

Broad Oak Tree Consultants Limited

Laurel House, Burwash Road, Broad Oak, Heathfield, East Sussex TN21 8SS

**ARBORICULTURAL IMPLICATIONS ASSESSMENT
FOR PROPOSED 6 UNIT REDEVELOPMENT**

AT

**LAND TO NORTH OF NOS. 7-12
JOYCE CLOSE
LITTLEHAMPTON**

by

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**Our ref: J48.23
5th February 2014**

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1. INTRODUCTION

- 1.1 Broad Oak Tree Consultants Ltd. have received instructions from Arun District Council through MH Architects to undertake an inspection of trees located on and immediately adjacent to the site referred to as Land to North of Nos. 7-12 Joyce Close, Littlehampton. The purpose of the inspection was to produce a base inventory of the tree stock, advise on any safety issues and produce an Arboricultural Implications Assessment of redevelopment proposals.
- 1.2 The proposals are for the construction of a terrace of four houses and two flats with gardens and provision of revised and additional parking arrangements. Details of the proposals will have been submitted by MH Architects.
- 1.3 The trees were inspected on Thursday 30th January 2014 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 The site comprises an “L” shape surfaced parking area and access road enclosed to the east, south and west by residential properties. It is understood that garages may have previously occupied much of the site but these have been removed and the area is surfaced in tarmac and concrete. The site is relatively level with a low bank rising along the northern boundary to a grass verge and east/west orientated cycle/footpath.

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.

4. DATA COLLECTION

- 4.1 All trees were inspected from the ground and no climbing or specialist investigations were undertaken. Each tree was inspected to the requirements of Section 4.4 of BS 5837:2012 “Trees in Relation to Design, Demolition and Construction - Recommendations”.
- 4.2 The tree survey followed the numbered sequence from 1 to 2 inclusive. Tree numbers, together with BS recommended colour coding of condition, have been added to the Tree Constraints Plan, our drawing no. J48.23/01 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 both trees. 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 both trees 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 two trees were inspected, both of the same species and of similar age and dimension growing in close proximity to each other. The trees are less than 15 years of age with multiple stems and developing crowns. Tree no. T2 has various weak stem unions and crossing limbs likely to result in future failures. Both trees are in reasonable health and appear to be developing at typical growth rates.

- 6.2 Of the trees inspected, the following is a breakdown of the various numbers of the trees in each BS category.

BS Category	Tree No.	Sub Total
A	-	-
B	-	-
C	1, 2	2
U	-	-
	TOTAL	2

6.3 *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 redevelopment 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)
1	Swedish Whitebeam	C	260	3.1	30
2	Swedish Whitebeam	C	240	2.9	26

ARBORICULTURAL IMPLICATIONS ASSESSMENT

8. REDEVELOPMENT PROPOSALS

- 8.1 The proposals are for the construction of a terrace of four houses and two flats with gardens and provision of revised and additional parking arrangements. Details of the proposals will have been submitted by MH Architects.
- 8.2 The supplied proposal drawing has been used as the base for the Broad Oak Tree Consultants Ltd. Tree Protection Plan, drawing no. J48.23/02 in Appendix 3.

9. TREES FOR REMOVAL FOR REDEVELOPMENT

- 9.1 The proposed layout would require the removal of both trees T1 and T2.
- 9.2 As small BS category C trees and with T2 having extensive structural defects and a limited safe lifespan their removal should not represent a significant constraint to the proposals.
- 9.3 The proposed layout indicates five new feature trees to be planted as part of the landscaping scheme prepared by others. These will more than offset the loss of the two trees to the redevelopment with species, size and quality defined by a specifically worded condition requiring consultation with the Council. The new planting will have better inter tree separation and spatial arrangements to allow for a more natural and open crown development to the new trees.
- 9.4 Trees for removal for the redevelopment to proceed are indicated as such with blue dashed crown outlines on the Tree Protection Plan.

10. SUMMARY

- 10.1 The two trees present are young and small with one having life limiting structural defects.
- 10.2 Both trees would require removal as part of the proposed redevelopment but as BS category C trees and due to their small size their loss will not be significant.
- 10.3 The landscaping proposals indicate the planting of five new feature trees which will more than offset the loss of the two existing trees with much better spatial arrangement to allow open future development.
- 10.4 Species, size and quality of new trees can be controlled by a specifically worded condition.

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 Middle aged - MA 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	Preliminary management recommendations
					N	E	S	W								
1	Swedish Whitebeam	5	Multi	260	2.5	2.5	3	2.5	Y	2+	Fair	40+	C	2	Multi stemmed from under 1m. Crown lifted.	
2	Swedish Whitebeam	5	Multi	240	2	3	3	2.5	Y	1.6+	Fair	20-40	C	1	Multi stemmed from under 1m. Crown lifted. Several weak stem unions crossing stems.	

APPENDIX 2

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LAND TO NORTH OF
NOS 7-12 JOYCE CLOSE
LITTLEHAMPTON

TREE CONSTRAINTS PLAN

T1 - T2 Tree numbers

BS Category of Condition

BS Condition A

BS Condition B

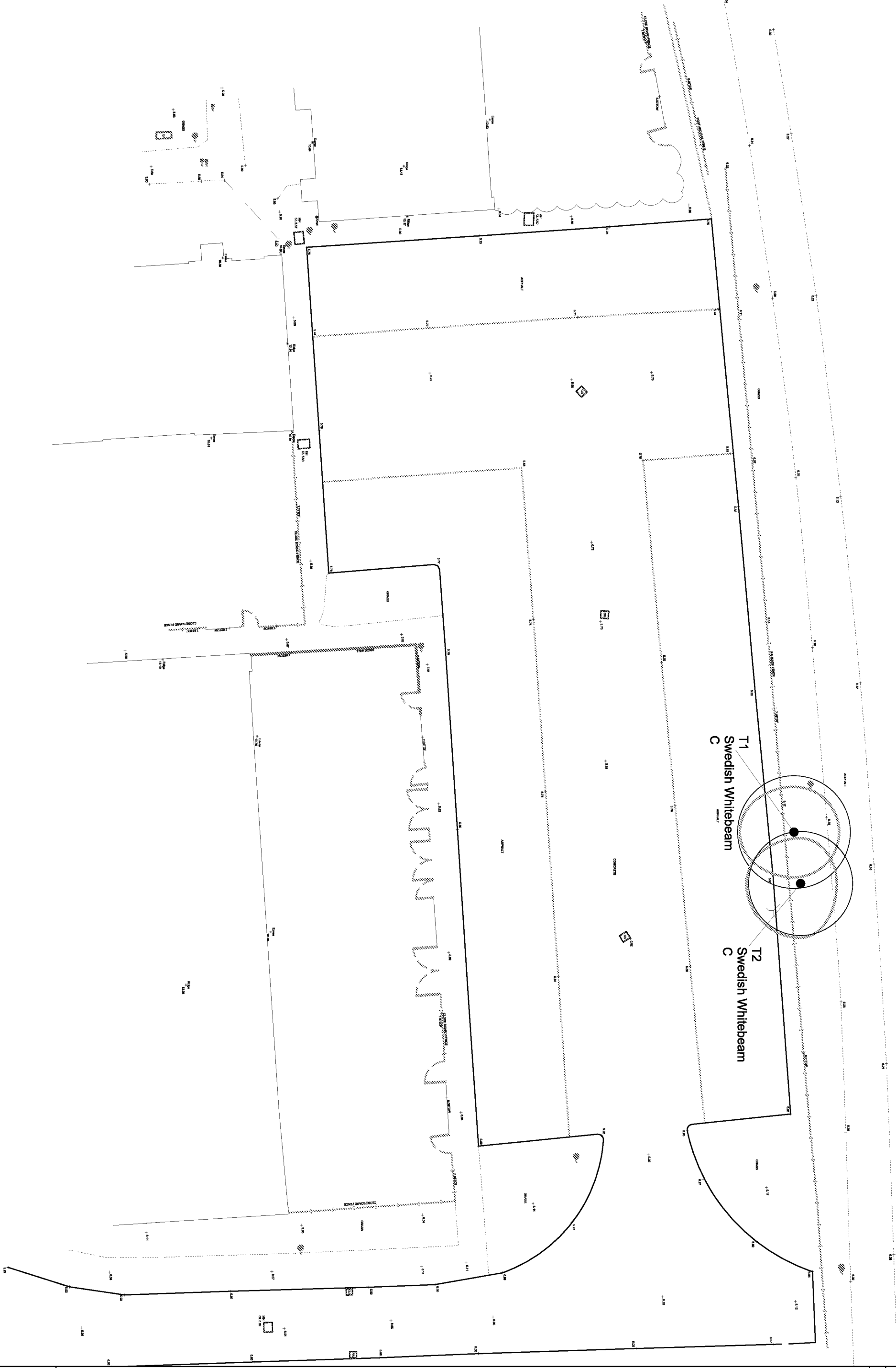
T1 BS Condition C

BS Condition U

Partial crown spread

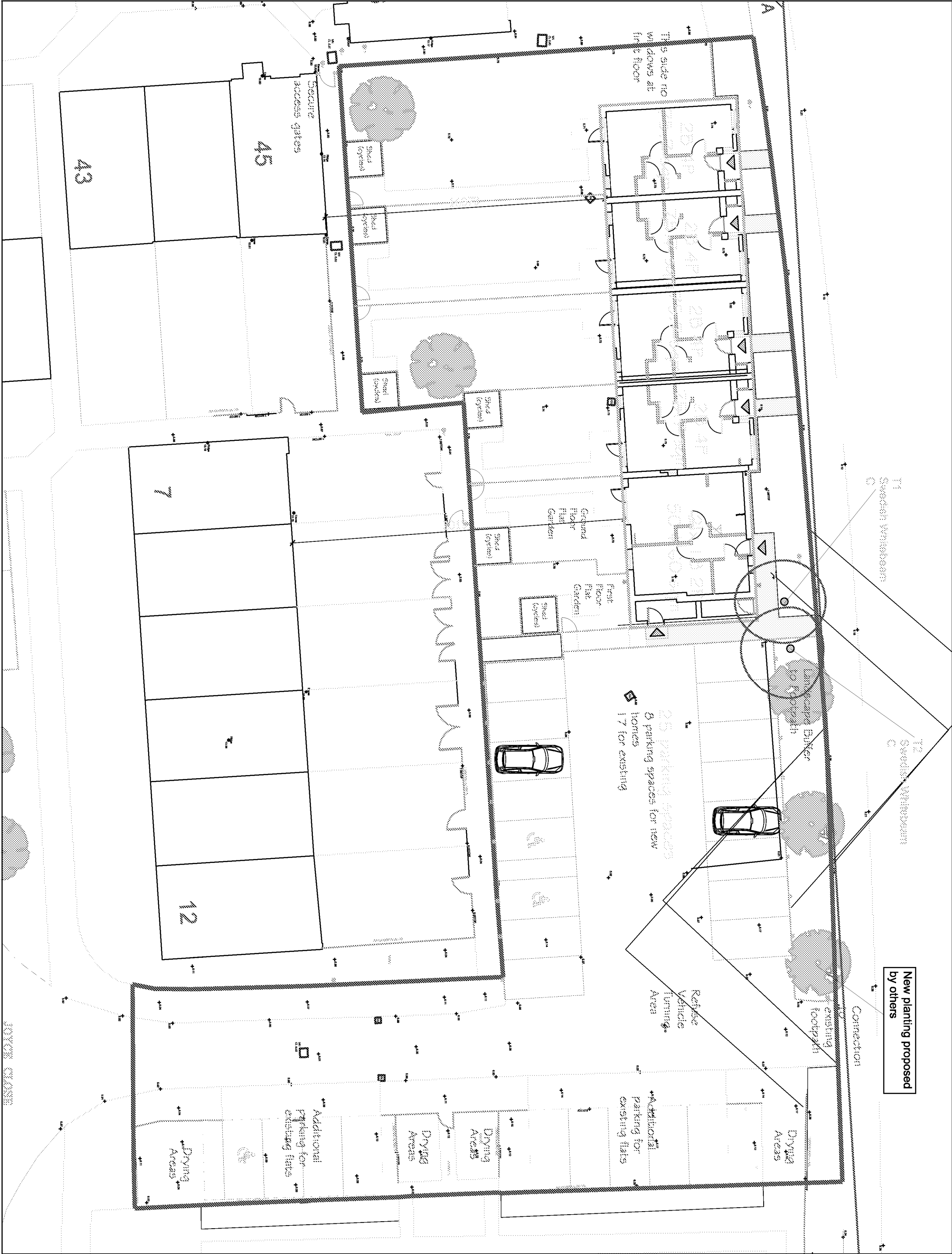
BS Calculated root protection areas

The root protection areas have been calculated using the formulae as described in Section 4.6 in BS5837:2012. These are represented as basic circles on the Tree Constraints Plan. Where buildings, walls, services and hard surfacing are located within the indicated RPA, it may affect the architecture of root systems will have been effected. Foundations to walls and buildings can completely obstruct root development, depending on their depth and the nature of the underlying soil. In such investigations, the indicated RPA circles should be used for guidance only within any redevelopment proposals.



DRAWING NO. J48.23/01
Scale: 1:200 at A3
Added to by: NL
30/01/2014

APPENDIX 3



New planting proposed by others

Connection

existing footpath

existing footpath

existing footpath

existing footpath

existing footpath

existing footpath

existing footpath

existing footpath

existing footpath

existing footpath

existing footpath

existing footpath

existing footpath

existing footpath

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existing footpath

existing footpath

existing footpath

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LAND TO NORTH OF
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TREE PROTECTION PLAN

T1 - T12 Tree numbers

BS Category of Condition

BS Condition A

BS Condition B

BS Condition C

BS Condition U

Rooted crown spread

BS Condition not protection areas

Tree to be removed for development

DRAWING NO. J48.23/02
Scale: 1:200 at A3
Added to by: NL
03/02/2014