Arboricultural Survey

Land at Old College Lawn Tennis Club 10 Gallery Road Dulwich Village London SE21 7AB

13th July 2021

PJC Consultancy

PJC ref: 5854/21/01 Rev -

This report has been prepared by

PJC Consultancy Ltd

on behalf of

Old College Lawn Tennis & Croquet Club Ltd

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1 INTRODUCTION

1.1 Instruction

1.1.1 PJC Consultancy has been instructed by Old College Lawn Tennis & Croquet Club Ltd to provide an initial arboricultural survey of trees adjacent to an existing croquet lawn at Old College Lawn Tennis Club, Gallery Road, Dulwich Village. The survey is to be undertaken in accordance with BS5837: 2012 *Trees in relation to design, demolition and construction – Recommendations* and the planning policies of Southwark Council.

1.2 Survey objectives

- 1.2.1 This survey has been undertaken with the following objectives:
 - To survey all trees within and adjacent to the site with trunk diameters of 75mm or more at a height of 1.5m.
 - To assess the quality and value of the existing tree stock in terms of arboricultural, landscape, historical/conservation, or public amenity value.
 - To provide information relating to planning constraints that may restrict works to trees at the site.
 - To provide an assessment of the material constraints posed by the existing tree stock on potential future developments at the site.
 - To aid the design process, ensuring prospective developments integrate appropriately with the existing tree stock, to maximise the potential of the proposed development site.

1.3 Contents of report

- 1.3.1 This report includes the following:
 - A summary of the existing tree stock and notable arboricultural features.
 - Tree Constraints Plan in accordance with BS5837: 2012.
 - Tree Survey Schedule containing the relevant measurements and information for each tree or tree group as required in BS5837: 2012.

1.4 Documents and information provided

- 1.4.1 The following documents were used to aid the preparation of this report:
 - Existing Site Plan drawing reference 622-SK-10-C (*Bernard Stilwell Architects, Oct 2020*).



2 SURVEY METHODOLOGY

2.1 Tree survey information

- 2.1.1 The following information was recorded in the Tree Survey Schedule for each individual tree (average dimensions are recorded for groups):
 - Tree reference number. (T=tree, G=group, H=hedgerow, W=woodland block). Tree numbers suffixed with PA on the Tree Constraints Plan indicate that the tree position is approximate.
 - Species (common and scientific name).
 - Overall tree height (m).
 - Stem diameter (mm) per stem or average diameter for multi-stemmed trees with six or more stems.
 - Branch spread (m) measured to the four cardinal points.
 - Existing height (m) above ground level of lowest significant branch and direction of growth (for individual trees only).
 - Existing height (m) above ground level of canopy.
 - Age class (young, semi mature, early mature, mature, over mature or veteran).
 - Physiological condition (good, fair, poor).
 - Structural condition (good, fair, poor).
 - Comments (general description of tree(s) including any notable features).
 - Preliminary management recommendations (prescriptions for tree management processes based on the current land use and not related to the prospective development).
 - Tree categorisation (see below).
 - Root protection area (m²).
 - Root protection radius (m).

2.2 Tree categorisation

- 2.2.1 The condition and value of each tree was evaluated based on the current land use. Each tree or tree group has been awarded either category A, B, C or U and a subcategory of either 1,2 or 3 or a combination of the subcategories.
- 2.2.2 Tree categorisation summary:
 - A Trees of good condition and high arboricultural, landscape or conservation value. Must have a potential life span in excess of forty years.
 - B Trees of moderate condition, with minor defects or sub-optimal form but are still of modest arboricultural, landscape or conservation value. Must have a potential life span in excess of twenty years.
 - C Unremarkable trees of poor condition or form with limited arboricultural, landscape or conservation value, or trees with a stem diameter under 150mm. Must have a potential life span in excess of ten years.



- U Trees of such impaired condition that they cannot realistically be retained as living trees in the context of the current land use for more than ten years. These trees do not need to be removed if they are not dangerous and do not conflict with the proposed development, but should not be considered a constraint to development.
- 2.2.3 Tree sub categorisation summary:
 - 1 Trees have mainly arboricultural value, e.g. trees of good condition, form and vitality or rare tree species.
 - 2 Trees have mainly landscape value, e.g. trees of landscape prominence, that serve to screen unsightly views or that are required for privacy. Also trees present in groups that attain higher collective rating that they would as individuals.
 - 3 Trees with mainly cultural value including conservation, e.g. commemorative trees, trees of historical significance or veteran trees.
- 2.2.4 Each tree can only be categorised as A, B or C but may comply with more than one subcategory. A cascade chart further explaining how tree categorisation is decided is included in Appendix 3.

2.3 Root protection areas

2.3.1 A root protection area represents a calculation of the minimum volume of rooting medium required to support a tree. It is a standardised calculation based on the stem diameter(s) measured at 1.5m and is not necessarily representative of the actual root spread or total rooting area of a tree. The formulas used to calculate root protection areas are shown below:

Number of stems	Root protection area formula
Single stemmed trees	(<u>stem diameter (mm) x 12</u>) ² x π 1000
Trees with two to five stems	√ (stem diameter 1) ² + (stem diameter 2) ² … + (stem diameter 5) ²
Trees with more than five stems	$\sqrt{(\text{mean stem diameter})^2}$ x number of stems

Table 1: Root protection area formulas

- 2.3.2 The root protection areas are plotted onto the Tree Constraints Plan in Appendix 1 and are recorded in the Tree Survey Schedule in Appendix 2. These are represented as a circle on the plan (unless significant rooting constraints are present), and are colour coded depending on the category the tree has been awarded. Where existing site conditions/features are present that are deemed likely to have affected the root morphology, the root protection areas have been represented as a polygon of equivalent area.
- 2.3.3 The proposed layout should avoid level changes or the placement of new buildings and areas of hard standing within the root protection areas of retained trees. In certain situations, engineered solutions are available to allow construction within



the root protection areas however further input from an arboriculturist should be sought regarding their site-specific viability before these methods are relied upon.

- 2.3.4 The disturbance of a tree's root system can result in crown dieback and even death of the tree. Roots are used to support the tree structurally as well as the absorption of moisture and nutrients from the soil. They also act as storage and transport for water and nutrients.
- 2.3.5 Direct damage such as root severance can lead to ill health, as can compaction of the soil by construction traffic, heavy plant and storage of materials. Changing the nature of the surface above the growing medium, (i.e. from porous to non-porous), can alter the resources available to the tree, which in turn can lead to its decline.
- 2.3.6 The majority of root growth is usually found within the top 600mm of soil. As such, even a shallow disturbance within a root protection area can potentially have a significant impact on the tree.
- 2.3.7 The root protection areas must be left free from excavation and disturbance, and protected from compaction or contamination during any proposed works. Any construction works within a root protection area required for the proposed development must be justifiable within an arboricultural impact assessment.

2.4 Limitations of survey

- 2.4.1 The survey methodology was restricted to a visual tree assessment from ground level. No tree climbing or invasive ground investigation was carried out for this report. Where existing site constraints are present such as ivy covered trees, a very dense under-storey, or where trees are located on third party land to which access was not granted, tree dimensions were estimated by eye as accurately as possible.
- 2.4.2 This survey represents a preliminary overview of the condition and value of trees at the site. It is not a detailed assessment of any individual tree and although preliminary management recommendations are included, this report will not be sufficient to be used as a detailed condition and safety survey.
- 2.4.3 The information and measurements in this report are representative of the date of the site visit. The tree survey data will need to be updated to reflect tree growth and changes in the condition of the trees after prolonged periods.



3 SITE VISIT AND SURVEY FINDINGS

3.1 Site visit

3.1.1 A site visit was carried out on Wednesday 7th July 2021. The weather conditions at the time were overcast but dry. Deciduous trees were in leaf. The visibility was adequate for visual tree inspection from ground level.

3.2 Site layout

- 3.2.1 The site consists of an existing croquet lawn, located within the south-east extents of the tennis club. Dense, naturally regenerated vegetation, dominated by ivy, boarders the site to the south. A dense linear group of well-maintained Leyland cypress runs along the site's eastern boundary, providing screening with adjacent residential apartments. All weather tennis courts boarder the site to the north and west.
- 3.2.2 The densely treed 'Lovers Walk' runs beyond the site's southern boundary.

3.3 Statutory tree protection

- 3.3.1 Southwark Council's online mapping tool was used on the date of this report to check whether there are any tree preservation orders (TPOs) within the site. No TPOs were shown within or immediately adjacent to the site.
- 3.3.2 However, the online mapping tool can be updated at any time, therefore any persons proposing to undertake tree works should still check the status of the trees with the local planning authority prior to undertaking any tree works. Failure to adhere to the TPO legislation could lead to prosecution and if convicted a fine and criminal record. The crown of a tree and its roots are protected. The person carrying out the works, the person instructing the works and the Directors of that company are potentially liable. Failure to check whether tree/s are the subject of TPO/s could not be used as mitigation.
- 3.3.3 The entire site falls within the Dulwich Village Conservation Area, therefore no works to trees should be carried out unless either the works are approved under a planning permission or a six week notice to the Council has been provided. Failure to adhere to the Conservation Area legislation could lead to prosecution and if convicted a fine and criminal record. The crown of a tree and its roots are protected. The person carrying out the works, the person instructing the works and the Directors of that company are potentially liable.

3.4 Findings

- 3.4.1 A total of five individual trees and three tree groups were surveyed. Their locations are shown on the Tree Constraints Plan at Appendix 1 and details and measurements are sown in the Tree Survey Schedule at Appendix 2.
- 3.4.2 A summary of their British Standard categorisation is shown at Table 2 below.

 Table 2: Tree categorisation summary

Tree category	Individual tree	Tree group
Α	_	_
В	1	-
С	4	2
U	_	1



Total	5	3
-------	---	---

- 3.4.3 The key arboricultural features of the site are:
 - European ash T4, which is located just beyond the site's southern boundary. T4 is considered of landscape importance as it contributes to the wider green corridor that runs along 'Lovers Walk' and is visible from residential properties to the east of the site.
 - Leyland cypress group G2, that runs along the site's eastern boundary. Although of limited quality as individuals, G2 provides screening between the tennis club and the adjacent residential apartments.



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Appendix 1: Tree Constraints Plan





Appendix 2: Tree Survey Schedule

				with dense ivy understorey.				0 average	₩: 2			IVY	
		1	survey.	naturally regenerated individuals			mature	Branch:	S: 2	mavimim		holly.	ΡA
1.0	2.9	C2	no remedial works	site boundary. Comprises of	Fair	Fair	Semi	0 average		80	4	hazel.	G1.
				Dense linear group running along				Crown:	2 2			European ash	
								2 average	₩: 2				
			survey.			-	mature	Branch:	S: 1		,	(Quercus robur)	PA
1.9	11.6	0	No remedial works required at time of	Young tree growing under the crown of T4. Poor crown form due to light	Fair	Fair	Semi	2 north	E: 2	160	ი	pedunculate oak	Τ5.
			-					Crown:	N: 4				
				Located beyond boundary fence.				3 average	W: 7				
			survey.	ivy throughout stem and crown.				Branch:	S: 5.5	multietem		excelsior)	
6.4	129.2	B1+2	No remedial works required at time of	arising from ground, supporting a spreading crown structure. Dense	Fair	Good	Mature	4 average	Е: 5.5	534	12	European ash <i>(Fraxinus</i>	T4
			-	Formed of 2 co-dominant stems				Crown:	N: 5.5			-	
				understorey.				2 east	∀ : 5				
			survey.	fused at multiple points. Dense ivy			mature	Branch:	ъ S	miltistem		excelsior)	
2.8	24.6	5	No remedial works		Fair	Good	Early	2 east	E: 4	233	9	European asn (<i>Fraxinus</i>	Тз
			-	Formed of 2 co-dominant stems				Crown:	V Сл				
				understory.				2 east	₩: З				
		0	survey.	Typical form for species. Dense ivy	a	- 41	mature	Branch:	S: 3		G	excelsior)	- N
2.4	18.1	2	No remedial works	supporting an upright growth habit.			Early	2 east	Щ Э	200	D	European ash	T o
				Comprised of a single stem				Crown:	N: 4.5				
				natural regeneration.				2 average	₩: З				
			decline annually.	tips. Appears to have arisen through			mature	Branch:	S: 2.5	multistem		excelsior)	PA
1.5	6.7	<u>0</u>	Monitor physiological	dieback observed throughout crown	Fair	Fair	Semi	2.5 average	E: 1.5	122	7	European asn <i>(Fraxinus</i>	T1.
				Formed of 2 co-dominant stems				Crown:	N: 3.5				
Radius (m)		grading	recommendations		condition	condition	class	(m)	Ē	(mm)	m)	-	ref.
Root Protection	Root Protection		Preliminary management	Comments		Physiological	Age	Crown clearance	Branch spread	Stem diameter	Height	Species	Tree
ncy	Consultancy							<i>W.Arbor.A</i>	oriculture h	Luke White FdSc Arboriculture M.Arbor.A	Luke Whi	Surveyor:	
	(2021	7th July 2021	Survey date:	
	7		6	irvey Schednie	iree ourvey		Gallery	Land at Uld College Lawn Lennis Club, TU Gallery Road, Dulwich Village, London. SE21 7AB.	e, London	Land at Uid College Lawn Tennis Club, TU Road, Dulwich Village, London. SE21 7AB.	Land at Road, D	Site:	
									- - -		- - - -		

Sheet 1

	Site:	Land at Road, E	Old College Ulwich Villa	e Lawn Ten ge, London	Land at Old College Lawn Tennis Club, 10 Gallery Road, Dulwich Village, London. SE21 7AB.	allery		iree ou	Thee our vey ochequie	ŀ		5	
	Survey date:	7th July 2021	2021									1	
	Surveyor:	Luke Wh	Luke White FdSc Arboriculture M.Arbor.A	boriculture I	W.Arbor.A							Consultancy	ncy
Tree ref.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)	Crown clearance (m)	Age class	Physiological Structural condition	Structural	Comments	Preliminary management recommendations	Category grading	Root Root Category Protection Protection grading Area (m ²) Radius (m)	Root Protection Radius (m)
	Levland cypress			N. 1	Crown:				Dense linear group running along site boundary. Historically planted				
PA	(Cupressocyparis	ω		ب ب	Branch:	Mature	Fair	Fair	for screening. Crowns have been	cyclical basis.	C2		
				W: 1	0 average				reduced.				
				N: 0.7	Crown:								
G3.	Monterey cypress	<u>ר</u> ת	100	E: 0.7	0 average	Maturo			Linear group. Regularly reduced to	Consider removal due	=	4.5	1.2
ΡA	(Cupi essus macrocarpa)	-		S: 0.7	Branch:	וזומנטו פ	-	-	folia dieback.	to physiological decline.	c		
			average	W- 0 7	0 average								



Appendix 3: Cascade Chart for Tree Quality Assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention				
Category U	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including	defect, such that their early loss is expected	due to collapse, including	
Those in such a condition	those that will become unviable after the removal of other category U trees (e.g. where, for whatever reason, the loss of	f other category U trees (e.g. where, for what	atever reason, the loss of	
that they cannot realistically	companion shelter cannot be mitigated by pruning).	-		
be retained as living trees in	• Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline	icant, immediate, and irreversible overall dec	cline.	Red
the context of their current	• Trees infected with pathogens of significance to the health and/or safety of	he health and/or safety of other trees nearby	other trees nearby, or very low quality trees	
land use for longer than 10	suppressing adjacent trees of better quality.			
years.	Note Category U trees can have existing or potential conservation value which it might be desirable to preserve	al conservation value which it might be desira	able to preserve.	
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for retention	ention			
Category A Trees of high quality with an	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or	Trees, groups or woodlands of particular	Trees, groups or woodlands of significant conservation historical	
estimated remaining life expectancy of at least 40 years.	formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue).	visual importance as arboricultural and/or landscape features.	value (e.g. veteran trees or woodpasture).	Green
	Trees that might be included in category A, but are downgraded because of impaired condition	Trees present in numbers, usually		
Category B	(e.g. presence of significant though remedial	growing as groups or woodlands, such		
Trees of moderate quality	defects, including unsympathetic past	that they attract a higher collective rating	Trees with material	!
life expectancy of at least 20	management and storm damage), such that they are unlikely to be suitable for retention for	than they might as individuals; or trees	conservation or other	Blue
years.	beyond 40 years; or trees lacking the special	to make little visual contribution to the		
	quality necessary to merit the category A designation.	wider locality.		
Category C				
Trees of low quality with an		Trees present in groups or woodlands,		
estimated remaining life	Unremarkable trees of very limited merit or such	but without this conferring on them	Trees with no material	
expectancy of at least 10	impaired condition that they do not qualify in	significantly greater collective landscape	conservation or other	Grey
years, or young trees with a	higher categories.	value; and/or trees offering low or only	cultural value.	
stem diameter below		temporary/transient landscape benefits.		
150mm.				

Arboricultural impact assessment, method statement and tree protection plan

Land at Old College Lawn Tennis Club 10 Gallery Road Dulwich Village London SE21 7AB

19th July 2021

PJC ref: 5854/21/02 Rev 01



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EXECUTIVE SUMMARY

PJC Consultancy has been instructed by Old College Lawn Tennis & Croquet Club to provide an arboricultural impact assessment and arboricultural method statement to support a full application at Old College Lawn Tennis Club for the construction of a new all-weather tennis court.

This report complies with the planning policies of Southwark Council and complies with the recommendations of British Standard BS5837:2012, *Trees in relation to design, demolition and construction – Recommendations.*

The survey was carried out on Wednesday 7th July 2021. The tree constraints plan and tree survey schedule can be found at Appendix 1 and Appendix 2 respectively.

The site is located with the Dulwich Village Conservation Area, therefore no works to trees should be carried out unless either the works are approved under a planning permission or a six week notice to the Council has been provided.

The key arboricultural features of the site are:

- European ash T4, which is located just beyond the site's southern boundary. T4 is considered of landscape importance as it contributes to the wider green corridor that runs along 'Lovers Walk' and is visible from residential properties to the east of the site.
- Leyland cypress group G2, that runs along the site's eastern boundary. Although of limited quality as individuals, G2 provides screening between the tennis club and the adjacent residential apartments.

The proposed layout has been overlaid with the tree constraints plan in order to identify the impacts to the trees to inform this impact assessment and this information has formed the basis of the tree retention plan (Appendix 3) and the tree protection plan (Appendix 4).

Four individual trees and two group of trees are proposed to be removed to enable the proposals. All of these trees are have been assessed as either category 'C' trees or category U, of low quality and value. The removals are required to facilitate the reduction of ground levels required to construct the new all-weather tennis court.

To mitigate the loss of trees required to facilitate construction, and to provide a continuation of vegetative screening along the site's southern boundary, new tree and shrub planting has been proposed. A total of five new specimen trees and supplementary shrub planting



has been incorporated into the proposals, to directly mitigate the loss of vegetation associated with construction.

Subject to the generic and specific tree protection measures recommended within the arboricultural method statement at section 3 of this report being adhered to, I consider that the proposals represent a minor, short term impact on the amenity of the locality in so far as it is contributed to by trees. Furthermore, as the proposed new tree and shrub planting establishes, it will progressively make a positive contribution to the quality, age and species diversity of trees in the area, the extent of local canopy cover and the amenity of the locality.



1 INTRODUCTION

1.1 Instruction

- 1.1.1 PJC Consultancy has been instructed by Old College Lawn Tennis & Croquet Club to provide an arboricultural impact assessment and arboricultural method statement to support a full application at Old College Lawn Tennis Club for the construction of a new all-weather tennis court.
- 1.1.2 This report complies with the planning policies of Southwark Council and complies with the recommendations of British Standard BS5837:2012, *Trees in relation to design, demolition and construction Recommendations* (the British Standard).

1.2 Objectives of report

- 1.2.1 This report has been undertaken with the following objectives:
 - To identify the tree removals and pruning works that will be required as a result of the proposed development and to assess the impact of the tree works.
 - To assess the potential impact the proposed construction works will have on retained trees and provide recommendations for mitigation measures to reduce the impact on the trees.
 - To provide a protection methodology for retained trees throughout the demolition and construction period, including the above ground and below ground parts of the trees as well as their rooting medium.
- 1.2.2 This report includes :
 - A tree constraints plan and tree survey schedule at Appendices 1 & 2 respectively
 - An arboricultural impact assessment at section 3. A tree retention plan at Appendix 3.
 - An arboricultural method statement at section 4 and a tree protection plan at Appendix 4.

1.3 Documents and information provided

- 1.3.1 The following documents were used to aid the preparation of this report:
 - PJC Initial Arboricultural Report Ref: 5854/21/01.
 - New Tennis Court Option 3A, Drawing Reference 622 P 02–03 Rev P2 (*Bernard Stilwell Architects, July 2021*).

1.4 Limitations of report

1.4.1 The following arboricultural impact assessment and method statement have been prepared for the proposal stated in section 1.1 and using the plans and information listed in section 1.5. The report should not be relied upon if the stated proposal or proposed design changes unless the author confirms the changes do not have a bearing on the arboricultural impacts or recommended mitigation measures.



2 ARBORICULTURAL IMPACT ASSESSMENT

2.1 Site visit

- 2.1.1 The survey was carried out on Wednesday 7th July 2021. The tree constraints plan and tree survey schedule can be found at Appendix 1 and Appendix 2 respectively.
- 2.1.2 The entire site falls within the Dulwich Village Conservation Area, therefore no works to trees should be carried out unless either the works are approved under a planning permission or a six week notice to the Council has been provided. Failure to adhere to the Conservation Area legislation could lead to prosecution and if convicted a fine and criminal record. The crown of a tree and its roots are protected. The person carrying out the works, the person instructing the works and the Directors of that company are potentially liable.
- 2.1.3 The key arboricultural features of the site are:
 - European ash T4, which is located just beyond the site's southern boundary. T4 is considered of landscape importance as it contributes to the wider green corridor that runs along 'Lovers Walk' and is visible from residential properties to the east of the site.
 - Leyland cypress group G2, that runs along the site's eastern boundary. Although of limited quality as individuals, G2 provides screening between the tennis club and the adjacent residential apartments.

2.2 The proposals

2.2.1 A new all-weather tennis court is to be constructed within the existing croquet lawn, to further extend the tennis facilities at the club. The proposed court layout has been overlaid with the tree constraints plan in order to identify the impacts to the trees to inform this impact assessment and this information has formed the basis of the tree retention plan (Appendix 3) and the tree protection plan (Appendix 4).

2.3 Tree removals

2.3.1 Trees to be removed for the proposed development are shown with dashed outlines on the tree retention plan at Appendix 3 and are shaded to indicate their BS5837 tree category. A summary is listed at Table 1 below.

Tree number	Species	Category	Justification for tree removal
T1	European ash	C1	T1 directly conflicts with the position of the new tennis court. A reduction of ground level within the rooting area of T1 will be required and significant root loss must be assumed. A new specimen tree planted on the site's southern boundary will be incorporated into the soft landscaping proposals to mitigate loss.

 Table 1: Tree removals summary



Tree number	Species	Category	Justification for tree removal
T2	European ash	C1	T2 directly conflicts with the position of the new tennis court. A reduction of ground level within the rooting area of T2 will be required and significant root loss must be assumed. A new specimen tree planted on the site's southern boundary will be incorporated into the soft landscaping proposals to mitigate loss.
тз	European ash	C1	T3 directly conflicts with the position of the new tennis court. A reduction of ground level within the rooting area of T3 will be required and significant root loss must be assumed. A new specimen tree planted on the site's southern boundary will be incorporated into the soft landscaping proposals to mitigate loss.
Τ5	Pedunculate oak	C1	T5 directly conflicts with the position of the new tennis court. A reduction of ground level within the rooting area of T5 will be required and significant root loss must be assumed. A new specimen tree planted on the site's southern boundary will be incorporated into the soft landscaping proposals to mitigate loss.
G1	Mixed	C2	A reduction of ground level within the rooting area of G1 is required, which is likely to result in a loss of roots for a number of individual trees. Due to the low quality of trees forming this group, it is not deemed practical to retain a small section. To mitigate the loss of G1, the soft landscaping scheme will incorporate shrub planting along the site's southern boundary, to provide low level future screening.
G3	Monterey cypress	U	G3 directly conflicts with the layout of the new tennis court. However, due to the poor physiological condition of G3, removal is recommended irrespective of the proposals. The loss of G3 is not viewed as a constraint to the application.

- 2.3.1 Due to the site's location within the Dulwich Village Conservation Area, all of the above trees will be protected. Therefore, no works to trees should be carried out unless either the works are approved under a planning permission or a six week notice to the Council has been provided.
- 2.3.2 Of the four individual trees and two tree groups proposed for removal, all have been awarded either a 'C' category or a 'U' category. None are considered key arboricultural features of the site. Removal of these trees will allow unhindered space around the construction area, and make way for a more suitable planting scheme to provide an attractive future boundary treatment. The category 'U' group is of low quality and of short-term potential and its removal is likely to be required irrespective of this planning application.

2.4 Mitigation planting

2.4.1 The proposals includes indicative planting locations for five new specimen trees along the sites southern boundary, along with shrub understorey planting. This



level of replanting is considered sufficient to mitigate the loss of trees directly associated with construction of the new tennis court. Additionally, new landscaping will provide a future continuation of vegetation between the site's southern boundary and Lovers Walk to the south.

2.5 Access facilitation pruning

- 2.5.1 Based on the information currently available, it is anticipated that the crowns of all remaining retained trees will be located a sufficient distance from proposed construction activities and expected construction access routes so as not to require pruning.
- 2.5.2 Any additional requirements for pruning that cannot be predicted at this stage in the design process (e.g. for contractor compound or movement of large or specialist plant machinery) shall be discussed at the pre-commencement meeting with the project arboriculturist and agreed with the local authority arboricultural officer. No works may be carried out on protected trees without prior permission from the local authority.

2.6 Ground works in proximity to tree

2.6.1 To create a level surface and construct a sufficient sub-base for the new tennis court, an unavoidable decrease in ground level is required within 8.5% of T4's rooting area. The amount of rooting medium loss is not considered of such a size as to detrimentally impact upon the tree. Provided a robust tree protection strategy is fully implemented and maintained throughout construction to prevent any further encroachment into the trees rooting area, T4 is considered feasible to retain. Arboricultural supervision and sympathetic construction measures will be adopted during all excavation that occurs within the area shaded light blue on the Tree Retention Plan in Appendix 3.

2.7 Services

- 2.7.1 Lighting columns will be installed along the eastern edge of the new court. The routing of power to these columns will occur outside the rooting area of retained trees, preferably around the northern boundary and the down the eastern boundary of the new court.
- 2.7.2 Once details of the routing power cables to the new lighting columns becomes available, prior to commencement, these shall be reviewed by the project arboriculturist. The arboriculturist shall then confirm either that no works will be carried out within root protection areas or provide details of the methodology required to ensure the works are carried out in accordance with NJUG4 '*Guidelines for the planning, installation and maintenance of utilities in proximity to trees*' and BS5837: 2012.

2.8 Landscaping in proximity to trees

- 2.8.1 The new court boundary fencing shall be constructed just within the footprint of the court, and will therefore not encroach the retained rooting area of retained trees. The specification of fencing will be galvanised powder coated tubular post with chain link netting (as per existing courts on site). This specification will not require linear trenching.
- 2.8.2 The detailed specification for soft landscaping is to be confirmed on the date of this report, however it is anticipated that tree/shrub planting and turfing will occur



within the root protection areas of retained trees. In order to protect both tree roots and the condition of the rooting medium, these works must occur sensitively as described in the arboricultural method statement.

2.9 Post development tree pressures and management

- 2.9.1 The crown of T4 slightly overhangs the new tennis court run-through area and avoids the main playing area. Seasonal nuisance is therefore considered to be minor and within acceptable maintenance parameters.
- 2.9.2 To help reduce future maintenance of soft landscaping, the final landscaping scheme must be designed in such a way as to provide sufficient space between mature crowns and the courts boundary fencing.

2.10 Conclusions

- 2.10.1 Trees requiring removal to facilitate construction of the new tennis court comprise small stature category 'C' and 'U' trees only. All significant arboricultural features will be retained and incorporated into the proposed site layout. The loss of trees as a direct result of the new courts construction will be mitigated by implementing a soft landscaping scheme along the site's southern boundary, which includes the planting of five new trees and a shrub understorey.
- 2.10.2 The proposed site layout involves excavation within the root protection areas of T4 and G2. The level of encroachment is not considered of such as size as to detrimentally impact upon the trees. However, due to their condition and amenity value, all excavation that occurs within the rooting area of retained trees shall occur under arboricultural supervision and by use of sympathetic working methodology, as prescribed within the arboricultural method statement section of this report.
- 2.10.3 Provided the exclusion zones and methodologies described in the arboricultural method statement and tree protection plan are followed, trees proposed for retention should not be adversely affected by the construction works.
- 2.10.4 Based on the above assessment, trees recommended for retention in this report can be protected during the construction period and successfully integrated into the site post development.



3 ARBORICULTURAL METHOD STATEMENT

3.1 General requirements

- 3.1.1 The arboricultural method statement and tree protection plan shall remain on site for the duration of construction and landscaping works and be available to site operatives at all times. All operatives at the site shall be briefed about tree related factors as part of their site induction.
- 3.1.2 Any variation from the methodology described in this method statement shall be discussed with the supervising arboriculturist and agreed with the local authority arboricultural officer.

3.2 Phasing of works

3.2.1 To ensure trees are protected throughout the development, the proposed development shall occur in the following order:

Works Order	Operation	Notes
1	Initial tree works.	The tree works contractor shall undertake the tree removals specified in the arboricultural impact assessment. Completion of these works will be required to enable the installation of tree protection barriers.
2	Installation of tree protection barriers.	Tree protection fencing shall be installed in the locations shown on the tree protection plan and to the specification described in this method statement.
3	Pre- commencement meeting.	The project arboriculturist shall attend a site meeting with the site manager. The local authority arboricultural officer shall be notified so they may also attend. The above pre- start arboricultural works shall be signed off by the project arboriculturist during the meeting. The meeting shall occur before any plant activity, ground works or construction activities begin.
4	Construction phase.	The tree protection barriers shall be maintained, and the construction exclusion zones observed throughout the construction phase. Excavation within the rooting area of T4 and G2 shall be undertaken sensitively as described in this method statement.
6	Soft landscaping phase.	The tree protection barriers shall be dismantled when external construction and hard landscape operations have been completed and plant machinery or excess construction materials have been removed from site. Soft landscape operations shall occur sensitively as described in this method statement.

Table 1: Phasing of works

3.3 Initial tree works

3.3.1 The tree removals specified in the arboricultural impact assessment shall be carried out as the first stage of development. Any requirements for access facilitation pruning which have not been anticipated on the date of this report shall



be discussed at the pre-commencement meeting with the project arboriculturist and be communicated to the local authority arboricultural officer.

- 3.3.2 Tree stumps and vegetation located within the root protection areas of retained trees shall be cleared with controlled hand tools (e.g. stump grinder/brush cutter). Plant machinery shall not be used to scrape vegetation, 'grub out' stumps within root protection areas, or access the site until the tree protection barriers have been installed.
- 3.3.3 Due to the frequency and proximity of trees bordering the site, no bonfires are permitted for use. All tree works arisings shall be removed from site and disposed of at a suitable licensed waste transfer centre.
- 3.3.4 Trees should be checked for protected species before works are undertaken. It is against the law to disturb bats or their roosts under the Conservation of Habitat and Species Regulations. Nesting birds are protected by the Wildlife and Countryside Act. If protected species are discovered, Natural England should be contacted for advice.
- 3.3.5 The tree works contractors should carry out all tree works to BS3998: 2010 '*Tree works recommendations*' as modified by research that is more recent. They should also carry relevant, adequate and up to date insurance.
- 3.3.6 It is suggested that an Arboricultural Association approved contractor carry out all tree works. Approved contractors are expected to work to industry best standards. The Arboricultural Association website (<u>www.trees.org.uk</u>) contains contact details and information on engaging a suitable contractor.

3.4 Tree protection barriers

- 3.4.1 The root protection areas of retained trees must be left free from disturbance, and protected from contamination or compaction during the proposed works. Protection shall comprise of tree protection fencing.
- 3.4.2 Tree protection fencing shall be installed in the locations shown on the tree protection plan. The specification for tree protection fencing shall be heavy gauge, 2m tall galvanized tube and welded mesh panels, secured to standard scaffold pole uprights and cross-members with wire ties. The uprights shall be driven into the ground until secure (minimum of 0.6m) and supported by scaffold support bars that are clamped to further scaffold uprights (refer to Appendix 5). Any variation from this specification for tree protection fencing shall be discussed with the project arboriculturist and agreed in writing with the local authority arboricultural officer.
- 3.4.3 Signs shall be affixed to the fencing as shown in Appendix 6 to explain its purpose. The signs shall be affixed at a reasonable size and frequency to ensure they are easily visible to operatives at the site.
- 3.4.4 The tree protection fencing shall be installed before any plant activity, ground works or construction activities commence at the site. They shall be maintained in situ until the soft landscaping phase of development when all other construction activities in the vicinity have been completed, and excess construction materials and plant machinery have been removed from site. Any damage that occurs to the tree protection barriers during the construction period must be rectified immediately, prior to other construction activities recommencing in the vicinity.



- 3.4.5 The areas protected by tree protection fencing (highlighted yellow on the tree protection plan) or temporary ground protection shall be referred to as the construction exclusion zone. The following restrictions shall apply within the construction exclusion zone:
 - No vehicular access shall be permitted unless on adequate temporary ground protection measures that have been agreed with the project arboriculturist.
 - Regular pedestrian access shall be restricted unless on suitable ground protection measures agreed with the project arboriculturist.
 - No storage of construction materials shall occur.
 - No storage of building spoil or construction debris (including short-term temporary stockpiling) shall occur.
 - No harmful chemicals shall be stored or handled.
 - No fires shall be permitted.
 - No mechanical excavation including regrading of levels shall occur.
 - There shall be no change in ground level unless undertaken under the supervision of the project arboriculturist.
 - No construction activities including installation of new permanent hard standing shall be undertaken unless otherwise specified in this method statement.

3.5 Storage and handling of harmful chemicals

- 3.5.1 Provision must be taken to prevent the storage and handling of harmful chemicals within the root protection areas of retained trees. Harmful chemicals include fuels, oils, bitumen, builder's sand (which has a high salt content) and cement. Provision shall also be made to prevent the storage and handling of harmful chemicals in areas proposed for further planting if the existing soil is intended to be retained.
- 3.5.2 Cement mixing shall always occur outside the construction exclusion zone. If cement mixing is to occur close to the construction exclusion zone, or there is the potential for cement washings to leech into a root protection area, adequate, bunded ground protection measures must be used. This could comprise impermeable plastic sheeting under wooden boards (to prevent tears) surrounded by a raised lip.
- 3.5.3 All other chemicals that are harmful to trees must be stowed in suitable containers and stored away from the construction exclusion zone unless adequate, bunded ground protection measures are implemented to prevent spillages leeching into root protection areas.

3.6 Contractor facilities

3.6.1 A suitable location for site cabins, contractor parking and site facilities for operatives shall be agreed with the project arboriculturist during the precommencement meeting. These facilities must be located outside the root protection areas of all retained trees unless on adequate ground protection measures that have been signed off with the project arboriculturist (potentially including existing hard standing). Provision must be taken to prevent exhaust fumes or hot air from generators or kitchen facilities from damaging foliage within the crowns of retained trees.



3.7 Excavating building footings within root protection areas

- 3.7.1 The new tennis court encroaches the root protection areas of T4 and G2 in the areas hatched orange on the tree protection plan. The excavation in this area shall occur by hand to a depth of 600mm (unless significant roots are revealed near the base of the excavation).
- 3.7.2 The presence of significant root mass and/or structural roots within the excavation area is not envisaged. However, root growth is difficult to predict and therefore all excavations within the rooting area retained trees (as highlighted orange on the tree protection plan) shall be completed under strict supervision of the project arboriculturist. Roots revealed shall be cleanly pruned using secateurs or a sharp pruning saw, to leave the smallest/cleanest feasible wound. Small clean pruning wounds require less energy from the tree to heal and reduce the chance of infection by tree pathogens. If roots are revealed and pruned, the project arboriculturist shall assess the implications of root loss and determine remedial actions where necessary. This may include a programme of root feeding to mitigate the loss of fibrous roots and/or minor crown reduction to mitigate the loss of larger structural roots.

3.8 Services

3.8.1 The detailed routing of lighting column power cables is not available on the date of this report. These must be signed off by the project arboriculturist before implementation. Wherever possible, the services must completely avoid the root protection areas of retained trees. Where this is not feasible, the arboriculturist shall provide an arboricultural method statement (to be signed off by the local authority arboricultural officer before implementation) detailing any sympathetic methodologies that are required to minimise damage to tree roots (as described in NJUG4 '*Guidelines for the planning, installation and maintenance of utilities in proximity to trees*' and BS5837: 2012).

3.9 Installing new permanent fencing within root protection areas

- 3.9.1 The new court boundary fencing shall be constructed just within the footprint of the court, and will therefore not encroach the retained rooting area of retained trees. The specification of fencing will be galvanised powder coated tubular post with chain link netting (as per existing courts on site). This specification will not require linear trenching.
- 3.9.2 Installation of permanent fencing within the root protection areas of retained trees may require access into the construction exclusion zones. Only pedestrian access will be permitted into the construction exclusion zones and scaffold board pathways shall be used in wet conditions. Ideally these works shall occur during or immediately prior to the soft landscaping phase of development when it is safe to dismantle the tree protection fencing.
- 3.9.3 Any post holes that encroach slightly into the construction exclusion zone, shall be hand excavated with care taken to avoid damaging or severing roots with a diameter greater than 25mm. Ideally the postholes shall be pre-dug to ensure significant roots can be avoided. The postholes shall be sleeved with impermeable sheeting before any concrete is added to prevent alkaline burn to retained roots. Cement mixing shall occur outside the construction exclusion zones.



3.10 Soft landscaping within root protection areas

- 3.10.1 Soft landscaping within the root protection areas of retained trees shall occur as the final phase of development, when all other construction activities in the vicinity have been completed and it is safe to dismantle the tree protection barriers. The detailed specification for soft landscaping is to be confirmed but will potentially include turfing and tree/shrub planting within root protection areas.
- 3.10.2 All planting stock, topsoil and other soft landscaping materials shall be stockpiled outside the root protection areas of retained trees. When the tree protection barriers have been dismantled, the extents of the root protection areas shall be made clear to operatives at the site by other means (e.g. ground marker paint or similar). The standard restrictions to works within the construction exclusion zone will still apply during the soft landscaping phase of development.
- 3.10.3 Where new turf or grass seed is to be laid within the root protection areas of retained trees, topsoil will likely need to be imported. The existing soil may be lightly tilled by hand but use of rotavators or plant machinery will be prohibited. A maximum increase of 100mm of topsoil may be introduced to a root protection area to avoid suffocating existing root growth. Care must be taken to prevent soil being piled against tree buttresses or buttress roots.
- 3.10.4 When soil or other materials are transported across a root protection area in wet conditions, scaffold board pathways must be used to prevent compaction of the rooting medium. It should be noted that even pedestrian traffic can compact the soil in wet conditions.
- 3.10.5 All planting pits within root protection areas shall be individually hand excavated (no trench planting). Care must be taken to avoid severing or damaging roots with a diameter greater than 25mm.

3.11 Pre-commencement arboricultural consultancy input

- 3.11.1 Prior to the commencement of works, arboricultural input will be required for the following aspects of development:
 - 1) The construction management plan review and comment where required.

2) The routing of lighting column power cables - review and comment where required.

3.12 Pre-commencement meeting

- 3.12.1 A pre-commencement meeting shall be held between the contractors and the project arboriculturist. The local authority arboricultural officer shall be given reasonable notice of the pre-commencement meeting so they may also attend. The purpose of the pre-commencement meeting shall be:
 - 1. To clarify the tree protection methodology with the site manager.
 - 2. To explain the implications of unauthorised works to trees within a conservation area.
 - 3. To discuss the chronology and phasing of the project with the site manager.
 - 4. To sign off that the pre-commencement tree works have been completed as specified in the arboricultural impact assessment, and to



discuss any requirements for any further pruning which had not been anticipated prior to the meeting.

- To sign off that the tree protection fencing and ground protection have been installed in the correct locations and to the agreed specification. To agree revised locations subject to the phasing of the development.
- 6. To discuss arboricultural supervision requirements.
- 7. To agree with the local authority arboricultural officer the type and timings of arboricultural monitoring necessary.
- 3.12.2 Following this meeting, if the local authority arboricultural officer has not been able to attend, an email outlining the actions discussed will be sent to the tree officer for approval. If necessary, a revised tree protection plan and method statement will be issued for approval.

3.13 Arboricultural supervision

- 3.13.1 The project arboriculturist shall supervise:
 - all excavation within the root protection areas of trees as shown as orange the tree protection plan.

3.14 Arboricultural monitoring

3.14.1 The site manager shall provide a monthly update to the project arboriculturist including photographic evidence that the tree protection barriers are intact and that the construction exclusion zones have been observed.

3.15 Process if an unforeseen issue relating to trees arises

- 3.15.1 If significant root growth is disturbed during construction activities that are not within the scope of this report, the work shall cease until the project arboriculturist has been consulted. Roots greater than 25mm in diameter or dense/matted fibrous roots shall be considered significant root growth. It should be remembered that whilst root protection areas are part of industry best practice, tree root growth is influenced by a number of factors and may not conform to expected ideals.
- 3.15.2 If at any time during the construction process, damage is inadvertently caused to a tree, the project arboriculturist shall be notified to assess the likely implications and to prescribe potential remedial measures to be implemented. Damage can be in the form of chemical or fuel spillage, mechanical damage to either the above ground parts of the tree or the roots, fire or any other unforeseen circumstance.
- 3.15.3 The supervising arboriculturist shall be appointed by the contractor. It will be necessary for the arboriculturist to report to the local planning authority on the outcome of the site visits as well as any unforeseen tree related issues.



	Contact details
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	Date: 19 th July 2021
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Appendix 1: Tree Constraints Plan





Appendix 2: Tree Survey Schedule

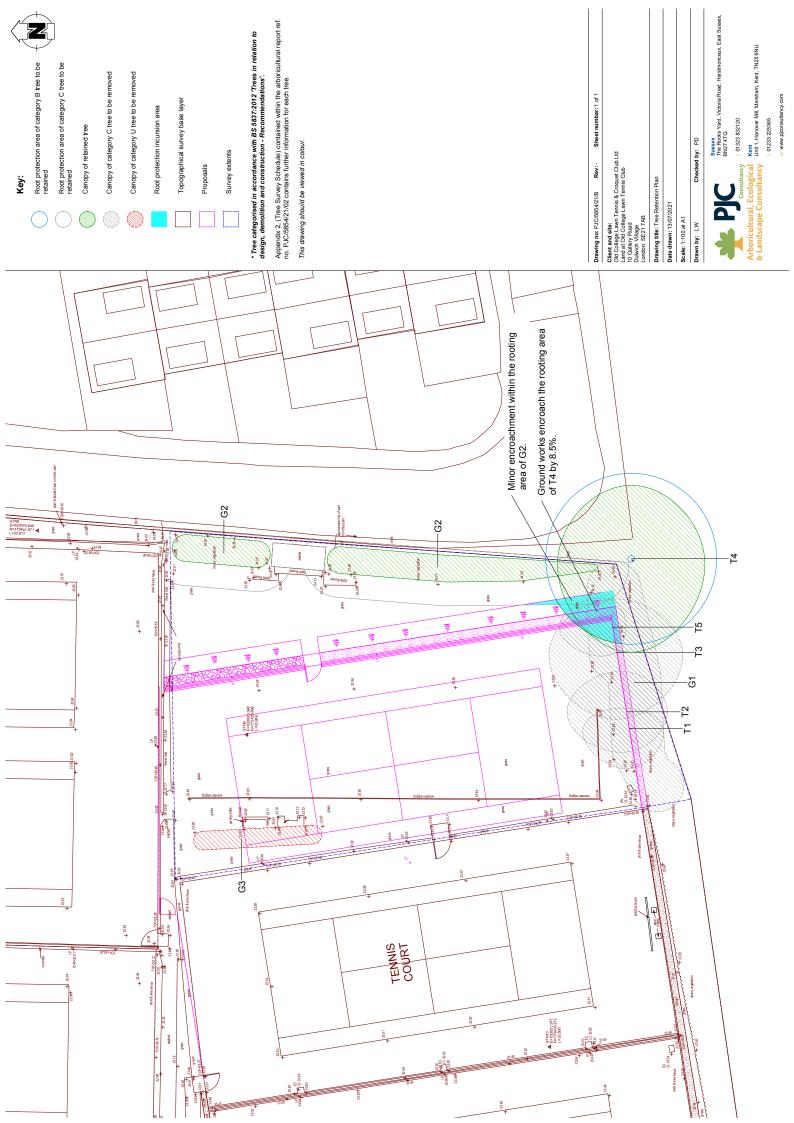
				•	2								
				with dense ivy understorey.				0 average	₩: 2			IVY	
		C I	court construction.	naturally regenerated individuals	- 2	- 2 =	mature	Branch:	S: S		-	holly.	ΡA
1.0	2.9	ŝ	Remove to facilitate	site boundary. Comprises of	F ar	Fair	Semi	0 average	E: 2	80	4	hazel.	G1.
				Dense linear group running along				Crown:	2 2			European ash	
								2 average	W: 2				
			court construction.				mature	Branch:	S: 1			(Quercus robur)	PA
1.9	11.6	<u>0</u>	Remove to facilitate	Young tree growing under the crown of T4. Poor crown form due to liaht	Fair	Fair	Semi	2 north		160	თ	pedunculate oak	Τ5.
				- - -				Crown:	N: 4				
				Located beyond boundary fence.				3 average	W: 7				
			throughout construction.					Branch:	S: 5.5	miltistem		excelsior)	
6.4	129.2	B1+2	Retain and protect	arising trom ground, supporting a spreading crown structure. Dense	Fair	Good	Mature	4 average	E: 5.5	534	12	European asn <i>(Fraxinus</i>	T4
				Formed of 2 co-dominant stems				Crown:	N: 5.5				
				understorey.				2 east	W: 5				
			court construction.	Tused at multiple points. Dense ivy			mature	Branch:	с S	multistem		excelsior)	
2.8	24.6	õ	Remove to facilitate		Fair	Good	Early	2 east	E: 4	233	9	european asn (<i>Fraxinus</i>	T3
				Formed of 2 co-dominant stems				Crown:	С V			1	
				understory.				2 east	W: 3				
			court construction.	Typical form for species. Dense ivy	2	- 2 =	mature	Branch:	S: S		c	excelsior)	- r
2.4	18.1	2	Remove to facilitate	supporting an upright growth habit.			Early	2 east	 Ω	200	D	European ash	T 3
				Comprised of a single stem				Crown:	N: 4.5				
				natural regeneration.				2 average	W: З	Industant			
			court construction.	tips. Appears to have arisen through	-	- 2 =	mature	Branch:	S: 2.5	multistem		excelsior)	PA
1.5	6.7	3	Remove to facilitate	dieback observed throughout grown	F a¦r	Fair	Semi	2.5 average	E: 1.5	122	7	European ash (Fraximus	T1.
				Formed of 2 co-dominant stems				Crown:	N: 3.5				
Radius (m)	Area (m²)	grading	recommendations		condition	condition	class	(m)	<u>)</u>	(mm)	Ð	+	ref.
Root Protection	Root Protection	Category	Preliminary	Comments	Structural	Physiological	Age	Crown	Branch spread	Stem diameter	Height	Species	Tree
incy	Consultancy							1.Arbor.A	oriculture N	Luke White FdSc Arboriculture M.Arbor.A	Luke Whi	Surveyor:	
	(Arboricultural Impact Assessment	rboricultura	Ð				2021	7th July 2021	Survey date:	
	5		6	irvey ochedule	in ee ourvey		Gallery	Road, Dulwich Village, London. SE21 7AB.	e, London.	Road, Dulwich Village, London. SE21 7AB.	Road, D	Site:	
					Trop CI		Gallery	nie Club 10	Lawn Ten				

Sheet 1

	Site:	Land at Road, C	Old College ulwich Villag	e Lawn Ten ge, London	Land at Old College Lawn Tennis Club, 10 Gallery Road, Dulwich Village, London. SE21 7AB.	àallery		Tree Su	Tree Survey Schedule			5	
	Survey date:	7th July 2021	2021				Ą	boricultura	Arboricultural Impact Assessment			(
	Surveyor:	Luke Wh	Luke White FdSc Arboriculture M.Arbor.A	boriculture i	M.Arbor.A							Consultancy	ncy
Tree ref.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)	Crown clearance (m)	Age class	Physiological Structural condition	Structural condition	Comments	Preliminary management recommendations	Category grading	Root Root Protection Protection Area (m ²) Radius (m)	Root Protection Radius (m)
G2.	Leyland cypress (Cupressocyparis	ω	230		Crown: 0 average	Mature	Fair	Fair	Dense linear group running along site boundary. Historically planted for screening. Crowns have been	Retain and protect	C2	24.0	2.8
РР Р	leylandiil)			∑ S: 1 1	Branch: 0 average				topped at 2m and regularly reduced.	throughout construction.			
				N: 0.7	Crown:								
G3.	Monterey cypress	<u>א</u> ת	100	E: 0.7	0 average	Maturo				Remove to facilitate	=	4.5	1.2
ΡA	(Cupiesus macrocarpa)	-		S: 0.7	Branch:	וזומנטו פ	-	- -	folia dieback.	court construction.	C		
			avelage										

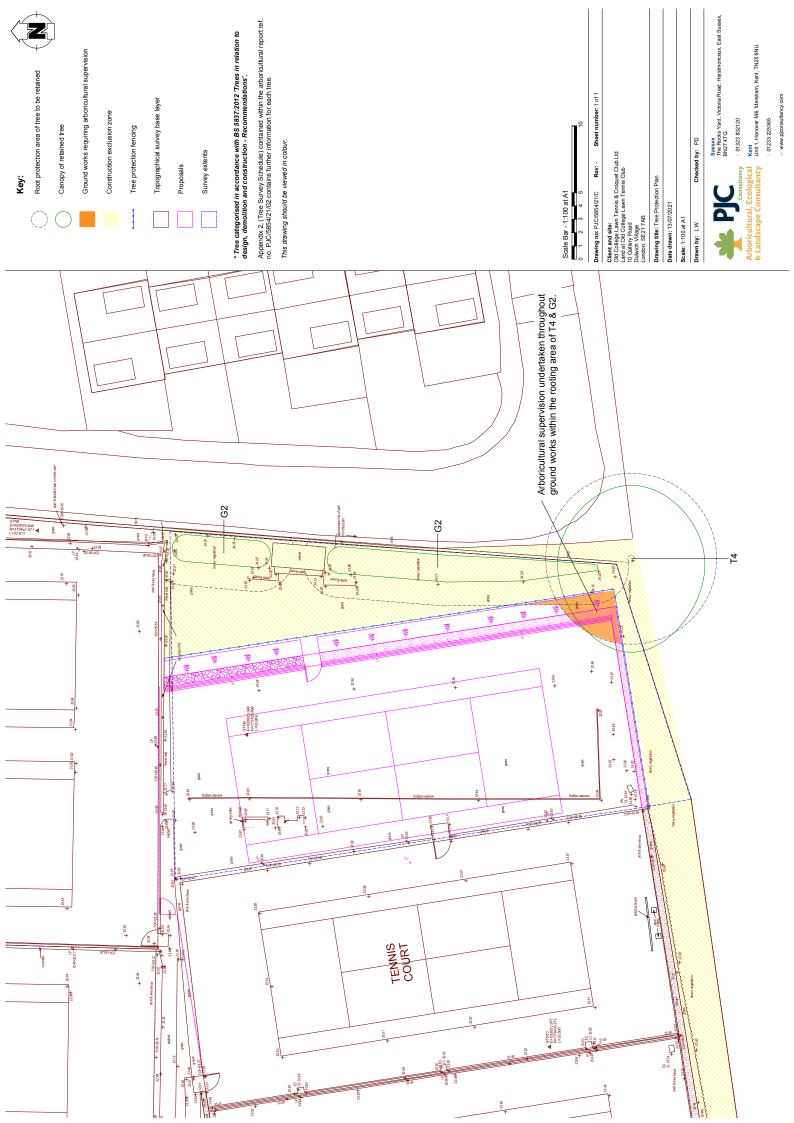


Appendix 3: Tree Retention Plan

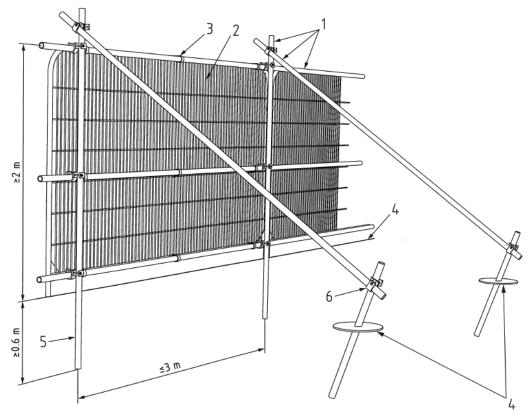




Appendix 4: Tree Protection Plan







Appendix 5: Tree Protection Fencing Specification

Кеу

- 1 Standard scaffold poles
- 2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
- 3 Panels secured to uprights and cross-members with wire ties
- 4 Ground level
- 5 Uprights driven into the ground until secure (minimum depth 0.6 m)
- 6 Standard scaffold clamps



Appendix 6: Example Protective Fencing Sign

