

Arboricultural Impact Assessment

For proposed development at:

7 Brooklyn Avenue, Loughton, IG10 1BL

Prepared by: Date:

Oisin Kelly, Arboricultural Consultant 29th April 2021

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T: 07570 977449 Project Ref: 720

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1 INTRODUCTION

1.1 Instructions

- 1.1.1 I am instructed to prepare an Arboricultural Impact Assessment to form part of a planning application for proposed development at 7 Brooklyn Avenue, Loughton, IG10 1BL.
- 1.1.2 I have been provided with the following information in preparation of this report:
 - Topographical survey of Randalls Surveys LLP
 - Proposed Block Plan of Ten Ten
- 1.1.3 A professional profile outlining my qualifications and experience is contained at APPENDIX 1.

1.2 The Site & Proposal

- 1.2.1 The application site comprises the curtilage of 7 Brooklyn Avenue, Loughton, IG10 1BL. The site is situated on the corner of Brooklyn Avenue and Priory Road. Trees around the northern boundary of the plot contribute to the local street scene and provide privacy and a sense of enclosure for the plot.
- 1.2.2 The site is not within a Conservation Area and none of the trees are protected by a Tree Preservation Order.
- 1.2.3 It is proposed to renovate the existing property, sub-divide the plot and construct a new dwelling in the northern division.

1.3 The Tree Survey

- 1.3.1 I visited the site on 07/04/2021. Unless otherwise stated all observations were made from ground level and tree dimensions were measured. The survey was to assess trees in relation to proposed development and should not be relied upon as a tree safety survey.
- 1.3.2 Data from the survey is contained in the Tree Survey Schedule at APPENDIX 2. The Tree Survey Plan at APPENDIX 3 shows the location of the trees in relation to the existing site layout and their quality, as categorised in accordance with "Trees in relation to design, demolition and construction Recommendations" (BS:5837:2012). The categorisation is intended to assist in determining which trees should be removed or retained in the event of development. BS5837 is a standard reference document used by local planning authorities and the Planning Inspectorate when considering trees in the development context.
- 1.3.3 The categories are summarised as follows:
 - Category U: trees not worthy of retention because of their condition
 - Category A: trees of high quality
 - Category B: trees of moderate quality
 - Category C: trees of low quality

1.3.4 The numbers of trees, groups and hedges surveyed by category are detailed in Table 1 below.

	Trees	Groups	Shrubs	TOTALS
Category U	4	0	ı	4
Category A	0	0	-	0
Category B	3	0	-	3
Category C	6	1	-	7
n/a	0	0	4	4
TOTALS	13	1	4	18

1.4 Photographs from the tree survey

Photo 1. View from Brooklyn Avenue of eastern boundary.



Photo 3. View from Priory Road of western boundary.



Photo 5. View from site looking into northern corner of plot.



Photo 2. View from Brooklyn Avenue of northern corner of plot.



Photo 4. View from site of western boundary with Priory Road.



Photo 6. View site looking at eastern boundary with Brooklyn Avenue.



2 Impact Assessment

2.1 Drawings

- 2.1.1 The Tree Constraints Plan at APPENDIX 4 shows the trees in relation to the proposed site layout, along with the following information:
 - Trees proposed for removal or retention
 - Root Protection Areas (RPAs) a layout design tool indicating the minimum area around
 a tree deemed to contain sufficient roots and rooting volume to maintain the tree's
 viability, and where the protection of the roots and soil structure is treated as a priority;
 - The approximate daily shadow trace through the main part of the day, based on current height, and where a significant growth potential exists, the potential mature height; and,
 - Target notes in relation to the development proposals and arboricultural constraints.

2.2 Trees to be removed

- 2.2.1 The development proposals will necessarily result in the removal of purple-leafed plum T1, ash T2, privet S3, hawthorn T4, hornbeam T13, laburnum G14, laburnum T15, horse chestnut T16 and purple-leafed plum T17. In addition, removal of yew T5, holly S7, and laburnum T10 is proposed to ensure there is a suitable garden area for the new dwelling.
- 2.2.2 Regardless of the development: ash T2 and horse chestnut T16 would likely be removed in the medium term because they would quickly outgrow their location in a small residential garden; laburnum T15 is in a poor condition with a short remaining lifespan (less than 10 years); and elder T18 is dead.

2.3 Trees to be retained

- 2.3.1 The proposed development retains trees around the northern corner of the site, that are most visible in the street scene. Pruning of laburnum T6 and purple-leafed plum T11 is proposed in order to maximise the garden area not directly beneath tree crowns. Because the trees are situated to the north, shadows will be cast away from the site.
- 2.3.2 The new dwelling extends into the RPA of purple plum T11, occupying around 9% of its RPA. Allowing for foundation trenches to extend around 150mm beyond the building footprint this increases to 10% of the RPA. At its closest point, the foundation trench will be around 3.9m from the stem centre of T11. Given this separation distance and subject to appropriate protection measures during development there is no real prospect that the works will result in the instability of the tree. The tree is approaching senescence and is likely to be sensitive to changes in its soil environment. However, the proportion of RPA affected is modest and there is a good prospect that the tree will not be significantly harmed by construction. On balance, the applicant wishes to retain the tree as part of the development.

2.4 Protection of trees to be retained

- 2.4.1 The foundation trench within the RPA of T11 should be excavated manually up to 45mm depth, and roots pruned. Compared to ripped or torn roots, pruned roots have smaller wound surface areas and generate a greater density of root initials for subsequent growth.
- 2.4.2 In other respects the trees to be retained can be protected during construction by suitable protective fencing and ground protection.
- 2.4.3 A suitable scheme of tree protection is recommended in the next section of this report.

2.5 The relationship between the trees to be retained and the development

2.5.1 The trees to be retained are prominent in and contribute to the street scene at the junction of Priory Road and Brooklyn Avenue. They provide screening of the site and a sense of enclosure. Because they are situated at the northern edge of the site, shadows are cast away from the dwelling and garden areas. Pruning is recommended to reduce the extent that the tree crowns overhang the garden area, and periodic pruning may be required to maintain this benefit: but this is not onerous or unreasonable in the context of the site.

2.6 Mitigation and Compensation

- 2.6.1 Four new trees are proposed, as shown on the Tree Protection Plan at APPENDIX 5. These should be of relatively small stature, and ideally produce nectar in order to provide greatest value to local wildlife. Suggested species are:
 - Juneberry, aka serviceberry or snowy mesipil (Amelenchier 'Robin Hill')
 - White mulberry (*Morus alba*)
 - Japanese rowan (Sorbus commixta 'Olympic Flame' or 'Embley')

2.7 Summary of Impact Assessment

- 2.7.1 The development will result in the removal of:
 - Category U: 4 trees
 - Category A: 0 trees
 - Category B: 2 trees
 - Category C: 4 trees, 1 group
 - and 2 shrubs (uncategorised)
- 2.7.2 The proposed development retains trees around the northern corner of the site, that are most visible in the street scene. Pruning is recommended for two trees in order to maximise the garden area not directly beneath tree crowns.
- 2.7.3 There is some risk to the health of purple-leafed plum T11 but on balance there are good prospects it can be successfully retained. Where the foundation trench extends into the RPA of T11, manual excavation and root pruning s recommended. In other respects the trees to be

retained can be protected during construction by suitable protective fencing and ground protection.

- 2.7.4 Four new trees are proposed. Suggested species are:
 - Juneberry, aka serviceberry or snowy mesipil (Amelenchier 'Robin Hill')
 - White mulberry (*Morus alba*)
 - Japanese rowan (Sorbus commixta 'Olympic Flame' or 'Embley')

3 METHOD STATEMENTS

3.1 Arboricultural Site Supervision

- 3.1.1 An Arboricultural Clerk of Works (ACoW) shall be appointed to oversee protection of trees during the development.
- 3.1.2 The ACoW shall attend site:
 - Prior to commencement of demolition to brief the demolition contractor on tree protection requirements and ensure tree protective fencing and ground protection is in place.
 - Periodically during construction, and specifically during excavations within the RPAs of trees to be retained.
- 3.1.3 Following each attendance to site the ACoW shall produce a written record of the site inspection (a 'Site Inspection Report'), detailing the status of tree protection measures that are in place, with supporting photographs.
- 3.1.4 The Site Inspection Report shall be issued to the Tree Officer, by email, within 5 working days of the site visit to which it relates. In the event that the Tree Officer raises concerns regarding tree protection issues, the ACoW shall seek to resolve issues to the satisfaction of the Tree Officer and the applicant.

3.2 Enabling Tree Works

3.2.1 The tree works detailed in the Schedule at APPENDIX 2 shall be undertaken as part of the development.

3.3 Tree Protective Fencing

- 3.3.1 Prior to the commencement the development, Tree Protective Fencing shall be erected in accordance with the layout shown on the Tree Protection Plan at APPENDIX 5.
- 3.3.2 Tree Protective Fencing shall be fit for the purpose of excluding construction activity taking into account the type, intensity and proximity of work taking place around the retained trees. Fencing shall be maintained to ensure that it remains rigid and complete. Notices stating "Tree Protection Area No Access" shall be affixed to the fencing. A suitable specification is shown at APPENDIX 6.

3.4 Ground Protection

- 3.4.1 Ground protection shall be installed in accordance with the layout shown on the Tree Protection Plan at APPENDIX 5.
- 3.4.2 Ground protection shall be fit for the purpose of preventing compaction or contamination of the Root Protection Area taking into account the type, intensity and proximity of work taking

place around the retained trees. An example of a suitable proprietary form of ground protection is included at APPENDIX 7.

3.5 Site Facilities

3.5.1 All site huts, parking, delivery and storage areas, welfare facilities, cement/plaster mixing areas etc., should be sited outside of the RPAs of trees to be retained.

3.6 Foundations within the RPA of trees to be retained

- 3.6.1 Within the RPAs of trees, excavations for foundations shall be carried out under the watching brief of the Arboricultural Clerk of Works. The edge of the excavation closest to the tree shall be excavated manually up to 450mm depth. Any roots encountered shall be cut cleanly back to the face of the excavation using clean, sharp, pruning tools.
- 3.6.2 For health and safety reasons, below 450mm depth excavations may be undertaken mechanically, providing that machinery shall be restricted to operating from either:
 - outside of the RPAs of trees to be retained; or
 - from existing hard surfaces that provide an effective from of ground protection; or
 - from newly installed ground protection that is to the satisfaction of the Arboricultural Clerk of Works
- 3.6.3 Excavation shall proceed in small incremental layers. Where roots are encountered that in the opinion of the Arboricultural Clerk of Works are considered to be of significance, where safe and practicable to do so, they shall be cut cleanly back to the face of the excavation using clean, sharp, pruning tools.

3.7 Services

- 3.7.1 Where practicable, underground utility services such as mains water, power, telecoms, surface and foul drainage etc., should be located outside of the RPAs of trees to be retained.
- 3.7.2 Where underground utility services are to pass through the RPAs of trees to be retained, they should be laid out and installed in accordance with "Volume 4: NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Issue 2)" (NJUG, 2007, www.njug.org.uk/publication/51/).

4 CONCLUSIONS

- 4.1.1 The application site comprises the curtilage of 7 Brooklyn Avenue, Loughton, IG10 1BL. The site is situated on the corner of Brooklyn Avenue and Priory Road. Trees around the northern boundary of the plot contribute to the local street scene and provide privacy and a sense of enclosure for the plot. The site is not within a Conservation Area and none of the trees are protected by a Tree Preservation Order.
- 4.1.2 It is proposed to renovate the existing property, sub-divide the plot and construct a new dwelling in the northern division.
- 4.1.3 A survey was carried out of the trees potentially affected by the development. The trees were categorised for their quality / value in accordance with "Trees in relation to design, demolition and construction Recommendations" BS5837:2012, as summarised in the table below:

	Trees	Groups	Shrubs	TOTALS
Category U	4	0	-	4
Category A	0	0	-	0
Category B	3	0	-	3
Category C	6	1	-	7
n/a	0	0	4	4
TOTALS	13	1	4	18

- 4.1.4 The development will result in the removal of:
 - Category U: 4 trees
 - Category A: 0 trees
 - Category B: 2 trees
 - Category C: 4 trees, 1 group
 - and 2 shrubs (uncategorised)
- 4.1.5 The proposed development retains trees around the northern corner of the site, that are most visible in the street scene. Pruning is recommended for two trees in order to maximise the garden area not directly beneath tree crowns.
- 4.1.6 There is some risk to the health of purple-leafed plum T11 but on balance there are good prospects it can be successfully retained. Where the foundation trench extends into the RPA of T11, manual excavation and root pruning s recommended. In other respects the trees to be retained can be protected during construction by suitable protective fencing and ground protection.
- 4.1.7 Four new trees are proposed. Suggested species are:
 - Juneberry, aka serviceberry or snowy mesipil (Amelenchier 'Robin Hill')
 - White mulberry (*Morus alba*)
 - Japanese rowan (Sorbus commixta 'Olympic Flame' or 'Embley')
- -- END --

APPENDIX 1 Professional Profile for Oisin Kelly

PROFESSIONAL PROFILE FOR OISIN KELLY

Oisin is an Arboricultural Consultant with 29 years' experience across planning, subsidence, tree-risk management, aviation and utility sectors. He acts as an Expert Witness in relation to planning appeals, tree-related subsidence, tree-related property damage and personal injury, and alleged contraventions of tree preservation orders and felling licenses. Oisin has appeared in Magistrates Court, County Court and High Court (including the Technology and Construction Court). He has provided written representations on planning appeals and has appeared at Hearings. He also provides arboricultural services to planners, developers, local authorities, architects and their agents.

ACADEMIC QUALIFICATIONS

BSc Forestry (hons)
Diploma in Management Studies

MEMBERSHIPS

Member of the Arboricultural Association Member of the Academy of Experts Associate Member of the Institute of Chartered Foresters

EXAMPLE Projects

BPT Limited v Patterson & Patterson [2016] Central London County Court (TCC)
Brown v Harlow Council [2011] Central London County Court
Lovett, Newman and Barton v Epping Forest District Council [2011] Harlow Magistrates Court
Berent v Family Mosaic Housing [2011] EWHC 1353 (TCC)
Lamb & Lamb v Hampshire County Council [2010] Central London County Court
Loftus-Brigham v Ealing LBC [2003] EWCA Civ 1490,
Eiles v Southwark LBC [2006] EWHC 1411 (TCC)

University of Essex: Tree risk management and arboricultural consultancy at their Colchester, Loughton and Southend Campuses, which contain around 3000 individual trees, and many more in groups and woodlands, of which around 100 are veteran trees. Design of Tree Management Database.

Lawford House is a development of 10 residential units within a parkland setting containing veteran trees. The initial Arboricultural Survey identified the relevant constraints allowing appropriate impact avoidance and mitigation to be 'designed-in'. The consultation phase included representations on a new and existing TPO, which were subsequently revoked and a new TPO re-made in accordance with Oisin's recommendations.

Bolingbroke Park is a major development of 231 residential units and involved detailed consultation with planners at pre-application, application and during construction. Other inputs included Arboricultural Impact Assessments, Arboricultural Method Statements, Veteran Tree Management Plans and appointment as the Arboricultural Clerk of Works.

Bell School Development Site is a residential development of 270 dwellings, comprising houses and apartments, including affordable housing and 100-bed student living accommodation for the Bell Language School. The site is in the Southern Fringe Growth Area of Cambridge. I supported the scheme from design through to planning consent, including consultation meetings with the local planning authority.

Support of various Councils in the redevelopment and infill development of sites on the Housing Revenue Account for affordable housing, including surveys, reports, preliminary advice and public consultations.

CAREER HISTORY

Arborterra Ltd

2019 to	Co-owner,	Expert Witness and Arboricultural Consultant providing clients with advice
present	Arboricultural	relating to trees and development, tree preservation, tree risk management
	Consultant	and tree-related subsidence damage.

Self-employed Sole Trader

2015 –	Arboricultural	Expert Witness and Arboricultural Consultant providing clients with advice
2019	Consultant	relating to trees and development, tree preservation, tree risk management
		and tree-related subsidence damage.

Landscape Planning Group Limited

Principal	Arboricultural Consultant. To line manage and lead the Planning Team of									
Consultant	Arboriculturists, Ecologists and Landscape Architects to meet sales and									
	revenue targets. To manage projects within agreed deadlines, making									
	maximum use of potential revenue opportunities, whilst maintaining client									
	satisfaction.									
Principal	Arboricultural Consultant. As above for delivery of Tree Risk Management									
Consultant	Services.									
Regional	Regional Manager of Colchester Officer providing Arboriculture, Ecology and									
Manager	Landscape Services across planning, local government and risk management									
	sectors. Arboricultural Consultant									
Director of	To provide a focus for commercial innovation in technical skills, system									
Technical	evolution, equipment, software, hardware and R&D. Arboricultural									
Services	Consultant									
Head of	Main client contact and technical authority for provision of tree-related									
Insurance of	subsidence services to loss adjusters, engineers and insurers across the UK.									
Services	Line Management of Arboricultural Consulting Staff and administrative									
	support. Arboricultural Consultant									
Consulting	Fee earner specialising in tree-related subsidence.									
Arboriculturalist										
	Principal Consultant Regional Manager Director of Technical Services Head of Insurance of Services Consulting									

London Borough of Hounslow

1994 -	Senior	Team leader with responsibility for budgetary control and staff. Maintaining
1997	Arboricultural	Council owned trees. Providing arboricultural advice to the Planning
	Officer	Department in respect of development control, enforcement and tree
		preservation

London Borough of Redbridge

1991 -	Assistant	Maintaining Council owned trees. Providing arboricultural advice to the
1994	Arboricultural	Planning Department in respect of development control and tree
	Officer	preservation

APPENDIX 2 Tree Survey Schedule

Survey By: Oisin Kelly Survey Date: 07/04/2021

Tree Survey at 7 Brooklyn Avenue, Loughton



Tree No.	Species	Stem Diam @ 1.5m (mm)	Height (m)	Crown Spread				Age Range	Physiological Condition	First main branch	Crown Clearance	Comments	Recommendations	Remaining contribution (Yrs)	Amenity	RPA Radius	RPA Area
		8		N	S	Е	W		ъ.	Firs	Cro			cor			
T1	Purple leaf plum	130 x1	3.5	2	2	2	2	SM	F			Past light crown reduction.	Fell for development	20+	C1	1.6	7.6
T2	Ash	70 x1	3	1.5	1	1.5	1	SM	Р			Topped. Inappropriate species for small residential garden.	Fell for development	40+	U	8.0	2.2
S3	Privet	80 x3	4.5	1.5	1.5	1	1.5	FM	F			From topped larger stem to 170mm diameter.	Fell for development	10+	X	1.7	8.7
T4	Hawthorn	120 x1 90 x2	3	1.5	1.5	1.5	1	EM	F			Topped at 2.5m	Fell for development	40+	C2	2.1	13.8
T5	Yew	270 x1	9	3	2	3	3	EM	G				Fell for development	40+	B1	3.2	33
Т6	Laburnum	210 x1 150 x1	6	3	4	3	2	MA	F			Smaller stem forms entire south side of crown: could be removed.	Remove smaller stem extending south.	10+	C2	3.1	30.1
S7	Holly	20 x4	2	1	1	1	1	YO	G				Fell for development	40+	Χ	0.5	0.7
Т8	Crab apple	210 x1 180 x1 160 x1	7.5	4.5	1.5	1.5	3	MA	F			Crossing limb extending west, causing abrasion damage to larger, upright stem.	Remove crossing stem.	20+	B1	3.8	46.2
S9	Privet	70 x1	4.5	3	1.5	2	2	MA	F			Topped, Multiple epicormic shoots from base.		10+	Х	0.8	2.2
T10	Laburnum	110 x1	4.25	1.5	3	0.5	2	EM	F			Shaded. Bark death in patches on main stem.	Fell for development	10+	C1	1.3	5.5
T11	Purple leaf plum	500 x1*	8	3.5	3.5	3.5	3.5	FM	F			Privet growing around base. Ivy over stem. Unable to view clearly or measure stem. Topped at 6m. Trees of this species and size tend to have short remaining lifespan. When they decline, they do so rapidly.	Reduce lateral spread of SW side of crown by 1.5m.	10+	C3	6	113
S12	Privet	70 x1*	2.5	2	2	1.5	1.5	EM	F					10+	Χ	0.8	2.2

^{*} Denotes estimated dimension

Survey By: Oisin Kelly Survey Date: 07/04/2021

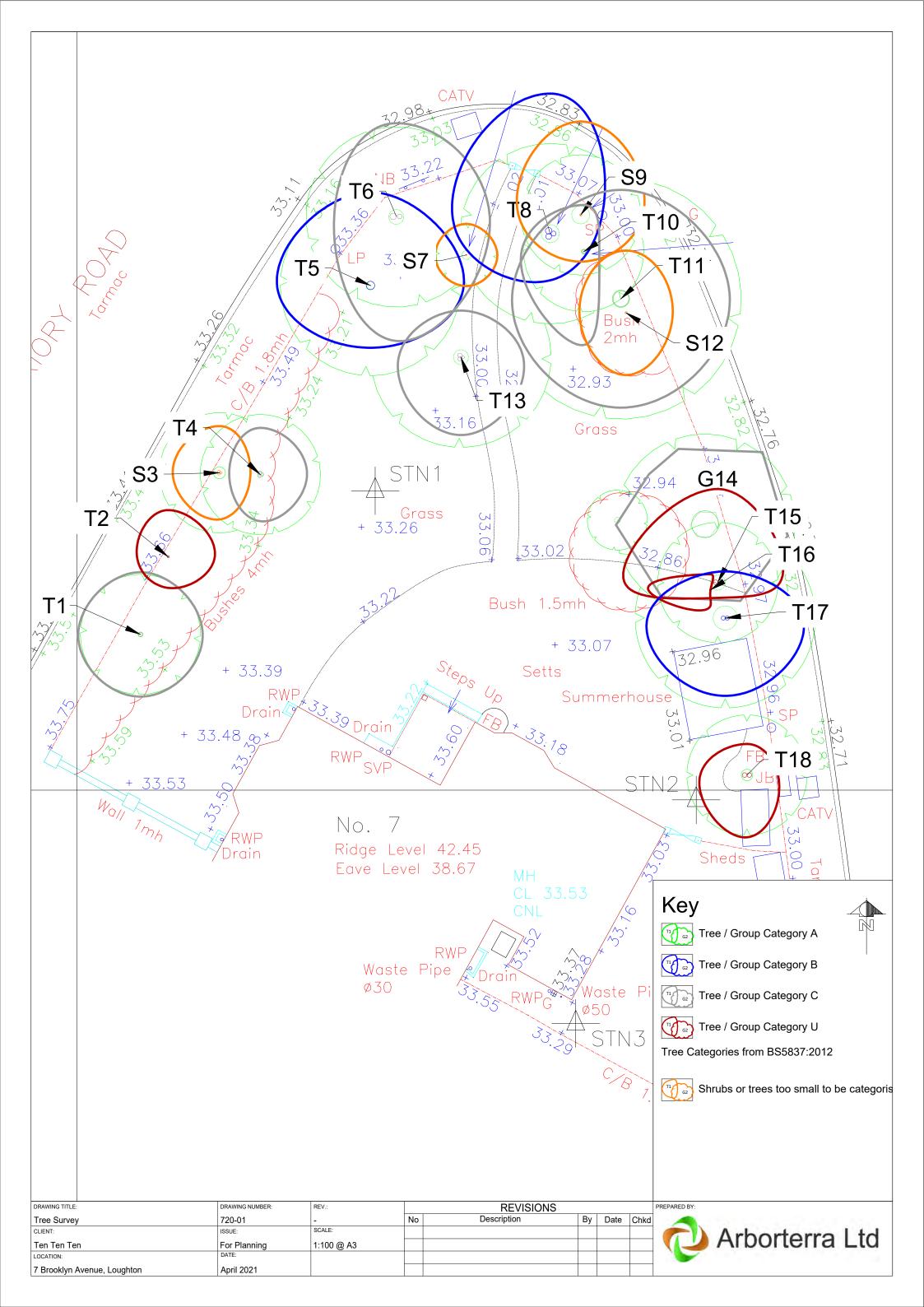
Tree Survey at 7 Brooklyn Avenue, Loughton



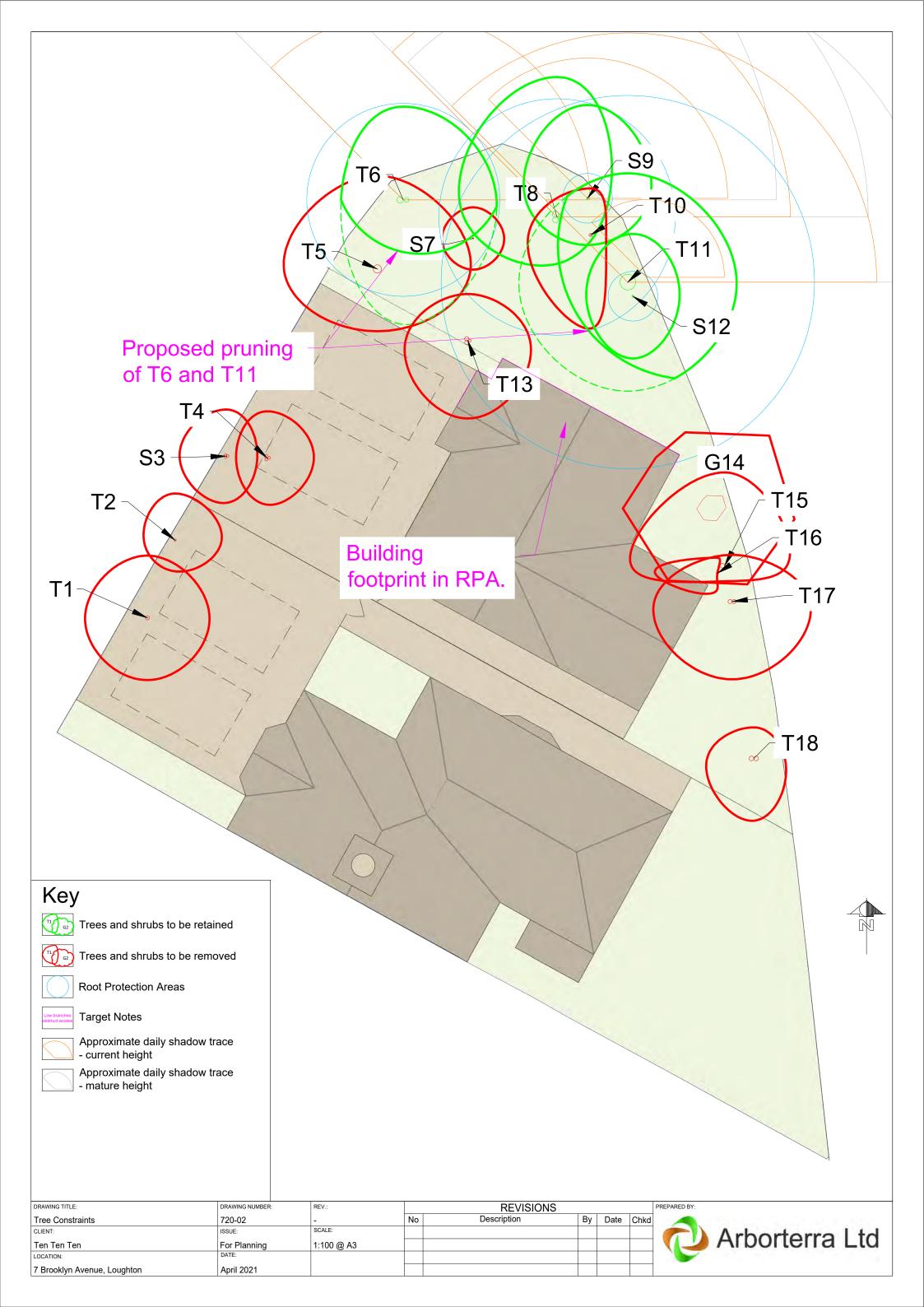
Tree No.	Stem Diam @		Height (m)	С	rown	Sprea	ıd	Age Range	Physiological Condition	First main branch	Crown Clearance	Comments	Recommendations	Remaining contribution (Yrs)	Amenity	RPA Radius	RPA Area
				N	S	Е	W		Ъ	Fir	ż			00			
T13	Hornbeam	140 x1 130 x1 80 x1	6	1.5	2.5	2	2	EM	G			Topped at 2m, and possibly at 1m. Likely as a topiaries busy.	Fell for development	40+	C1	2.5	19.4
G14	Laburnum x3	70 x1	5	2	0	0	0	SM	F				Fell for development	40+	C2	8.0	2.2
T15	Laburnum	150 x2	5	3	0.5	2	3	FM	Р			Stem and crown smothered in ivy. Leans N.	Fell for development	<10	U	2.5	20.4
T16	Horse chestnut	40 x2	6	0.5	0.5	0	2	YO	G			Unsuitable species for small residential garden	Fell for development	40+	U	0.7	1.4
T17	Purple leaf plum	130 x2	6	1.5	2.5	2.5	2.5	EM	G			DBH at 1m	Fell for development	20+	В1	2.2	15.3
T18	Elder	150 x2	3.5	1	2	1	1.5	FM	D			Dead, topped, ivy covered stem, partially collapsed south onto fence.	Fell due to condition	0	U	2.5	20.4
					-									 			

^{*} Denotes estimated dimension

APPENDIX 3 Tree Survey Plan (ref: 720-01)



APPENDIX 4 Tree Constraints Plan (ref: 720-02)



APPENDIX 5 Tree Protection Plan (ref: 720-03)

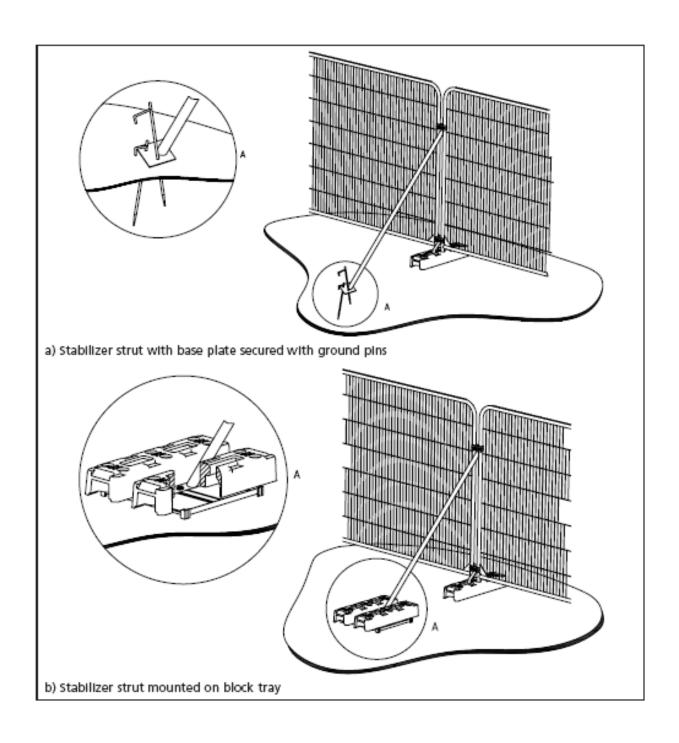


APPENDIX 6 Tree Protective Fencing

Tree Protective Fencing

Alternative Specification

Taken from Figure 3 of BS5837:2012 "Trees in relation to design, demolition and construction – Recommendations"





Tree Protection Area No Access

Contact: Oisin Kelly, Arboricultural Consultant

Tel: 07570 977449

Email: oisin@arborterra.co.uk

APPENDIX 7 Ground Protection

road plate hire

TEMPORARY ROADWAY & GROUND PROTECTION

Ground Mats - 3.0 m x 1.0 m x 20 HDPE





TGRP-GPRM

The requirement for ambitious infrastructure projects such as solar and wind generation and the huge success and subsequent expansion of the events industry has driven a raft of innovations in this field (all puns intended). These allow mechanised plant, crane and vehicle access where even a decade ago, it would have been unthinkable.

Whether it be unspoilt countryside, palatial gardens, a hallowed sports arena or a public space, the importance of keeping our green pleasant areas intact has never been more pressing. The cost of reinstatement works coupled with the friction caused by spoiling lawns and verges means that employing systems designed to protect the ground is by far the more cost effective and desirable option.

These rubber Walkovers are perfect for traversing pedestrian traffic over grass and unmade ground.

TECHNICAL SPECIFICATION

TYPICAL APPLICATIONS:

Chemical resistant, anti-slip and no rusting or rotting

Depending on the underlying ground conditions, they will support a 45 tonne lorry

Made from recycled polypropylene polymer material and is therefore ultimately recyclable again.

Superb for covering and protecting tree roots , potentially sensitive archaeology and subterranean assets.

A 'clean feet' solution for parties, events and sensitive job sites.

Our installation service is available if required.

Non metallic and therefore resistant to electrical conduction. A consideration in high voltage environments.

GPRM's are often used for covering unmade ground such as playing fields and lawns areas for heavier traffic such as trucks, cranes & machinery

A base or access way for temporary structures
Suitable for both vehicular and pedestrian access.

Can be bolted together with our clamp plate system or stapled to ground to improve security and load performance.

Suitable for traversing with steel tracked plant up to a certain weight and rubber tracked and tyred vehicles

Can be used smooth side up they are a very effective for forming a barrier between deposited soil/muck away which can then be loaded by a mini digger or grab & tip lorry, leaving the protected surface unmarked.

NOT suitable for bridging open excavations or voids

MASS: 56 kgs each

MECHANICAL HANDLING: Forklift/HIAB for multiples. 2 personnel can move and

position unaided if required

SALLY: No

ANTI SKID: Yes. Surface incorporates micro-grit.
SECURING METHOD: Clamp plates (2 and 4 way) or staples

