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**ARBORICULTURAL IMPLICATIONS ASSESSMENT
FOR PROPOSED SINGLE STOREY EXTENSION**

AT

**29 HIGH STREET
LINDFIELD
WEST SUSSEX
RH16 2HJ**

BY

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**Our ref: J65.81
18th July 2024**

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2. TREE CONSTRAINTS PLAN, DRAWING NO. J65.81/01
3. TREE PROTECTION PLAN, DRAWING NO. J65.81/02

1. INTRODUCTION

- 1.1 Broad Oak Tree Consultants Ltd. received instructions from Ms. Murphy and Mr. Fawehimi to undertake an inspection of trees located on and immediately adjacent to the site referred to as No. 29 High Street, Lindfield, West Sussex, RH16 2HJ. The purpose of the inspection was to produce a base inventory of the tree stock and an Arboricultural Implications Assessment of development proposals.
- 1.2 The proposals are for the construction of a single storey rear extension, internal alterations and an increased basement area. Details of the proposals will have been submitted by Gould Baxter, Architects.
- 1.3 The trees were inspected on 8th July 2024 by Tim Laddiman, BSc.(Hons) M.I.C.For. M.Arbor.A., Chartered Arboriculturist and Principal Consultant of Broad Oak Tree Consultants Ltd.

2. GENERAL SITE DESCRIPTION

- 2.1 No. 29 High Street is a semi detached dwelling set back within a long, narrow rectangular plot with a shared path off the High Street to the east. To the north adjoining the rear garden are several car parks.
- 2.2 Within the front garden are numerous shrubs and a small Magnolia to the road frontage. In the rear garden are several small trees/shrubs. Within the rear garden adjoining to the south is a mature Tulip tree and row of Ash trees, with elements of the overhanging Tulip tree canopy having been cut back in the past.

3. SCOPE OF TREE SURVEY

- 3.1 All trees and shrubs of 75mm diameter or more at 1.5m above ground level were included in the survey. This included trees immediately adjacent to the site.
- 3.2 For the offsite trees estimates of location, dimensions and condition had to be made.

4. DATA COLLECTION

- 4.1 All trees were inspected from the ground and no climbing or specialist investigations were undertaken. Only those trees within the site boundary could be basally inspected, with the structural integrity of the trees located outside the site unconfirmed. Each tree was inspected to the requirements of Section 4.4 "Tree Survey" of BS 5837:2012 "Trees in Relation to Design, Demolition and Construction - Recommendations".

- 4.2 The tree survey followed the numbered sequence from T1-T6 inclusive. Tree numbers, together with BS recommended colour coding of condition, have been added to the Tree Constraints Plan, our drawing no. J65.81/01 in Appendix 2. This drawing also includes crown spreads based on four compass points and BS calculated root protection areas.
- 4.3 The following categories of information were obtained for each tree. A separate detailed tree survey sheet is attached in Appendix 1, together with comprehensive explanatory sheets which cover the details of the categories listed below.

- (1) Tree reference number
- (2) Species
- (3) Height in metres
- (4) Stem count
- (5) Stem diameter or equivalent in millimetres
- (6) Branch spread in metres
- (7) Age class
- (8) Height of crown clearance in metres
- (9) Physiological condition
- (10) Estimated remaining contribution in years
- (11) Category grading
- (12) Structural condition
- (13) Preliminary management recommendations

- 4.4 Within the assessment of physiological condition and remaining contribution, a visual inspection of each tree was undertaken to assess the crown and stem for any weak structures, deadwood, hollows, forks or other defects that might affect its stability and safety. The base of each tree was also visually inspected, together with tapping and probing, to search for signs of root lifting, bark death or decay. Where stems were heavily ivy clad, no full assessment of structural integrity could be undertaken. Clearance of the ivy would be necessary for confirmation of tree condition.

5. RISK ASSESSMENT - INFORMATIVES

- 5.1 Although the potential risk to someone passing beneath a tree when the tree or part of it fails is relatively remote, the risk is present. This increases significantly in areas of consistent and regular usage on a year round basis, such as footpaths, gardens and roadways. Where static structures exist, the risks become constant and an assessment is made as to whether complete or partial failure of a tree could potentially cause physical damage to such structures.
- 5.2 Within the scope of any tree survey it is a fact that not all risks of stem or crown failure can be covered, particularly in relation to freak occurrences of weather when even healthy trees can suffer stem snap or windblow. There is also a well known propensity for mature trees to occasionally shed limbs for no discernible reason, even on calm days. Although relatively rare, limbs may occasionally be shed and this should be acknowledged as a risk that cannot entirely be mitigated.

6. RESULTS OF TREE INSPECTIONS

- 6.1 A total of five individual trees and one small group were inspected. Of these the three trees/shrubs within the grounds of No. 29 High Street are all small, compact features. The other trees are located in the adjoining garden of No. 27 High Street.
- 6.2 The mature Tulip Tree (T1) is asymmetric in form due to competition from the row of the three Ash trees forming G2. These appear to possibly have symptoms of early Ash Dieback and if so, will have limited lifespans. Due to the competition from G2 the crown of the Tulip tree has developed extensively to the north and east, with past cut back points visible in the canopy where overhanging limbs were removed in the past with subsequent regrowth.
- 6.3 Of the trees inspected, the following is a breakdown of the various numbers of trees and groups in each BS category.

BS Category	Tree No.	Sub Total
A	-	-
B	T1,	1
C	G2, T3, T4, T5, T6,	5
U	-	-
	TOTAL	6

6.4 *Interpretation of table*

- Category A** Retention most desirable. Of high quality and value and in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested).
- Category B** Retention desirable. Of moderate quality and value and in such a condition as to make a significant contribution (a minimum of 20 years is suggested).
- Category C** Could be retained – of low quality and value. Poor crown form, heavily asymmetric, large numbers of similar species/size. Currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested) or young trees with a stem diameter below 150mm.
- Category U** Trees for removal. Dead/dying/dangerous trees due to structural defects, fungal decay or root plate uplift. Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management.

7. BS CALCULATED ROOT PROTECTION AREAS (RPAs)

- 7.1 To provide an indication of the critical areas of root plate necessary for tree survival and longevity, BS 5837:2012 requires the calculation of RPAs for trees in the BS Categories A, B and C. Calculations are not made for Category U trees which will require removal on safety grounds within 10 years.
- 7.2 The table below has been calculated using the measured stem diameters and the formula as described in Section 4.6 in BS 5837:2012. These are represented as basic circles on the Tree Constraints Plan. Where buildings, walls, services and hard surfacing exist within the indicated RPAs it is likely that the architecture of root systems will have been affected. Foundations to walls and buildings can completely obstruct root development, depending on their depth and the nature of the underlying soils. In the absence of detailed site investigations the indicated RPA circles should be used for guidance only within any development proposals.

Tree no.	Species	BS Category	Stem diameter or calculated equivalent (mm.)	BS calc. radial equiv. root protection area (m.)	BS calc. total RPA (m²)
T1	Tulip Tree	B2	c600	c7.2	c163
G2	3no. Ash	C1	<600	<7.2	<163
T3	Bay	C2	110	1.3	5
T4	Japanese Maple	C2	100	1.2	5
T5	Unconfirmed	C2	c150	c1.8	c10
T6	Magnolia	C2	c150	c1.8	c10

ARBORICULTURAL IMPLICATIONS ASSESSMENT

8. DEVELOPMENT PROPOSALS

- 8.1 The proposals are for the construction of a single storey rear extension, internal alterations and an increased basement area. Details of the proposals will have been submitted by Gould Baxter, Architects.
- 8.2 The supplied Gould Baxter proposed site layout has been used as the base for the Broad Oak Tree Consultants Ltd. Tree Protection Plan, drawing no. J65.81/02 in Appendix 3. This indicates measures to protect the various on and offsite trees during the proposed works in accordance with BS5837:2012 requirements.

9. POTENTIAL IMPACT OF PROPOSALS ON TREES

- 9.1 No trees require removal for the proposals.
- 9.2 The RPA of the offsite tree (T1) only overlaps with the outer corner of the proposed extension by a similar area to an A3 piece of paper. This is of no relevance and there will be no adverse impact on the Tulip tree's root system. No other tree RPAs overlap with any part of the proposals.
- 9.3 Due to the nature of the site and the proposed works no specific tree protection measures will be necessary.
- 9.4 All materials will be craned in from the car park to the north into the existing gravel area of the rear garden without risk of contact damage with the crowns. Only limited materials will be delivered in at any time and will be transferred to the construction site by hand/wheel barrow along the existing gravel path.
- 9.5 There is no requirement for large machinery access and only minimal materials deliveries, as and when needed. As such risks to on and offsite tree RPAs is minimal.

10. SERVICES/DRAINAGE/SOAKAWAYS

- 10.1 All services/drainage/soakaways already exist and will be reused for the proposals.
- 10.2 If it is necessary for services/drainage to be brought in within a tree RPA, the trench will need to be hand excavated or air spaded to avoid damaging tree roots. Any excavations within indicated tree RPAs will be undertaken to the requirements of NJUG Volume 4 "Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees" and supervised by an Arboricultural Consultant.

11. ARBORICULTURAL METHOD STATEMENT

- 11.1 A separate Arboricultural Method Statement is not considered necessary for this site. Details of the protective fencing specification, timing and location are indicated on the Tree Protection Plan, which can be referred to in a specifically worded condition.

12. SUMMARY

- 12.1 The proposals will not require any tree removal and will not impact on any on or offsite tree RPAs.
- 12.2 Potential impacts during construction are minimal and overall there should be no grounds for a refusal based on arboricultural matters.
- 12.3 The Tree Protection Plan can be referred to as an approved drawing or in a specifically worded condition to ensure that the retained trees are appropriately protected during the construction works.

Tim Laddiman
Chartered Arboriculturist
Broad Oak Tree Consultants Ltd.

APPENDIX 1

TREE SURVEY EXPLANATORY SHEET

Height	in metres (estimated where ground uneven or access restricted).
Stem count	number of stems
Stem diameter	in mm. at 1.5m. above ground level.
Branch spread	radial spread in metres at four main compass points (estimated where no access).
Age class	Young - Y Semi Mature - SM Mature - M Over mature - OM Veteran - V
Height of crown clearance	in metres. Normally range of heights of outer branches above ground level, e.g. 2-4m.
Physiological condition	Good, Fair, Poor, Dead, Variable
Estimated remaining contribution	in years e.g. less than 10, 10-20, 20-40, 40+
Category grading	see attached sheet
Structural condition	comment on presence of defects, decay, crown form, past management, deadwood, other features worthy of note. N.B. If trees are ivy clad, no full structural assessment will have been possible.
Preliminary management recommendations	requirements of further investigations, works necessary to alleviate potential hazards based on current setting and levels of access. NB: Works that may be necessary in relation to development are not included here

CASCADE CHART FOR TREE QUALITY ASSESSMENT

TREES FOR REMOVAL				
Category and definition	Criteria			Identification on plan
Category U Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management	- 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 R category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) - Trees that are dead or are showing signs of significant, immediate and irreversible overall decline. - Trees infected with pathogens of significance to the health and/or safety of other trees nearby (e.g. Dutch elm disease), or very low quality trees suppressing adjacent trees of better quality NOTE Habitat reinstatement may be appropriate (e.g. R category tree used as a bat roost: installation of bat box in nearby tree.)			DARK RED
TREES TO BE CONSIDERED FOR RETENTION				
Category and definition	Criteria - Subcategories			Identification on plan
	1. Mainly arboricultural values	2. Mainly landscape values	3. Mainly cultural values, including conservation	
Category A Those of high quality and value: in such a condition as to be able to make a substantial construction (a minimum of 40 years is suggested)	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups)	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN
Category B Those of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested)	Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage)	Trees present in numbers, usually as groups or woodland, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features (e.g. trees of moderate quality within an avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality	Trees with clearly identifiable conservation or other cultural benefits	MID BLUE
Category C Those of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150mm.	Trees not qualifying in higher categories	Trees present in groups or woodland, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit.	Trees with very limited conservation or other cultural benefits	GREY
NOTE Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150mm should be considered for relocation				

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition and Notes	Preliminary management recommendations
					N	E	S	W							
T1	Tulip Tree	15	1	c600	8.5	8	c7	3.5	M	2+	Unconfirmed	20-40	B2	Crowded to W. Slight lean to E. Pendular outer limbs. Past raising and cut back over boundary.	
G2	3no. Ash	<17	1	<600	<7.5	<6	<4	<6	M	4+	Unconfirmed	10-20	C1	Crowded. Ivy clad. Possible early Ash Dieback.	
T3	Bay	4	1	110	1	1	1	1	Y	0+	Good	20-40	C2	Dense crown. Pruned in past.	
T4	Japanese Maple	3.5	1	100	c1.5	2.5	2	2.5	Y	1.6+	Fair	20-40	C2	Overtopped. Slight lean to S.	
T5	Unconfirmed	3	Multi	c150	3	3	c1.5	3.5	SM	1.3+	Fair	20-40	C2	Multi-stemmed <1m. Contorted stems. Crowded to S.	
T6	Magnolia	3	Multi	c150	2.5	1.5	1.5	1.5	Y	0+	Fair	20-40	C2	Multi-stemmed from ground level. Previously crowded to S.	

APPENDIX 2

29 HIGH STREET
LINDFIELD WES
SUSSEX
RH16 2HJ

TREE CONSTRAINTS PL.

T1 - T6 Tree numbers

BS Category of Condition

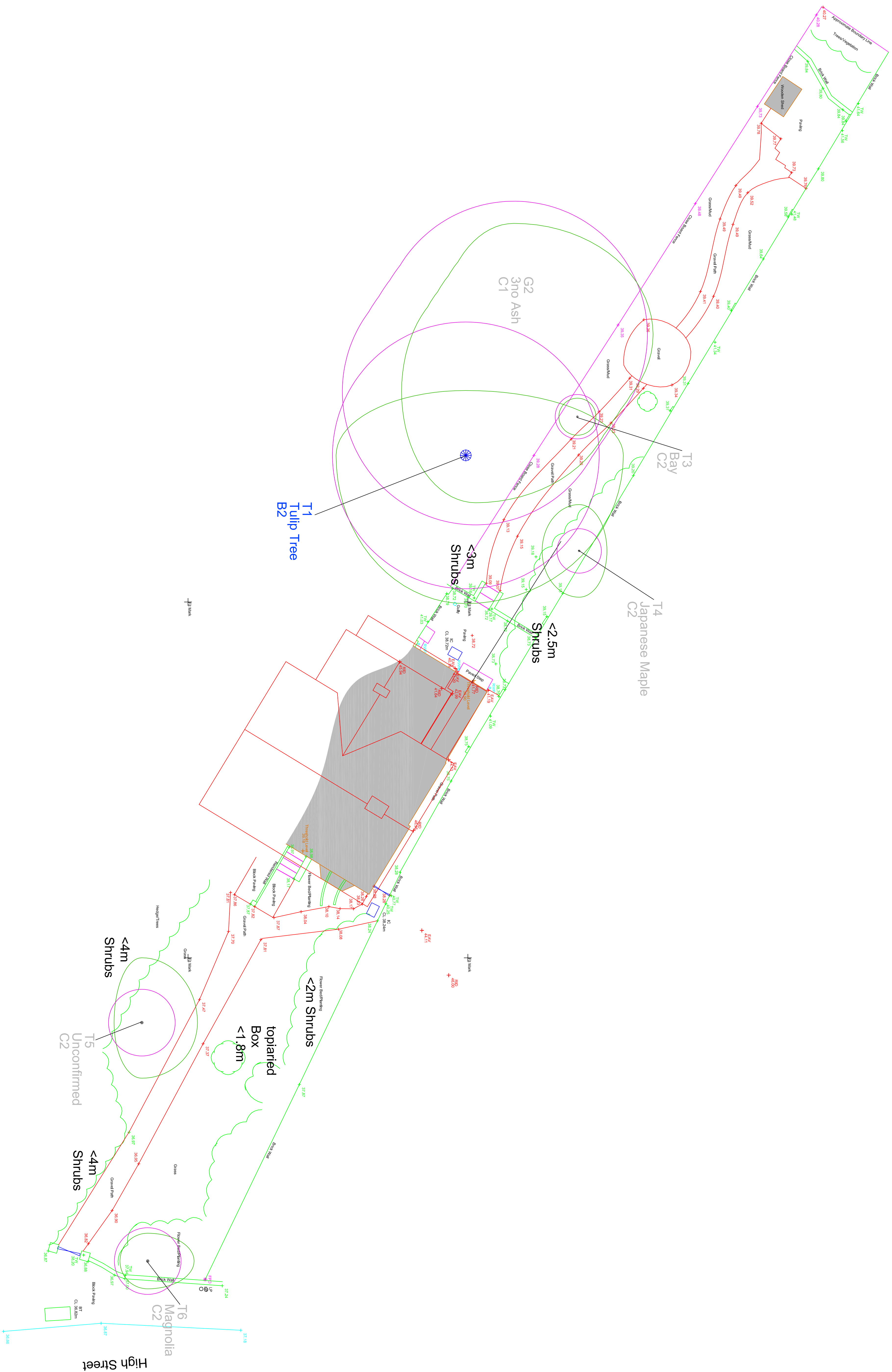
BS Condition A

BS Condition B
T1BS Condition C
T3BS Condition U
0

own opinion

BS Calculated ro
protection areas

The root protection areas have been calculated using the measured stem diameters and the formula as described in Section 4.6 in BS5837:2012. The results are presented in Table 10. These are represented as basic circles on the T1 Constraints Plan. Where buildings, walls, services and hard surfacing exist within the indicated RPAs, it is likely that the architecture of root systems will be affected. Foundations to walls and basements can be completely obstructed root development depending on their depth and the nature of the underlying soils. In the absence of detailed site investigations, the indicated RPAs are likely to be conservative. RPAs should only be used for guidance only within any redevelopment proposals.



Scale (m)

APPENDIX 3

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition and Notes	Preliminary management recommendations
					N	E	S	W							
T1	Tulip Tree	15	1	c600	8.5	8	c7	3.5	M	2+	Unconfirmed	20-40	B2	Crowded to W. Slight lean to E. Pendular outer limbs. Past raising and cut back over boundary	
G2	3no Ash	<17	1	<600	<7.5	<6	<4	<6	M	4+	Unconfirmed	10-20	C1	Crowded. Ivy clad. Possible early Ash Dieback	
T3	Bay	4	1	110	1	1	1	1	Y	0+	Good	20-40	C2	Dense crown. Pruned in past	
T4	Japanese Maple	3.5	1	100	c1.5	2.5	2	2.5	Y	1.6+	Fair	20-40	C2	Overtopped. Slight lean to S	
T5	Unconfirmed	3	Multi	c150	3	3	c1.5	3.5	SM	1.3+	Fair	20-40	C2	Multi-stemmed <1m, contorted stems. Crowded to S	
T6	Magnolia	3	Multi	c150	2.5	1.5	1.5	1.5	Y	0+	Fair	20-40	C2	Multi-stemmed from ground level. Previously crowded to S	
T7	Lawson Cypress	20	Multi	c550	4	4	c2	c3	SM	2+	Unconfirmed	10-20	C2	Multi-stemmed near ground level. Crowded to S. Raised in past	
T8	Hazel	6	Multi	c170	3.5	2.5	c3	c2.5	SM	1+	Unconfirmed	20-40	C2	Crowded. Densely multi-stemmed from ground level	
G9	Leyland Cypress	<7	Multi	<350	<2	<3	<1	<2	Y	1+	Variable	10-40	C2	Overgrown screen. Stem to N dominant. Topped in past couple of years. Cut back round utility pole	

Tree ref. no.	Species	Height (m.)	Stem Count	Stem diameter or equivalent (mm.)	Branch spread (m.)				Age class	Ht. of crown clearance (m.)	Physiological condition	Estimated remaining contribution (years)	Category grading	Structural condition and Notes	Preliminary management recommendations
					N	E	S	W							
T1	Tulip Tree	15	1	c600	8.5	8	c7	3.5	M	2+	Unconfirmed	20-40	B2	Crowded to W. Slight lean to E. Pendular outer limbs. Past raising and cut back over boundary	
G2	3no Ash	<17	1	<600	<7.5	<6	<4	<6	M	4+	Unconfirmed	10-20	C1	Crowded. Ivy clad. Possible early Ash Dieback	
T3	Bay	4	1	110	1	1	1	1	Y	0+	Good	20-40	C2	Dense crown. Pruned in past	
T4	Japanese Maple	3.5	1	100	c1.5	2.5	2	2.5	Y	1.6+	Fair	20-40	C2	Overtopped. Slight lean to S	
T5	Unconfirmed	3	Multi	c150	3	3	c1.5	3.5	SM	1.3+	Fair	20-40	C2	Multi-stemmed <1m, contorted stems. Crowded to S	
T6	Magnolia	3	Multi	c150	2.5	1.5	1.5	1.5	Y	0+	Fair	20-40	C2	Multi-stemmed from ground level. Previously crowded to S	

29 HIGH STREET
LINDFIELD WEST
SUSSEX
RH16 2HJ

TREE CONSTRAINTS PLAN

- T1 - G9 Tree numbers
- BS Category of Condition
- | | |
|----|----------------|
| 0 | BS Condition A |
| T1 | BS Condition B |
| T3 | BS Condition C |
| 0 | BS Condition U |
- Crown spread
- BS Calculated root protection areas

The root protection areas have been established using the formulae developed in the 1970s and are set out in Section 4.61 of BS5837:2012. These are represented as basic circles on the Constraints Plan. Where buildings, walls, services and hard surfacing exist within indicated RPAs, it is likely that the architecture of root systems will have been affected. Foundations, oaks and buildings can completely obstruct root development depending on their depth and the nature of the underlying soils. In the absence of detailed site investigations, the indicated RPA circles should be used for guidance only when any redevelopment proposals

