.	C	anopy	Sprea	ad	Cr.			PC	Comments	Preliminary Management	LE		RPAm	RPA
140	Opecies	116.	0	1.5 m	N	S	Е	w	CI	LS			/Observation	Advice		**	2	r
H2	Mixed Species	6	1	185	2	2	2	2	0	EM	Fair	Fair	Comprising lawson cypress and cherry laurel, extending around the north-east corner of property	No immediate works required.	20-40	C2	-	2.2

Table 2: BS: 5837 2012 Tree Quality Assessment Definitions

TREES FOR REMOVAL					
Category & Definition	Criteria	Identification on Plan			
Category U Those in such a condition that they cannot realistically be retained as a 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 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. 	RED			

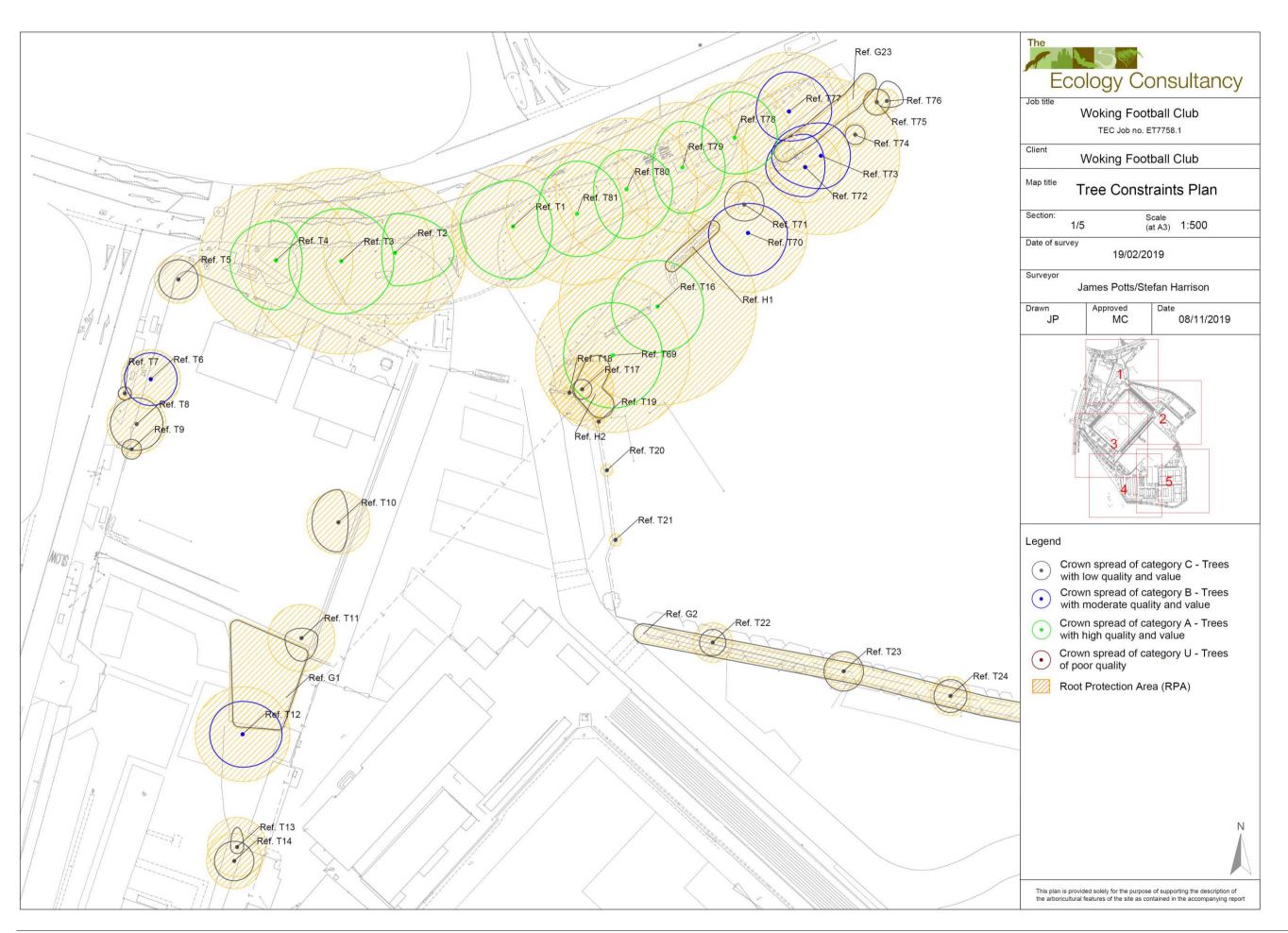
	TREES TO BE CONSIDERED FOR RETENTION						
Category & Identification	1 Mainly arboricultural values	2 Mainly landscape values	3 Mainly cultural values including conservation	Identification on plan			
Category A Trees of High Quality with an estimated remaining life expectancy of at least 40 years	Trees 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			

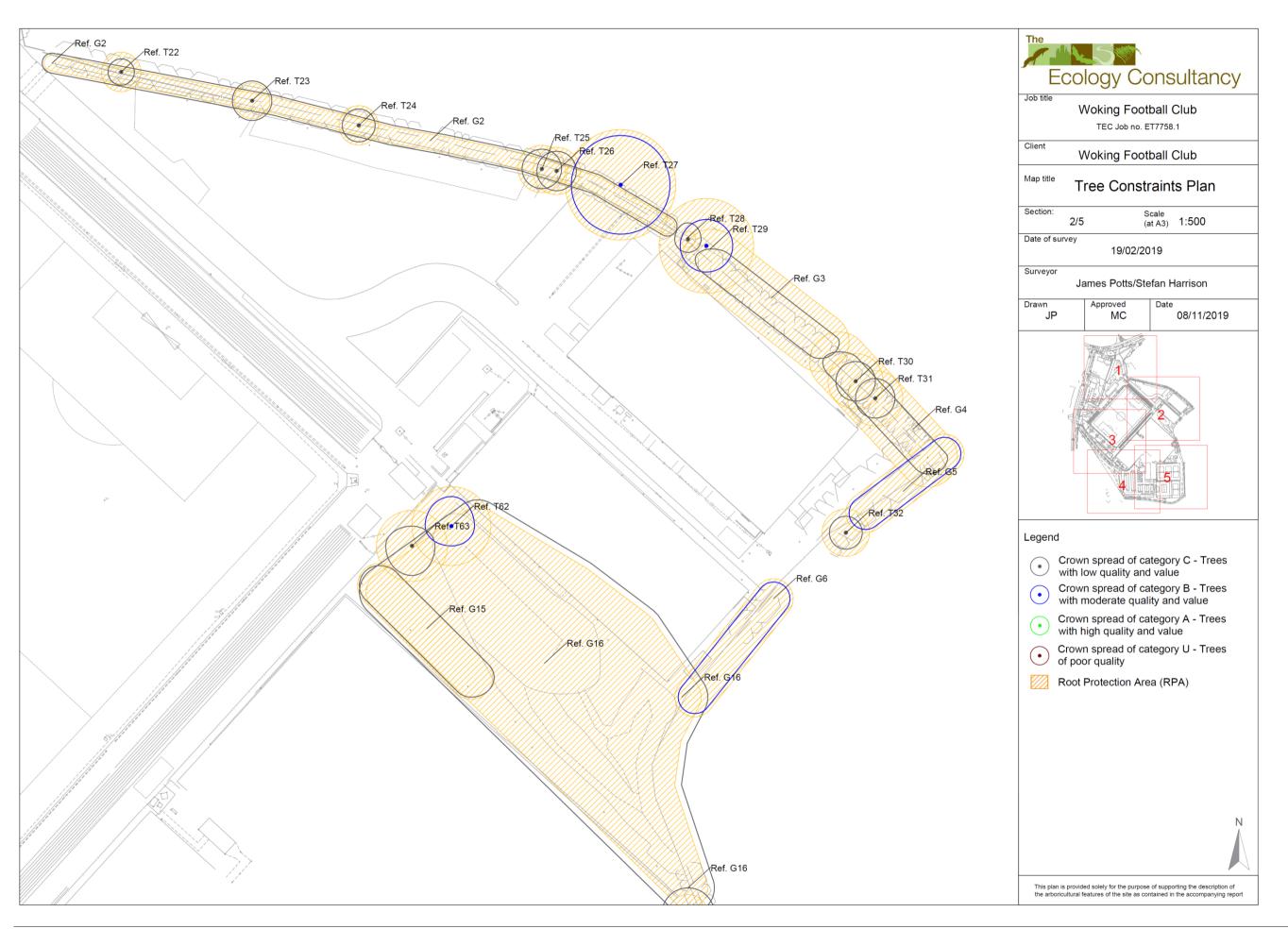
TREES TO BE CONSIDERED FOR RETENTION							
Category & Identification	1 Mainly arboricultural values	2 Mainly landscape values	3 Mainly cultural values including conservation	Identification on plan			
Category C Trees of a low quality with an estimated remaining life expectancy of at least 10 years or 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			

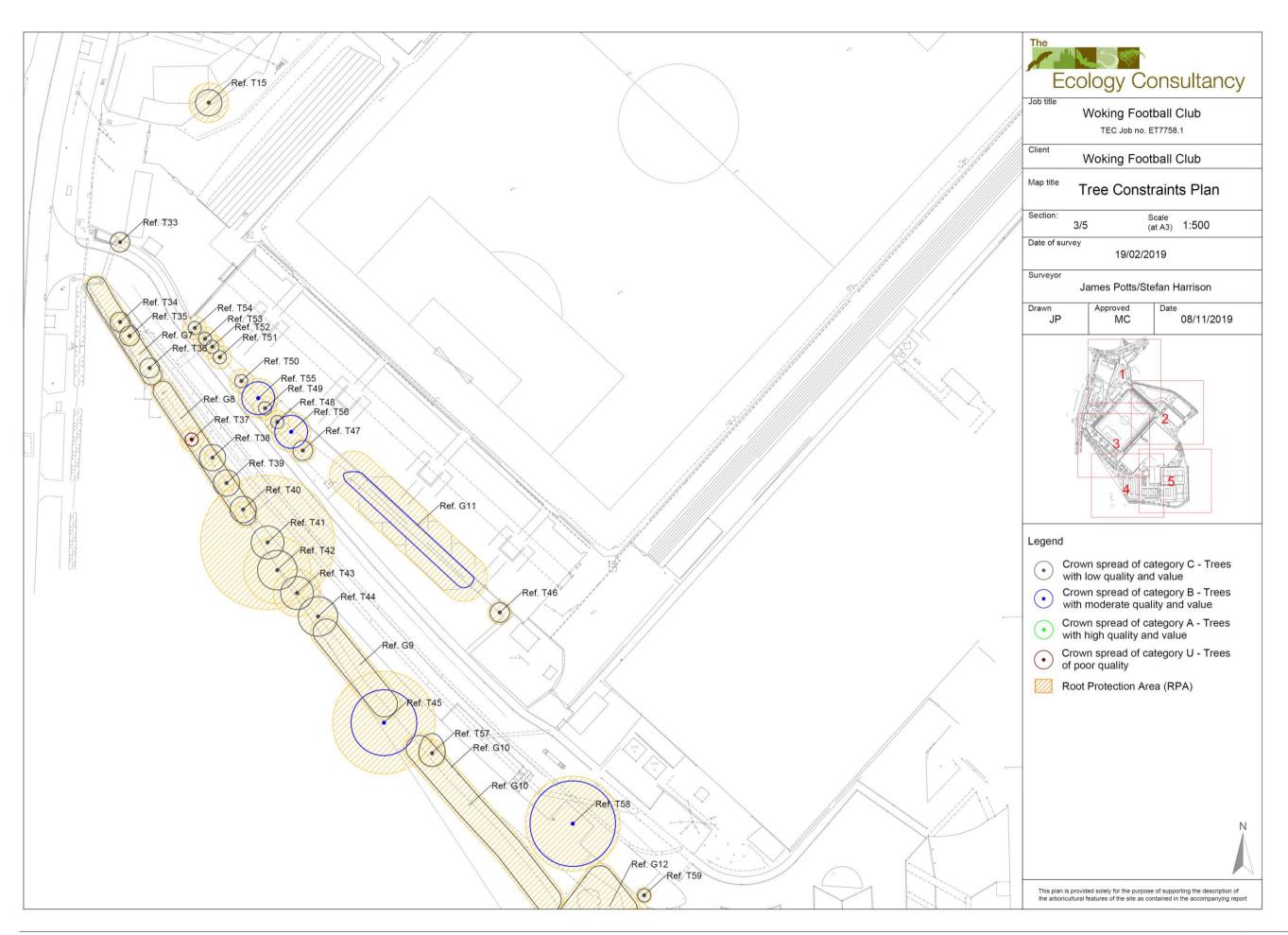
Table 3: Key Schedule of Trees

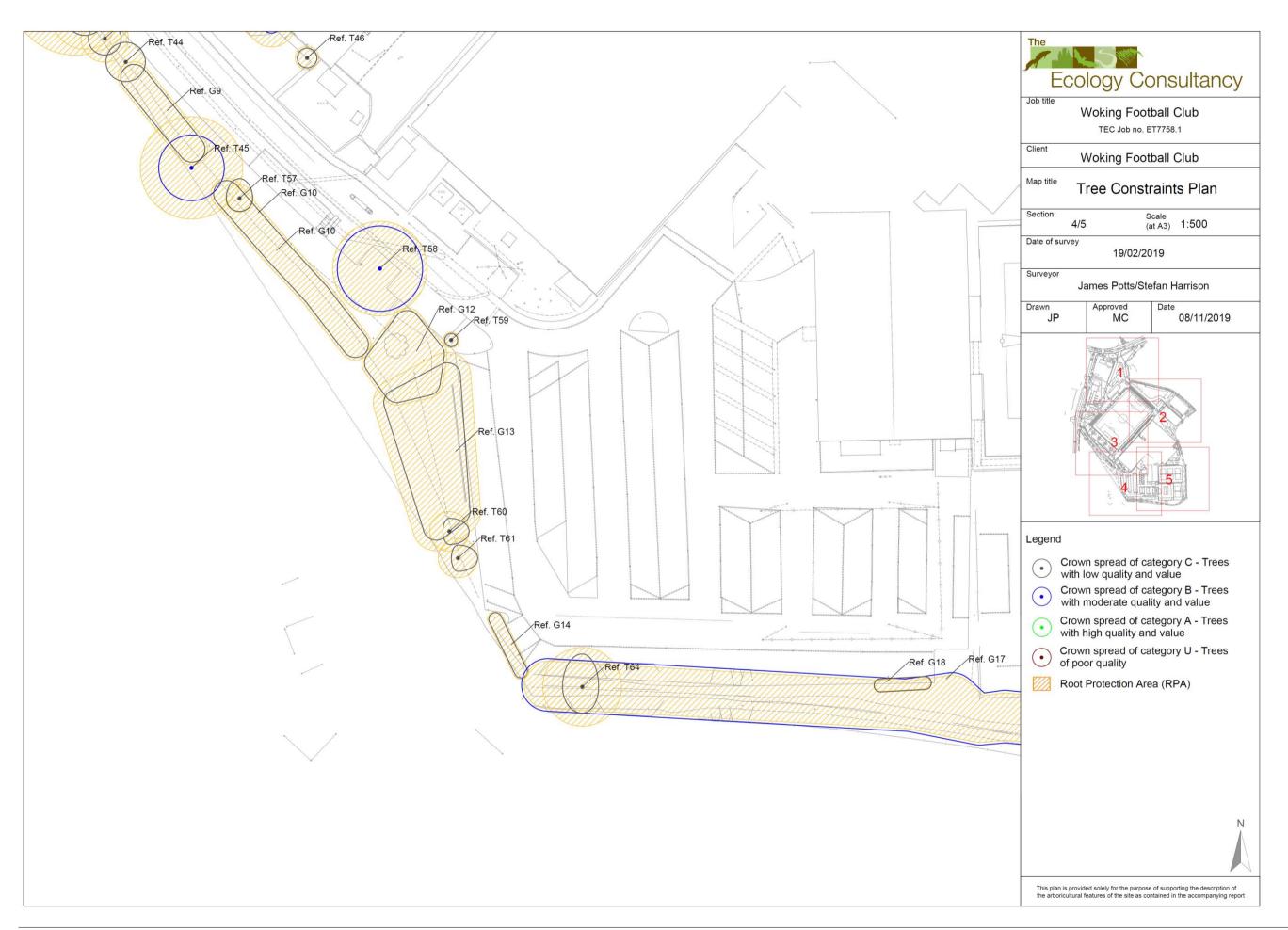
Column Heading	Explanation
Tree No	Sequential number corresponding to number on plan.
Species	English names.
Ht.	Height in metres.
s	Number of main stems.
St. 1.5 (Stem Diameter)	Stem diameter when measured in accordance with Annex C of BS 5837:2012.
NSEW	Crown radius in metres to cardinal points of 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 m² 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

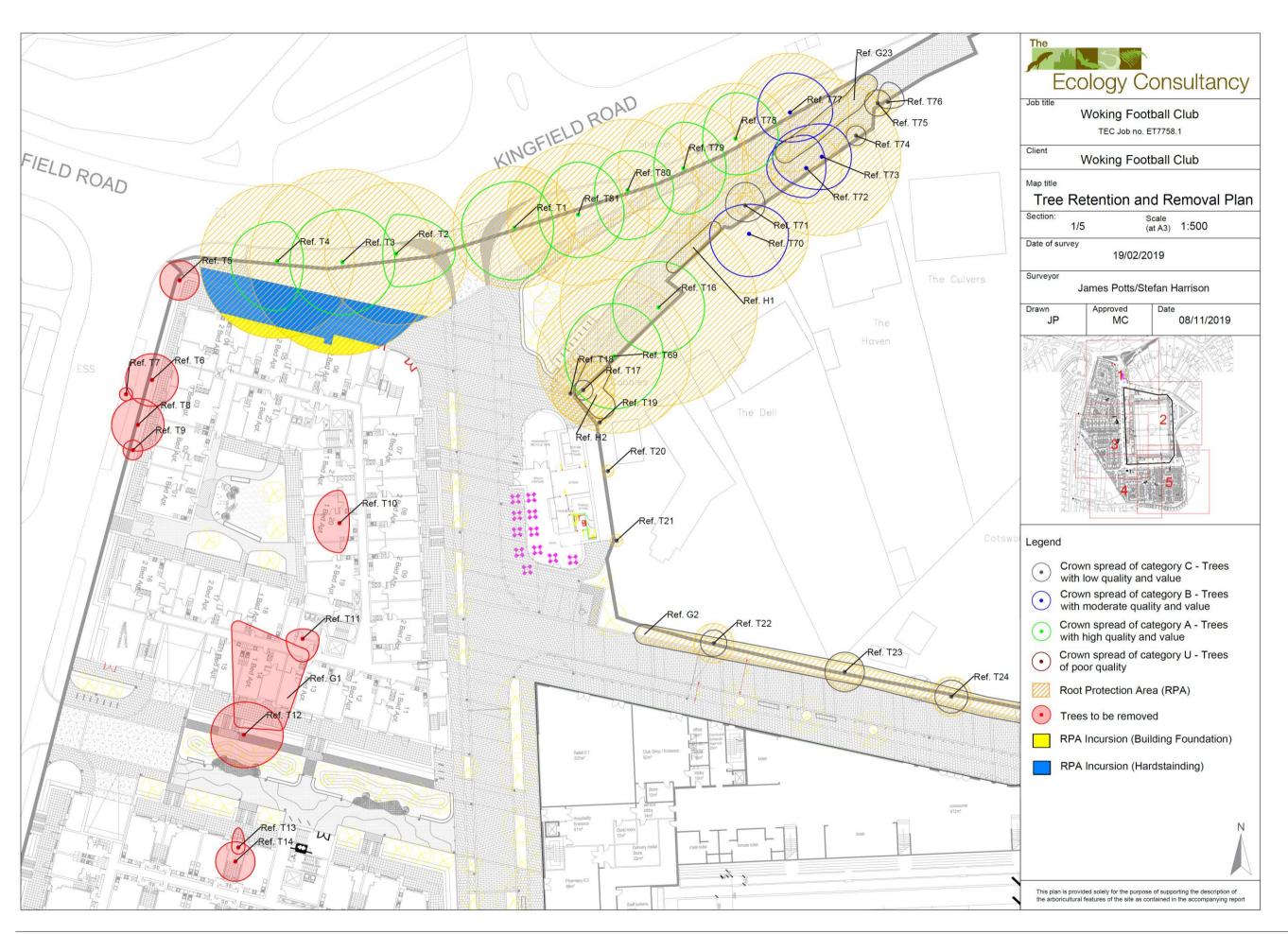


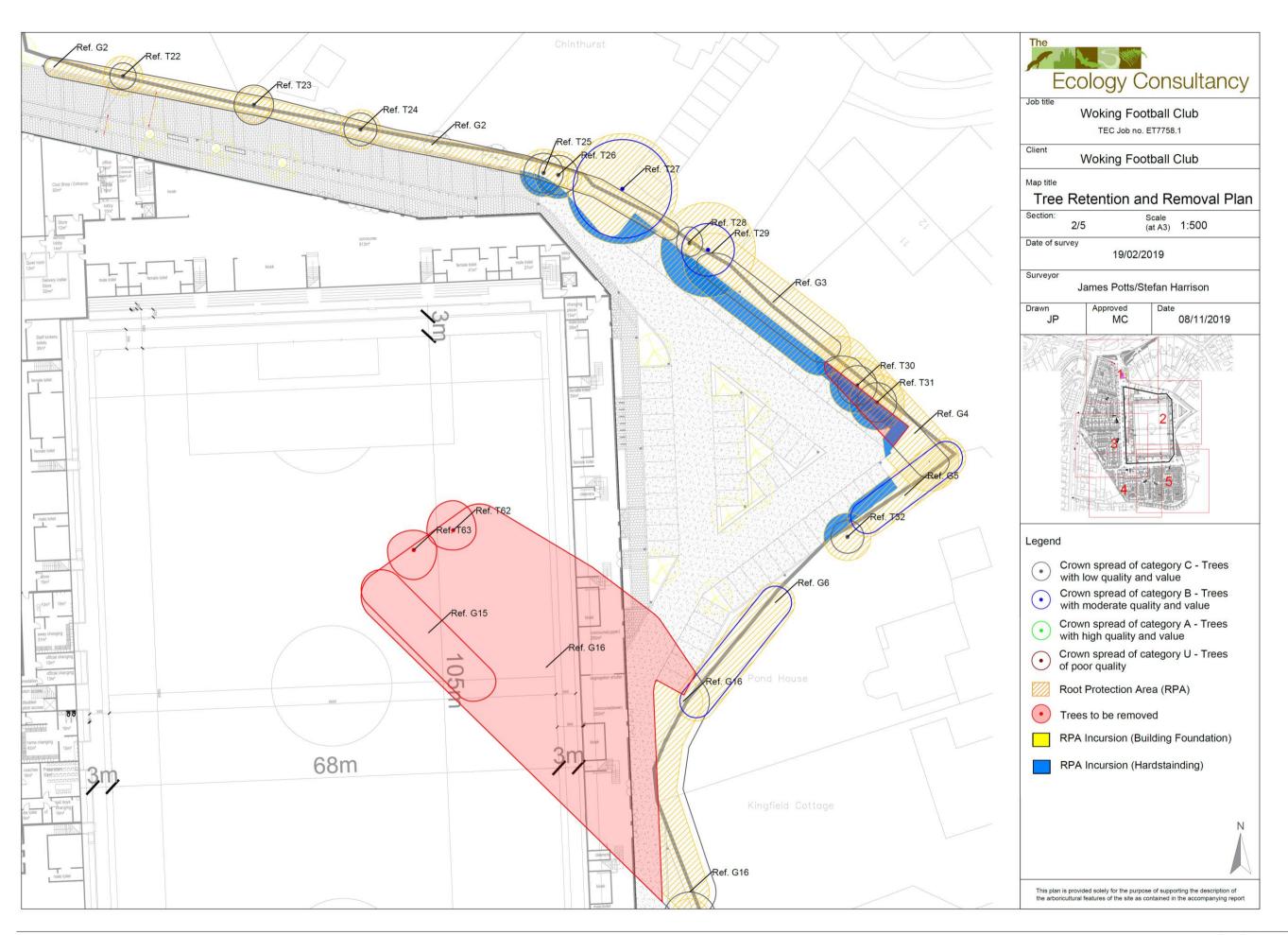


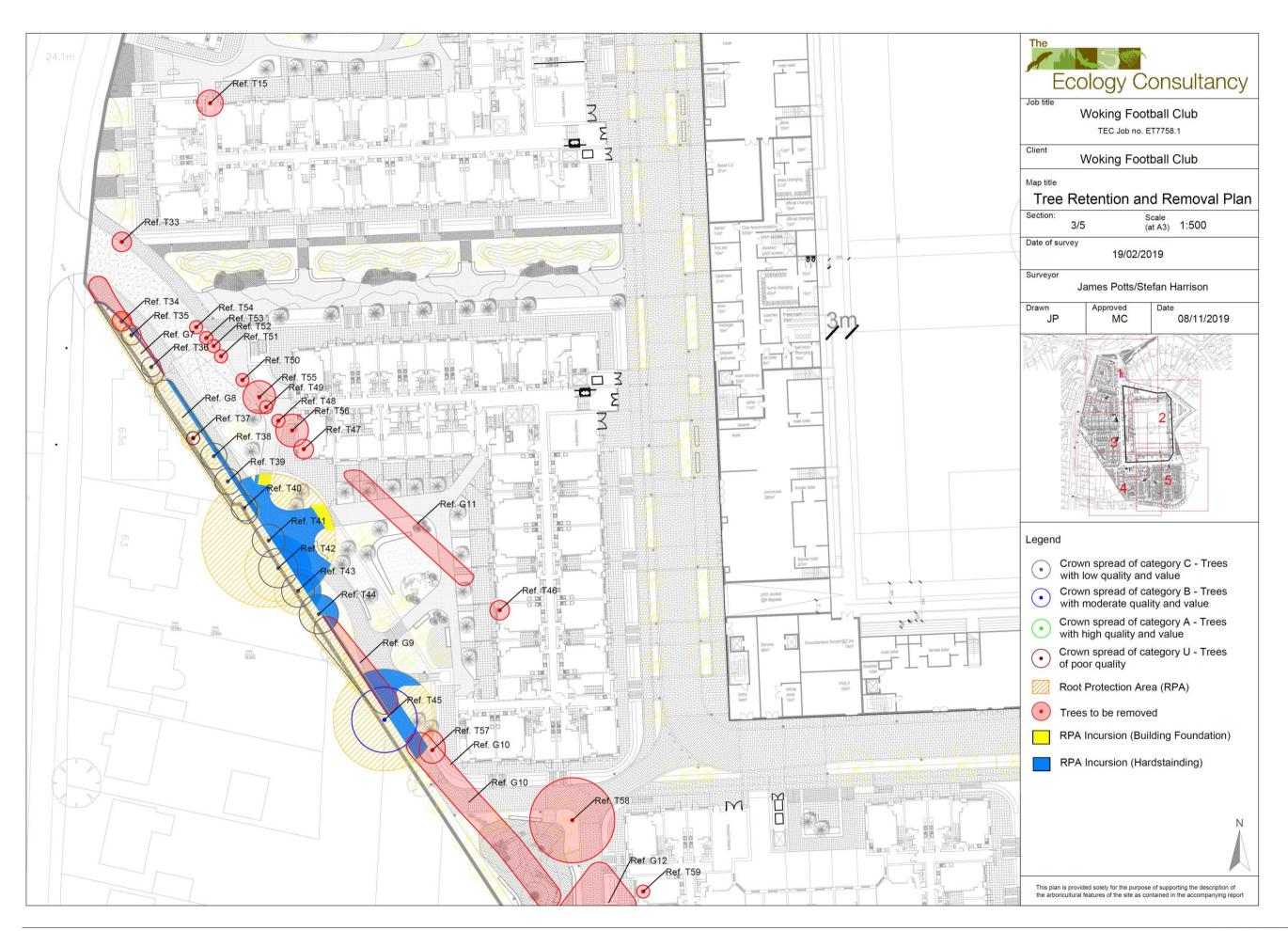


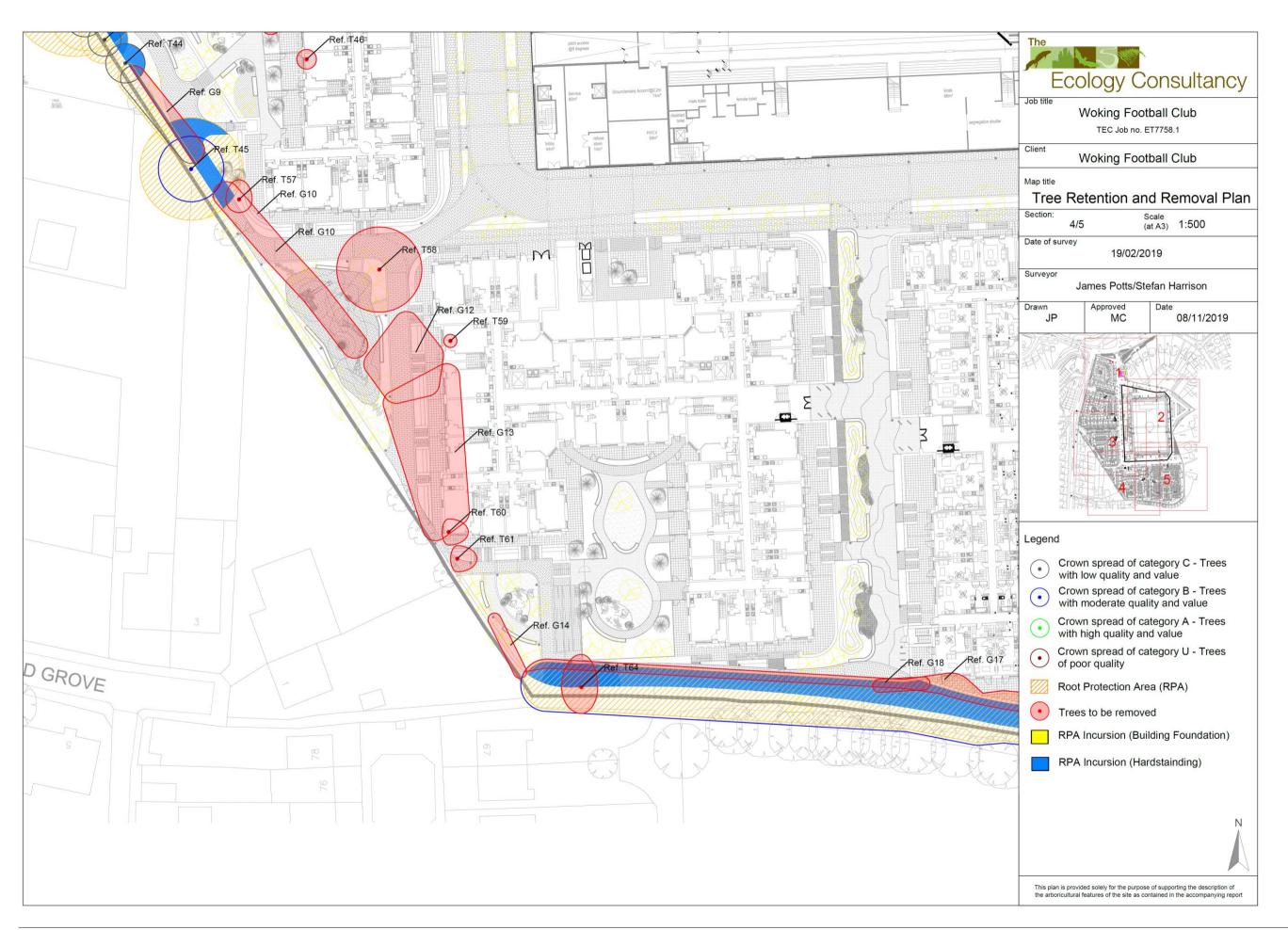


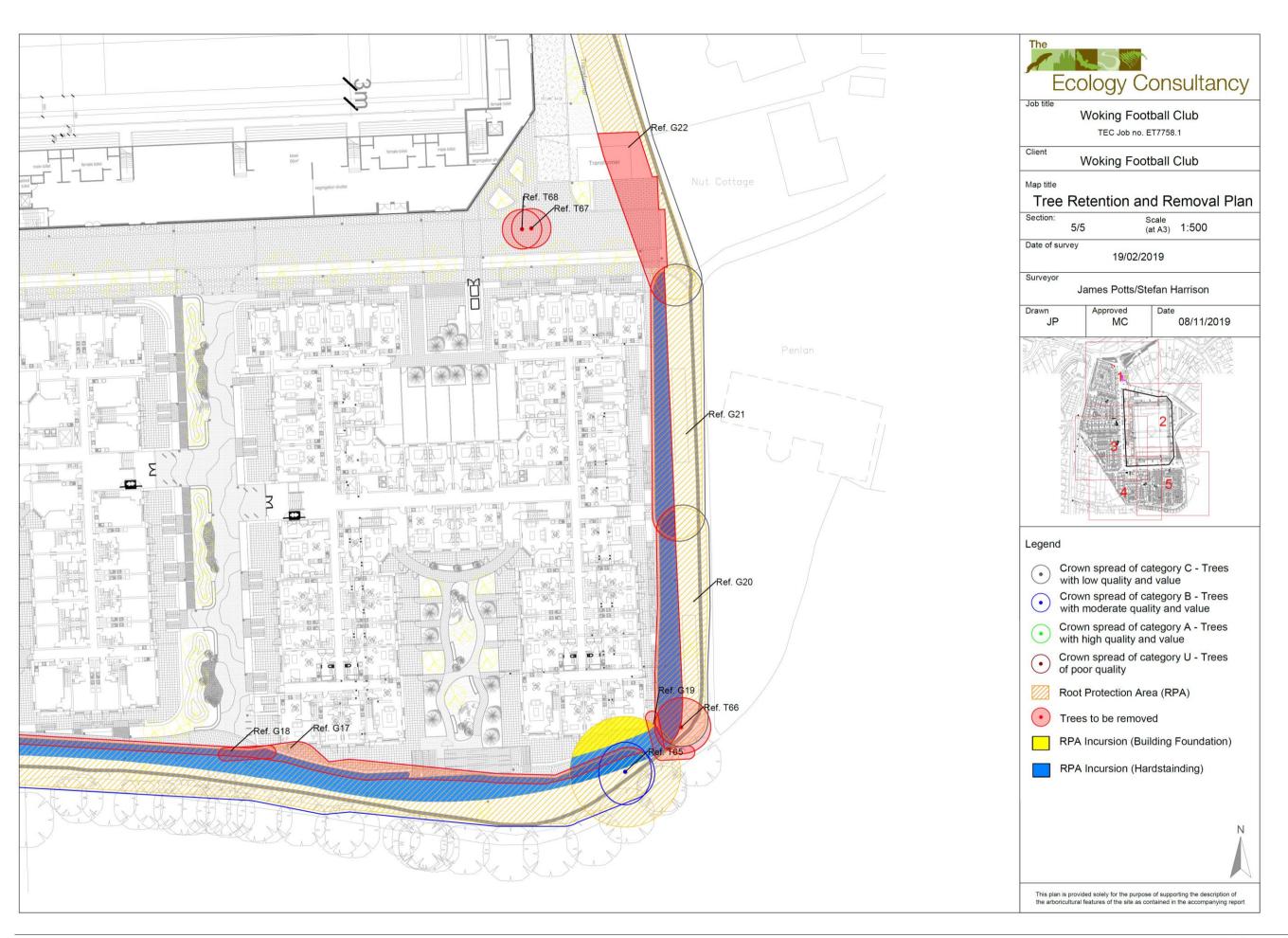












Appendix 3: Tree Retention and Removal Plan	

Appendix 4: Glossary of Terms

Glossary of Terms

Term	Explanation
Arboricultural Impact Assessment (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.
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.
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.

Glossary of Terms

Term	Explanation
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.
Target area	The area within a trees potential falling distance.
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.
Veteran tree	A tree that is of interest biologically, culturally or aesthetically because of its age, size or condition. Veteran trees are afforded special protection from development in the National Planning Policy Framework.
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 north-east towards
Norway maple T5 (front and
centre) with London plane trees T3
and T4 in the centre midground
and centre background
respectively.



Photograph 2

View looking north-east, along Woking Football Club, towards London plane T1, T2 and T3 (right to left).



Photograph 3

View looking east along group G2 with common ash T23 in the centre background.



Photograph 4

View looking south-east towards ornamental callery pear T55 and T56 (left to right) and Lawson's cypress trees T49, T48 and T47 (left to right).



Photograph 5

View of Dryad's saddle fungal fruiting bodies on the stems of crack willow T64.







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