



Development Report

On behalf of Mr J Culley

4/5/22

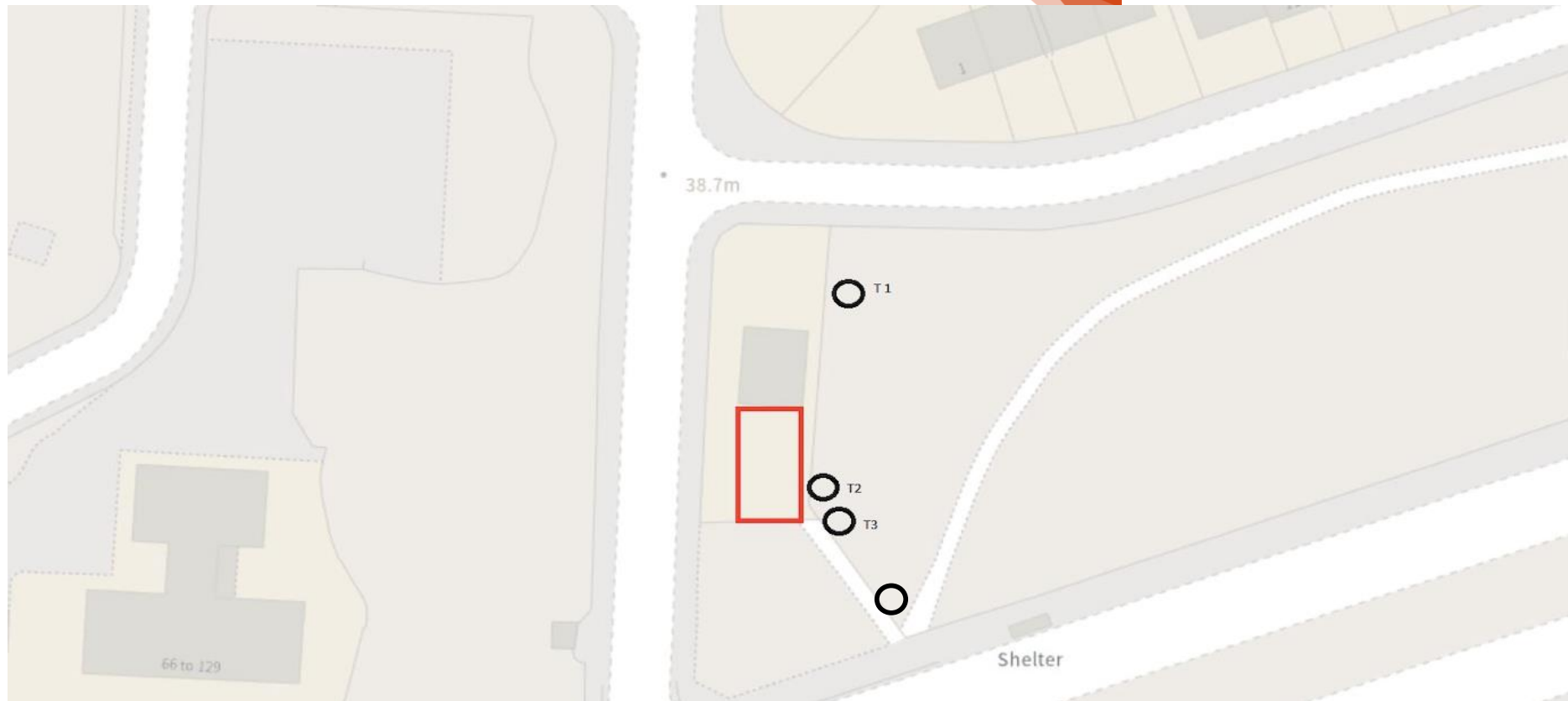
Author: Paul Kurs

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Executive Summary

The proposed development is for a 2-storey side extension for use as a sports wellbeing studio. All the trees on site, as well as those trees immediately adjacent to the site, were inspected to BS5837:2012 standards, in order to assess their potential constraints to the proposed development. The constraints identified as a result of the tree inspection were subsequently discussed with the project architect. The following report details the findings and results of the Arboricultural Impact Assessment (AIA). Potential constraints were identified in relation to a number of trees. If the mitigation measures outlined in the AIA, to protect retained tree/trees, are adhered to throughout the project, it is considered that no adverse impact to the local amenity trees or habitat is anticipated.

Paul Kurs Cert.Arb, FdSc Arboriculture, (TechArborA).



Map 1 Footprint of proposed development and location of relevant tree/trees.

(Black Circle) Identified trees on or near to proposed site (Red Rectangle) Footprint of proposed extension

1. Background

1.1 PK Environment was commissioned by Mr Culley to conduct a tree survey and Arboricultural Impact Assessment (AIA) at Primrose Road, Liverpool. Mr Culley required a new application from the Local Planning Authority (LPA) to carry out a proposed extension development. An overview of trees on site and proposed plan layout is shown above in Map.1 Tree Protection Plan (page 4).

2. Aims and Objectives

2.1 The purpose of the survey is to provide an objective assessment of the trees on site and their relationship to the proposed development. The report focuses on providing an assessment of all trees both on and adjacent to the development site adhering to the guidelines set out in *BS5837:2012 'Trees in Relation to Design, Construction and Demolition – Recommendations'*. All trees have on this basis been given a tree retention categorisation: A, B, C, or U. Advice will be forwarded on tree management, removal and retention at all stages in the design stage.

3. Scope and limitations

3.1 PK Environment Ltd undertook a survey of all trees on, and adjacent to, the site on 9/06/2022; the survey was undertaken by a competent and qualified arboriculturist. All trees were inspected from ground level, without aerial inspection. The use of decay detection equipment was not applicable. Inspection was carried out using the methodology outlined in *BS5837:2012 'Trees in Relation to Design, Development and Demolition – Recommendations'*.

3.2 Weather conditions; 12c on site with a light westerly wind direction and good visibility.

3.3 The nature of the soils on site were not tested on the survey. Soils local to the site are described as “free draining, slightly acid sandy soils (Soilscapes, 2020).

3.4 Categories (A, B, C & U) were attributed to trees individually on site in accordance with *BS5837:2012 Trees in Relation to Design, Development and Demolition – Recommendations* and are displayed in table 1 below.

Table 1. Tree Quality Assessment

Table 1 – Tree Quality Categories			
A	B	C	U
	T4	T1, T2, T3	

3.5 Further information on the categorisation methodology is detailed in Table 4, Appendix 2.

4. Site Description

5. Statutory Protection and Planning Policy

5.1 Local authorities, when dealing with planning applications need to consider the potential impact of proposed developments on tree populations, when protected with a Tree Preservation Order (TPO) or included in a Conservation Area (British Standards, 2012, p.1). No trees on site are subject to a TPO or located within the boundary of any detailed conservation area and were therefore not subject to the conditions of the regulations set out in the Town & Country Planning Act (TCPA). Further information can be found in the link below.

<https://www.legislation.gov.uk/uksi/2012/605/contents/made>

5.2 When assessing a planning application, the local authority must consider the potential for the proposed development to have a detrimental impact upon protected species and their habitats. Mature trees often contain cavities which have the potential to provide breeding habitat for birds, as well as providing potential roosting habitat for bat species.

Any person found to injure or kill a wild bird, to interfere with or destroy a breeding nest site will be guilty of an offence (Wildlife & Countryside Act 1981, section 1; p.1). All works to trees and hedges should be scheduled outside of the breeding bird season (February to August). In reality this can start earlier than this and indeed finish later (Arboriculture Association, 2015).

If nesting birds are located the works scheduled should be delayed until the nest is inactive (Wildlife & Countryside Act, 1981).

5.3 All bat species and their breeding/roosting sites are protected by law and are a European Protected Species. Causing damage or disturbance to a bat roost is an offence (Conservation of Species and Habitats Regulations 2017). Tree 15; could warrant further investigation if works were scheduled to it. The potential for further investigation would be determined by the project ecologist once informed.

Table 2. below show potential bat roost features T.15.

Tree Survey Reference	Potential Bat Feature
NA	NA

6. Tree Constraints Plan *CAD drawing TO BE attached in appendix 1 as map 2*

6.1 Map 2 attached in appendix 1, shows the tree constraints plan. This illustrates the position of 3 trees, 2 of which are adjacent to the proposed siting of the extension. The canopy spread is displayed as is the Root Protection Area (RPA). The RPA is initially calculated as a circle radiating from the stem base at 12 x the diameter of stem taken at a height of 1.5m above ground level. Pre-existing site conditions can result in the shape of the RPA requiring modification. Underground structures, topography, drainage and soil type/structure shall be taken into account when calculating offset position of RPA (British Standards, 2012). Where a new hard surface is to be constructed a “no dig” construction method should be employed. This is used to reduce soil compaction in the rooting zone.

6.2 Canopy shape, density and spread can inform the planning proposals above ground. Density of foliage can affect the level of light, propensity to drop honeydew or fruits and branches being notable constraints (British Standards, 2012).

7. Arboricultural Impact Assessment (AIA)

The tree protection plan and proposed development are shown on (Map 1, page 4). After surveying all trees on and adjacent to site the resulting analysis is set out in table 3, below.

Table 3. Summary of trees affected by proposed development

Impact	Reason	Tree number
Trees removed	0	na
RPA affected trees retained	1	T2
Trees to be retained & pruned to allow for development	Accommodating the development plan	T2 & T3
Trees requiring no work	Have little or no impact on the site or the proposed development	T1 & T4

Details of individual works

- **T1:** No works
- **T2:** a self-set, multi-stemmed sycamore would not be retained. The canopy extends onto and over the existing property boundary. The stem is off vertical at 20 degrees and the remaining canopy is overshadowed within the canopy of the adjacent companion sycamore. All works to undertaken to BS3998:2010.
- **T3:** Crown lift to 3m over footpath.
- **T4:** Crown lift to 3m over footpath.

9. General recommendations

9.1 Generally, the tree stock on site are of good to moderate quality. Located mainly on the periphery of the site, 2 of 4 trees will have little effect on the site plans.

The retained trees will add some maturity to the proposed site and amenity value, whilst enhancing the living space.

9.2 Once fencing and/or root protection zones are in position to protect retained trees, they should not be altered or displaced without correspondence with the arboricultural officer.

9.3 Trees being living dynamic structures can change and whilst in good condition at the time of survey, can suffer damage and stresses throughout the active construction/demolition period. It is therefore recommended a frequent inspection is agreed with the site manager both during and after site works begin (British Standards, 2012, 6.3).

Arboricultural Method Statement

Author	Paul Kurs
Date/Duration	TBA for approximately 20 weeks. 1 day's tree work.
Order of Works	1. Site walkover: Site manager and arboriculturist. 2. Risk assessments and safety brief 3. Access facilitation pruning works (NA) 4. Retained tree arboricultural works 5. Protective fencing and RPA protection installation. 6. Inspection prior to site active
Vehicles and Plant on site <i>All tools and equipment should be fit for purpose, clearly marked and in good working condition in line the Provision and Use of Work Equipment Regulations 1998 (PUWER)</i>	1. Mewp (Platform lift) Ascendant 17m self-drive truck with mounted platform 3.5 tonnes (NA) 2. VW Crafter 3.5 tonne tipper vehicle x2 3. Towed, Timberwolf 230 sub 750kg chipper
Tools and Equipment <i>All tools and equipment should be fit for purpose, clearly marked and in good working condition in line the Provision and Use of Work Equipment Regulations 1998 (PUWER)</i>	1. Stihl MS261C med saw 18' bar x2 2. Stihl MS201TC Top handle chainsaws x2 3. Stihl MS660 Large chainsaw (NA) 4. 5L Husqvarna Petrol and oil non-drip dispenser. 5. 2X Individual tree climbing kits Kit example: Petzl Sequoia Tree Climbing Harness. Marlow Venom Rope 11.8mm climbing rope. Petzl 3-way lock carabiner x5

	Teufelberger Ocean Polyester prussic loop 8mm Marlow split tail 1.5m Teufelberger adjustable 5m lanyard 6. Medium Lowering kit. Teufelberger 14mm Bull Rope (SWL 700kg) ISC Port-a-wrap (SWL 750kg) 2x Steel screw-gate carabiners DMM Impact Pulley blocks x2 (SWL 400KG) Marlow 1.1-3.6m whoopie sling 65.6kn breaking strain. Tree Hog Rigging sling 1Ton x 3m 7. Wolf Garten 5m pole saws x2 8. Silky saws x3 (hand saws) 9. Petrol and oil should be properly containerised and stored in a controlled manner in a locked petrol safe as is stated in (Control of Substances Hazardous to Health Regulations 2002) COSHH
<i>Protective fencing and root protection engineering:</i>	1. Protective barriers are to be installed around the RPAs of trees; T1 & T3. The design of the barriers is illustrated in appendix 3 “generic protective barrier” this design is outlined within (British Standards 2012). 2. Ground protection for existing root areas within the working zone should be installed prior to commencement of any construction/demolition work on site. Specifications for root protection are outlined in (British Standards 2012, section 6.2.2.2).

Works below ground and utilities:

1. Construction or demolition works within the RPA should be avoided allowing the soil structure to maintain its suitable bulk density for optimum root development (British Standards, 2012. 7.1.1).
2. Cutler & Richardson state, tree roots can be damaging to nearby buildings and 3 specific situations must be taken into account:
 - Where buildings are erected close to existing trees
 - Where new trees are planted near to new buildings
 - Where trees are removed from a clay site to enable new construction
3. Consideration of points 1 & 2 above would help to inform the project arboriculturist and design team to ascertain the potential damage to the tree roots and or buildings if work within the RPA is unavoidable.
4. Utility installation within the RPA should be proven to be achievable and undertaken (as a minimum) within the guidelines set out in NJUG Volume 4, issue 2 (N1).
5. Works within the RPAs if unavoidable, it should be demonstrated that utility installation can be achievable through trenchless technology, where entry and

	retrieval pits are formed outside of the (RPAs British Standards, 2012, 7.1.3). 6. Unavoidable excavations within the RPA should be undertaken carefully using hand tools brushes or compressed air displacement (British Standards 2012, 7.2.1)
<i>Above ground works:</i> <i>Arboricultural Works as defined in BS3998:2010</i> <i>Recommendations for Tree Work</i>	1. Tree works to retained trees will take 1 day, commencing TBA. 2. Prior to protective fencing installation all works to retained trees can be carried out. Vehicles should be parked away from RPAs' zones. 3. All flammable and materials which have potential to contaminate should be stored away from RPAs (British Standards, 6.2.4.3). In addition, a safe working distance should be maintained wherever possible and clearly signed. 4. All pruning works to retained trees shall be carried to standards outlined within <i>BS3998:2010 Recommendations for Tree Work</i>. The use of MEWPs or climbing on rope and harness for tree works should be carried out using best practice guidelines set out in Working at Height Regulations 2005 and AFAG-401 Tree Climbing Operations by fully trained and certified arborists.

<i>Further Guidance</i>	Further guidance and legislation can be found in the link below; http://streetworks.org.uk/wp-content/uploads/V4-Trees-Issue-2-16-11-2007.pdf

Appendix 1

Tree Constraints Plan - Map 2

CAD DRAWING SHOWING RPAs Architect to add as below example (not as detailed as shown here)



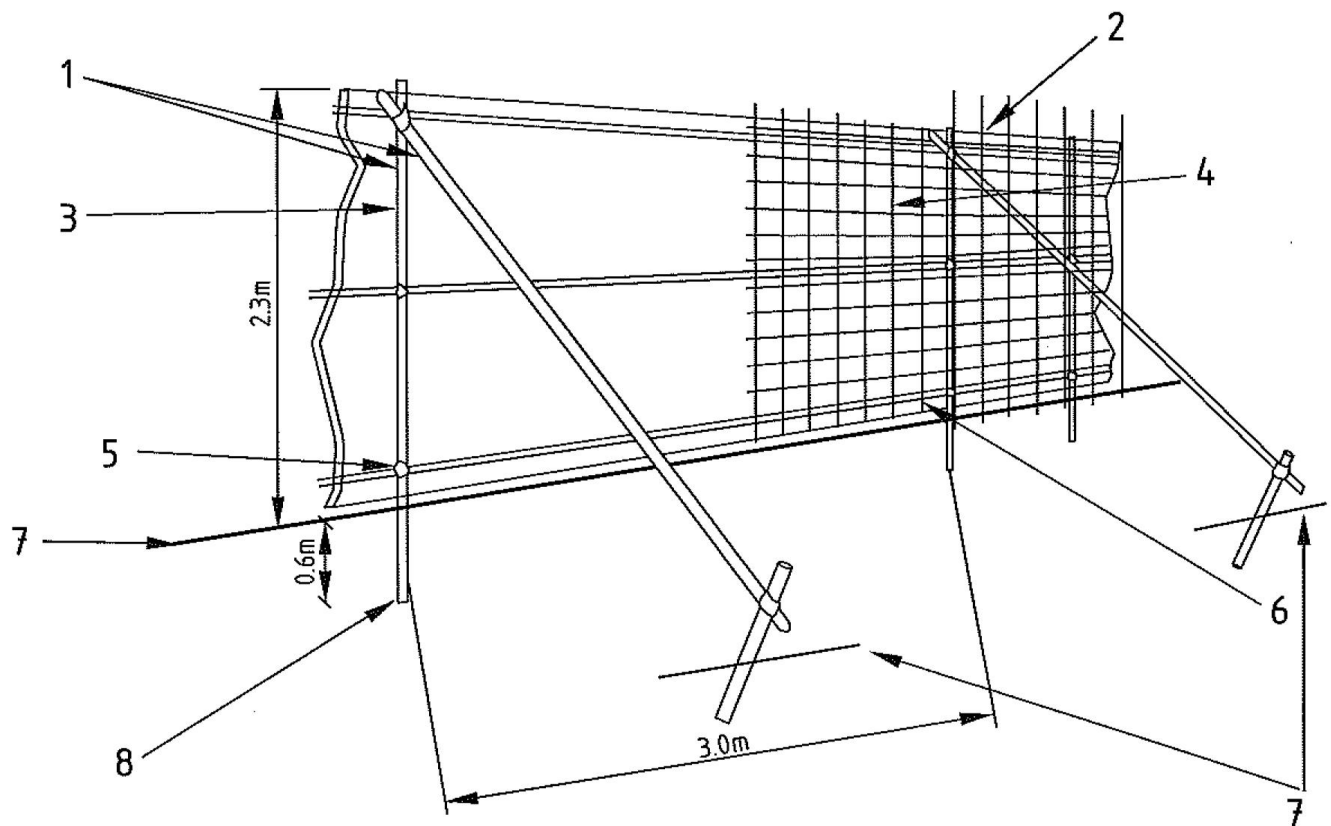
Appendix 2

Table 4 below from *BS5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations*.

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. 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, and irreversible overall decline - Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i>			See Table 2
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	See Table 2
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 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

Appendix 3: Generic protective barrier



- | | |
|--|--|
| 1 Standard scaffold poles | 5 Standard clamps |
| 2 Uprights to be driven into the ground | 6 Wire twisted and secured on inside face of fencing to avoid easy dismantling |
| 3 Panels secured to uprights with wire ties and where necessary standard scaffold clamps | 7 Ground level |
| 4 Weldmesh wired to the uprights and horizontals | 8 Approx. 0.6 m driven into the ground |

Figure 2 — Protective barrier

Fig 2 above shows an example of the protective fencing which will be installed at this site from *BS 5837:2012 Trees in Relation to Design, Demolition and Construction - Recommendations*

Appendix 4

Trees survey & categorisation to *BS5837:2012 Trees in Relation to Design Demolitions and Construction - Recommendations*

TREE No	Species	Height in metres	Age	Crown Spread in metres	DBH @ 1.5m	Root Protection Area	BS5837; category	Identified Arboricultural Works
T1	<i>Populus nigra 'italica' (m)</i>	10m	mature	8m	500mm	6000mm	C	No work identified.
T2	<i>Acer pseudoplatanus</i>	5.5m	semi-mature	5m	360mm	4320mm	C	Remove tree and replant new tree (possible memorial tree) at desired location.
T3	<i>Acer pseudoplatanus</i>	6m	Semi-mature	7m	Multi-stemmed 660mm	7920mm	C	Crown lift 3m, statutory height regulations over footpath.
T4	<i>Acer pseudoplatanus</i>	10m	mature	9	430mm	5160mm	B	No work required.

