



Frontage Oak (T1) at 23 Linksway Northwood HA6 2XA

BS:5837 Root Protection Area (RPA) Notes

(Ref. 101 612)

Date: 02/09/2021

Prepared by:

Russell Ball BSc. (Hons.), P.G. Dip. LM, CBiol., MRSB

Royal Society of Biology *Chartered Biologist*

International Society of Arboriculture *Certified Arborist*

LANTRA Approved *Professional Tree Inspector*

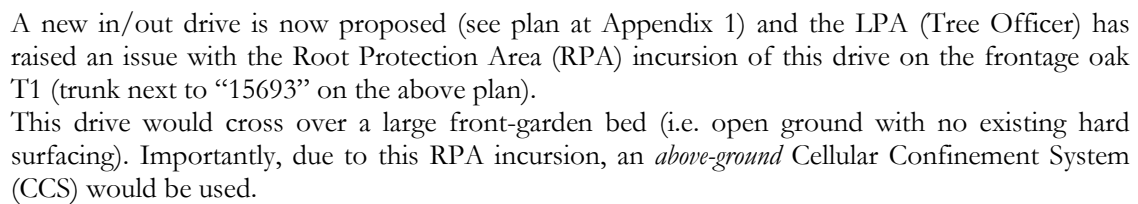
International Society of Arboriculture *Qualified Tree Risk Assessor*

No. 1 Landford Close, Rickmansworth, WD3 1 NG

Mobile: 078844 26671

Email: russell@arboleuro.co.uk

The front drive scheme - as set out on the plan extract below - was approved in November 2017 by the LPA (Hillingdon Council. Ref: 15845/APP/2017/3399).



2.0 Root Protection Area (RPA) Incursion

However, whilst this is exceeded by 1.25%, with this proposed drive, such a minimal percentage increase could not be described as excessive. Furthermore, in the Arboricultural Association's (AA) Guidance Note 12 "The use of cellular confinement system near trees – a guide to good practice" section 76 it states:

* RPA of 152.20m² with an incursion of 32.35m² = 21.25%
 ** See section 4.0 below.

The project architect advises that the revised frontage drive layout is justified on four counts:

- Ref: 101 612

- (b) Reversing cars out onto the main road carries a visibility risk.
- (c) The neighbours (on the left, right and opposite) have in/out drives.
- (d) Many of the properties in Linksway also have in/out driveways: including such a recently constructed drive (with a large frontage oak) at no. 20 Linksway.

4.0 RPA Incursion Mitigation

In respect to the subject oak T1*, the project architect proposes a large lawn area to the north and NE of the drive. It is well documented that grass roots – notably when regularly mown (keeping them more biologically active) – effectively compete with tree roots for water and any essential mineral elements that are dissolved in this soil water. In this regard, tree and grass roots are not compatible.

See the Royal Horticultural Society link: <https://www.rhs.org.uk/advice/profile?pid=323>

To mitigate the T1 RPA incursion with the proposed drive we would recommend that this lawn area is replaced with a mulched-over shade garden: this would equate to an area of 66.0m² (see Note 2 on the appended plan). Using such mulch area would (a) eliminate the aforementioned tree/grass root competition and (b) create a moist soil environment that is conducive to tree root growth (to the benefit of T1). Furthermore, earthworm activity would be promoted creating micro-(aeration) tunnels as they move up and down the soil profile, also taking (recycling) surface organic matter down into the soil. See the attached ISA leaflet on “Proper Mulching Techniques”

* As plotted on AEC appended plan (ref: 101 612)

5.0 Conclusions and Recommendations

5.1 Whilst the revised proposed drive exceeds the BS:5837 RPA maximum incursion by 1.25% such a minimal percentage increase could not be described as excessive.

5.2 There are valid reasons as to why the proposed drive layout is justified.

5.3 To mitigate the T1 RPA incursion, a mulched-over shade garden is recommended that would deliver multiple benefits to this tree.

5.4 An *above-ground* Cellular Confinement System would be used for the proposed in/out drive.

REFERENCES

- BS 5837; 2012 ‘Trees in relation to design, demolition and construction - Recommendations’ British Standards Institute, London.
- Arboricultural Association (AA) Guidance Note 12 “The use of Cellular Confinement Systems near trees: a guide to good practice” (AA 2020).

Russell Ball BSc. (Hons.), P.G. Dip. LM, CBiol., MRSB.

Technical Director: Arbol EuroConsulting Ltd.

Royal Society of Biology **Chartered Biologist**

International Society of Arboriculture **Certified Arborist** (ID: UI-1287A)

LANTRA Approved **Professional Tree Inspector** (Ref: HO00178227 504187)

International Society of Arboriculture **Qualified Tree Risk Assessor** (ID: 2148)

No. 1 Landford Close Rickmansworth WD3 1 NG

Mobile: 078844 26671

Email: russell@arboleuro.co.uk

APPENDIX 1

PLAN EXTRACT

HEADINGS & ABBREVIATIONS

TREE NO.	REFERENCE NUMBER. REFER TO PLAN OR NUMBERED TAGS WHERE APPLICABLE
SPECIES:	COMMON NAME (LATIN NAMES AVAILABLE ON REQUEST)
AGE RANGE/LIFE STAGE:	Y = YOUNG, SM = SEMI MATURE, EM = EARLY MATURE, M = MATURE, PM = POST MATURE
HEIGHT:	ESTIMATED AND RECORDED IN METRES. APPROXIMATELY 1 IN 10 TREES ARE MEASURED USING A CLINOMETER AND THE REMAINDER ESTIMATED AGAINST THE MEASURED TREES
CROWN SPREAD:	MAXIMUM CROWN RADIUS MEASURED TO THE FOUR CARDINAL COMPASS POINTS FOR SINGLE SPECIMENS ONLY (MEASUREMENT FOR TREE GROUPS - MAXIMUM RADIUS OF THE GROUP)
CROWN CLEARANCE &DIRECTION OF GROWTH:	HEIGHT IN METERS OF CROWN CLEARANCE ABOVE ADJACENT GROUND LEVEL (TO INFORM ON GROUND CLEARANCE, CROWN/STEM RATIO AND SHADING)
STEM DIA/MULTI-STEM DIA:	STEM DIAMETER - MEASURED AT APPROXIMATELY 1.5 METRES ABOVE GROUND LEVEL OR A COMBINATION OF STEMS FOR MULTI-STEMMED TREES
VITALITY:	A MEASURE OF PHYSIOLOGICAL CONDITION. D = DEAD, MD = MORIBUND, P = POOR, M = MODERATE, N = NORMAL
ESTIMATED REMAINING CONTRIBUTION:	RELATIVE USEFUL LIFE EXPECTANCY (YEARS)
BS 5837CATEGORY & SUB-CATEGORY GRADING:	A = HIGH QUALITY AND VALUE, B = MODERATE QUALITY AND VALUE, C = LOW QUALITY AND VALUE, U = UNSUITABLE FOR RETENTION: SUB-CATEGORY REFERS TO ARBORICULTURAL (1), LANDSCAPE (2) & CULTURAL/CONSERVATION VALUES (3).
BS 5837 RPA:	ROOT PROTECTION AREA - BS 5837 (2012) ANNEX D (THE RECOMMENDATIONS STATE THAT THE RPA SHOULD BE CAPPED AT 707 M ²)
BS 5837 RADIUS:	PROTECTIVE DISTANCE - RADIUS FROM THE CENTRE OF THE STEM TO THE LINE OF TREE PROTECTION (CONSTRUCTION EXCLUSION ZONE - CEZ) AND PROTECTIVE BARRIER

TREE SURVEY SCHEDULE
2014 © ARBOL EURO CONSULTING LTD.

SITE:	23 LINKSWAY NORTHWOOD HA6 2XA
CLIENT:	MR D. JOSHI
BRIEF:	CARRY OUT A PHASE I ARBORICULTURAL IMPACT (<i>TREE CONSTRAINT</i>) ASSESSMENT ON THE PROPOSED DEVELOPMENT AT THE ABOVE SITE.

SURVEYOR:	R. BALL
ASSESSMENT DATE:	23/05/2021
VIEWING CONDITIONS:	CLOUDY
JOB REFERENCE:	101 612

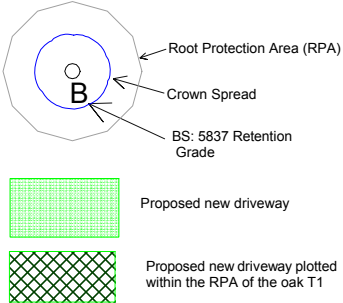
PAGE: 1 of 1

TREE HEDGE GROUP NO.	SPECIES (COMMON NAME)	AGE RANGE/ LIFE STAGE	HEIGHT (m)	RADIAL CROWN SPREAD (m)				CROWN CLEARANCE & DIRECTION OF GROWTH (m)	STEM/ MULTI- STEM* DIA. (mm)	VITALITY	COMMENTS/STRUCTURAL MORPHOLOGY	PRELIMINARY MANAGEMENT	CATEGORY & SUB- CATEGORY GRADING BS 5837	BS 5837 RPA RADIUS (m)	BS 5837 RPA (m ²)
				N	E	S	W								
T1	Red Oak	EM	18+	6	7	6	9	4.5	580	N	Good crown form	None at time of survey (NATS)	B1	6.9	152.2
T2	Magnolia	M	8	2	1.7	1.8	2.5	2.2	* 170; 195	N	Suppressed by T1 to the south	NATS	C2	3.1	30.2
T3	Silver Birch	SM	9	1.8	1.8	1.8	1.8	5.0	260	N	Good companion tree form with T4	NATS	B2	3.2	30.5
T4	Silver Birch	SM	9	1.8	1.8	1.8	1.8	5.0	250	N	Good companion tree form with T3	NATS	B2	3.0	28.2



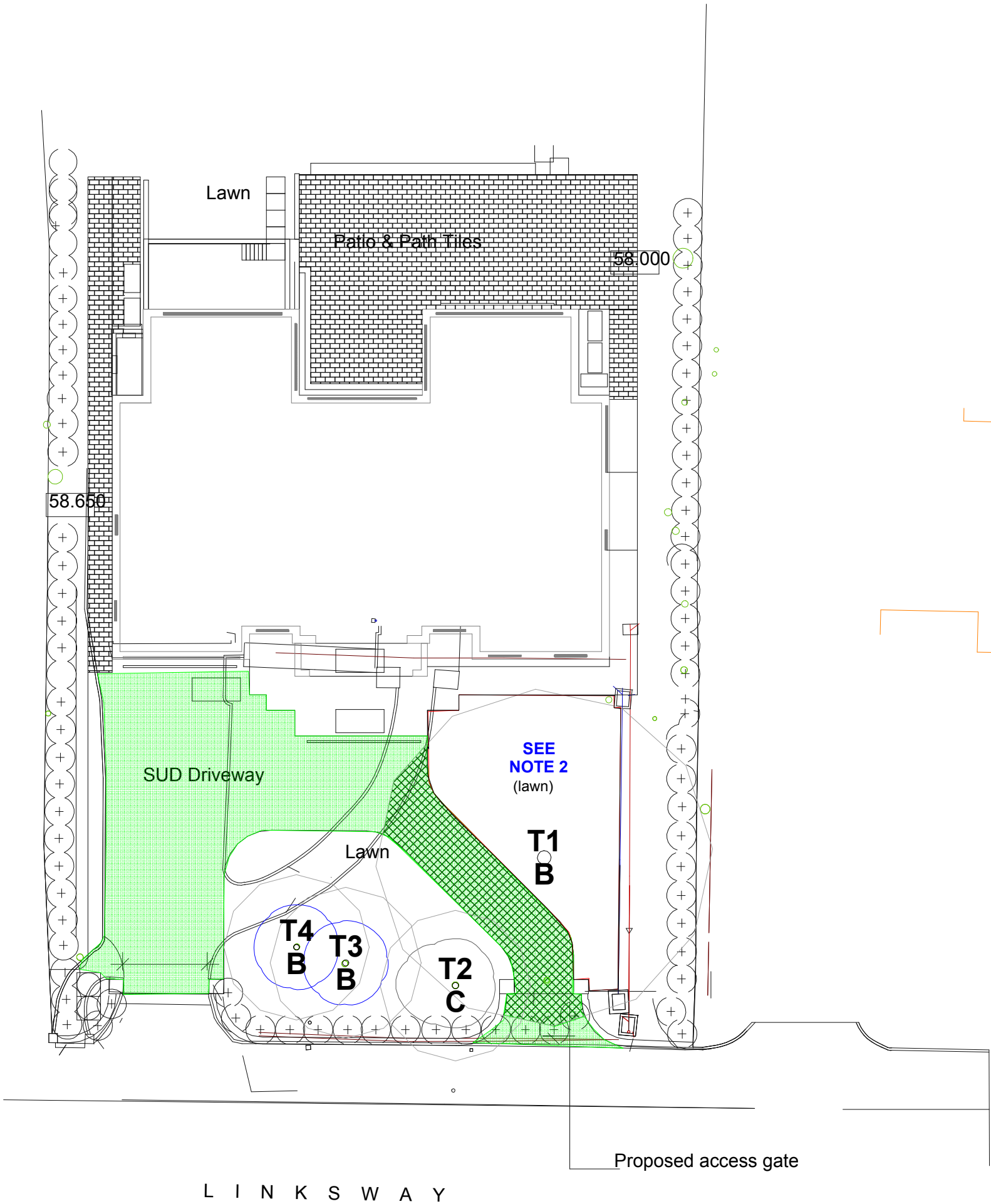
The original of this drawing was produced in colour - a monochrome copy should not be relied upon

KEY



NOTES

1. The proposed driveway RPA incursion on T1 is 21.25% (RPA of 152.20m² with an incursion of 32.35m² = 21.25%)
2. To mitigate the T1 RPA incursion with the proposed drive the lawn area should not be installed but rather a mulched-over shade garden (equates to to 66.0m²)



5m 10m 15m 20m

SCALE BAR

Proper Mulching Techniques

Mulching is one of the most beneficial practices a homeowner can use for better tree health.

Mulches are materials placed over the soil surface to maintain moisture and improve soil conditions. Mulching is one of the most beneficial acts a homeowner can do for the health of a tree. However, improper mulching materials and practices may have little, or even negative, impact on the trees in your landscape.



Benefits of Proper Mulching

- Helps reduce soil moisture loss through evaporation
- Helps control weed germination and growth
- Insulates soil, protecting roots from extreme summer and winter temperatures
- Can improve soil biology, aeration, structure (aggregation of soil particles), and drainage over time
- Can improve soil fertility as certain mulch types decompose
- Inhibits certain plant diseases
- Reduces the likelihood of tree damage from “weed whackers” or the dreaded “lawn mower blight”
- Gives planting beds a uniform, well-cared-for look

Trees growing in a natural forest environment have their roots anchored in a rich, well-aerated soil full of essential nutrients and soil microorganisms. The soil is blanketed by leaves, organic materials, and living organisms that replenish and recycle nutrients. This environment is optimal for root growth and mineral uptake. Urban landscapes and new developments, however, are typically harsher environments with poor quality soils, reduced organic matter, and large fluctuations in soil temperature and moisture. Applying a 2- to 4-inch (5- to 10-cm) layer of organic mulch can mimic a more natural environment and improve plant health.

Types of Mulch

Mulches are available in many forms. The two major types of mulch are inorganic and organic. Inorganic mulches include various types of stone, lava rock, pulverized rubber, geotextile fabrics, and other materials. Inorganic mulches do not decompose and do not need to be replenished often. On the other hand, they do not improve soil structure, add organic materials, or provide nutrients. For these reasons, most horticulturists and arborists prefer organic mulches.

Organic mulches include wood chips, pine needles, hardwood and softwood bark, cocoa hulls, leaves, compost mixes, and a variety of other products usually derived from plants. Organic mulches decompose in the landscape at different rates depending on the material, climate, and soil microorganisms present. Those that decompose faster must be replenished more often. Because the decomposition process improves soil quality and fertility, many arborists and other landscape professionals consider that characteristic a positive one, despite the added maintenance.



Not Too Much!

As beneficial as mulch is, too much can be harmful. The generally recommended mulching depth is 2 to 4 inches (5 to 10 cm). Unfortunately, many landscapes are falling victim to a plague of overmulching. “Mulch volcanoes” are excessive piles of mulch materials applied around the base of trees. While organic mulches must be replenished over time, buildup can occur if reapplication outpaces decomposition or if new material is added simply to refresh color. Deep mulch can be effective in suppressing weeds and reducing maintenance, but it often causes additional problems.

Problems Associated with Improper Mulching

- On wet soils, deep mulch can lead to excess moisture in the root zone, which can stress the plant and cause root rot.
- Piling mulch against the trunk or stems of plants can stress stem tissues and may lead to the development of insect and disease problems or stem girdling roots.

- Some mulches, especially those containing fresh grass clippings, can affect soil pH and may eventually lead to nutrient deficiencies or toxic buildups.
- Mulch piled high against the trunks of young trees may create habitats for rodents that chew the bark and can girdle the trees.
- Thick blankets of fine mulch can become matted and may reduce the penetration of water and air.
- Anaerobic “sour” mulch may give off pungent odors, and the alcohols and organic acids that build up may be toxic to young plants.



Proper Mulching

The choice of mulch and the method of application can be important to the health of landscape plants. The following are some guidelines to use when applying mulch:

- Determine whether soil drainage is adequate and if there are plants that may be affected by the choice of mulch. Most commonly available mulches work well in most landscapes. Some plants may benefit from the use of slightly acidifying mulch, such as pine bark.
- For well-drained sites, apply a 2- to 4-inch (5- to 10-cm) layer of mulch (less if poorly drained). Coarse mulches can be applied slightly deeper without harm. Place mulch out to the edge of a tree's crown or beyond. Remember, if a tree had a say in the matter, its entire root system (which usually extends well beyond the drip line) would be mulched.
- If mulch is already present, check the depth. If sufficient mulch is present, break up any matted layers and refresh the appearance with a rake. Some landscape maintenance companies spray mulch with a water-soluble, vegetable-based dye to add color to faded material.
- If mulch is piled against the stems or tree trunks, pull it back several inches/centimeters so that the base of the trunk is exposed. Composted wood chips can make good mulch, especially when they include some bark and leaves. Fresh wood chips also may be used around established trees and shrubs. Avoid using fine, non-composted wood chips, as soil nitrogen may be taken up by the roots as the wood chips decompose.



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E-mail inquiries: isa@isa-arbor.com



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