Broad Oak Tree Consultants Limited
Laurel House, Burwash Road, Broad Oak, Heathfield, East Sussex
TN21 8SS [redacted]

ARBORICULTURAL IMPLICATIONS ASSESSMENT FOR PROPOSED 5 HOUSE RESIDENTIAL REDEVELOPMENT

AT

MORELANDS
ARUNDEL ROAD
FONTWELL
WALBERTON
ARUNDEL
BN18 0SB

by

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ARUN DISTRICT COUNCIL WA/42/22/PL

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1. INTRODUCTION

1.1 Broad Oak Tree Consultants Ltd. received instructions to undertake an inspection of trees located on and immediately adjacent to the site referred to as Morelands, Arundel Road, Fontwell, Walberton, Arundel, BN18 0SB. The purpose of the inspection was to produce a base inventory of the tree stock and an Arboricultural Implications Assessment of redevelopment proposals.

1.2 The proposals are for the demolition of the existing dwelling and outbuildings and their replacement with five detached houses with parking and private gardens. The existing access drive will be reutilised and upgraded. Details of the proposals will have been submitted by Krona Design and DJM Town Planning.

1.3 The trees were inspected in December 2021 by Tim Laddiman, BSc.(Hons) M.I.C.For. M.Arbor.A., Chartered Arboriculturist and Principal Consultant of Broad Oak Tree Consultants Ltd.

1.4 At the time of reporting it is understood that none of the trees on the site are covered by a Tree Preservation Order and that the site is not located within a Conservation Area.

2. GENERAL SITE DESCRIPTION

2.1 Morelands is a detached bungalow occupying a relatively level, roughly square plot set back from Arundel Road on its south side. The property is accessed via a surfaced track running parallel with The Ridings to the west, separated by hedging. The site is surrounded by fields to the east, south and west, with a residential property to the north. The boundaries have highly variable age and maintenance regime hedges of deciduous and evergreen species.

2.2 Areas of lawn surround the bungalow, with scattered young trees to the south and west.

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”.

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4.2 The tree survey followed the numbered sequence from T1-T29 inclusive. Tree numbers, together with BS recommended colour coding of condition, have been added to the Tree Constraints Plan, our drawing no. J61.19/01 Rev. B 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. Separate detailed tree survey sheets are 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.

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6. RESULTS OF TREE INSPECTIONS

6.1 A total of 29 individual trees and linear groups/hedges were inspected, ranging from young, self seeded Field Maple and planted hedging of less than 15 years of age, through to mature overgrown Hawthorn hedge elements of upto 100 years of age. Most of the trees/groups represent hedging elements or have self seeded within hedge alignments over time.

6.2 T16 Common Oak is a developing feature tree with long term potential. The developing Ash T1 and T23 are considered to have only a short term presence as early signs of Ash Dieback are present. If confirmed they are likely to be dead or in a very poor state within ten years. Due to the time of year and possible early stage of Ash Dieback the trees have been given a BS category C (10-20 years life expectancy). However if Ash Dieback is confirmed this would reduce to a BS category U (<10 years life expectancy).

6.3 The various former hedging elements along the east boundary are in varying degrees of health but are considered retainable and could be reduced or layered back into a formal hedge, if so desired. Similarly the overgrown hedging (G25 and G26) could be retopped to make it more manageable.

6.4 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	4, 16, 29	3
C	1, 2, G3, 5, 7, 9, G10, 13, 14, G17, 18, 19, G20, 21, G22, 23, G24, G26, 27, 28	20
C/U	G11	1
U	6, 8, 12, 15, 25	5
	TOTAL	**29**

6.5 ***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 C/U Trees that would be included in category C but have structural faults, areas of decay, etc. that require more detailed investigations or climbing inspections to ascertain whether or not they can be safely retained. Groups that include dead/dying/dangerous individuals.

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 in Appendix 3 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.

8. REDEVELOPMENT PROPOSALS

8.1 The proposals are for the demolition of the existing dwelling and outbuildings and their replacement with five detached houses with parking and private gardens. The existing access drive will be reutilised and upgraded. Details of the proposals will have been submitted by Krona Design and DJM Town Planning.

8.2 The supplied Krona Design "Development Plan and Landscaping", drawing no. A.002 Rev. E has been used as the base for the Broad Oak Tree Consultants Ltd. Tree Protection Plan, drawing no. J61.19/03 Rev. A in Appendix 4. This indicates measures to protect retained trees in accordance with BS5837:2012 requirements.

9. TREE SURGERY REQUIREMENTS

9.1 To provide appropriate separation from proposed buildings and around boundaries the following tree works are recommended. These comprise typical maintenance works and should not represent a constraint to the proposals.

Tree No.	Species	Works recommended
T1	Ash	Raise crown over site to 4m ground clearance.
G3	Cherry Laurel	Cut back crowns to S. to boundary. Top at 2.5m if within ownership.
G17	Portugal Laurel	Cut back crown to N. to boundary. Top at 2.5m if within ownership.
G22	Field Maple, Hawthorn, Hazel	Cut back crowns to E. to boundary. Top at 2m if within ownership.
T23	Ash	Raise crown base to 4m.

9.2 All tree work should be carried out by a competent tree surgeon to comply with BS3998:2010 "Tree Work - Recommendations".

9.3 All trees recommended for tree surgery works should be checked for the presence of bats or nesting birds prior to works commencing. Disturbance to bats or nesting birds could contravene the Wildlife and Countryside Act 1981 and result in prosecution.

10. POTENTIAL IMPACTS OF PROPOSALS ON TREES

10.1 No trees require removal for the proposed redevelopment to proceed.

10.2 No tree RPAs are compromised by any of the proposed five unit footprints.

10.3 Only the cycle stores to Units A1 and A2 are located within the RPA of T9. These can be built to a no dig (hand tools turf removal only) design to avoid causing near surface root damage. Installation of boundary fences to Unit A2 will also have a minimal impact, with post holes excavated to the minimum size necessary by hand tools/auger.

10.4 Overall the proposed five units will not have a negative impact on any retained trees.

10.5 Upgrading of the existing access drive will need to be undertaken with care to avoid damaging the root systems of the trees and hedges along its length. Any localised width increase will need to be formed by building up existing levels. Edging along the western edge will need to be formed by pinning/post retention, rather than concreted haunching. Removal of surface grass, loose material and soil will need to be undertaken by hand tools only.

10.6 For the duration of the demolition and construction the existing drive will provide an appropriate load bearing surface for machinery and vehicles without causing detrimental compaction.

11. TREE PROTECTION MEASURES – FENCING

11.1 *Location of fencing*

11.1.1 The Tree Protection Plan indicates the proposed location of protective fencing based on the calculated tree protection areas and space available.

11.2 *Design of fencing*

11.2.1 The protective fencing is to be constructed of scaffold uprights driven into the ground to a minimum depth of 0.6m and at no greater than 3m spacing. Uprights to be braced with angled scaffold poles and anchors. On to the uprights weldmesh panels such as "Heras" or a similar product will be securely mounted with all weather notices attached to every 5th panel reading "Keep Out – Protected Area". The fencing will form enclosed areas to which no access will be allowed. This design of fencing is considered appropriate to the site and scale of redevelopment proposed.

11.2.2 Examples of the fencing specification and signage required are included in Appendix 5.

11.3 *Timing of fencing*

11.3.1 Protective fencing is to be erected prior to commencement of demolition works and remain in place until completion of construction. The location and suitability of the fencing can be confirmed to the local authority by an arboricultural consultant prior to commencement of construction. Any tree surgery works will need to be undertaken prior to fence installation to minimise risks to operatives. All tree surgeons' vehicles will be kept outside the indicated protection zones utilising existing areas of hard standing and drive.

11.4 *Additional precautions*

11.4.1 Potentially injurious materials such as fuels, oils, chemicals and cement will be stored at least 20m from any stem, or in a bunded storage vessel. No fires will be lit within 5m of the drip line of any retained tree. No level changes will occur, either raising or lowering within the protected areas. A list of these additional precautions are included on the Tree Protection Plan.

12. GROUND PROTECTION MEASURES

12.1 In the area to the north side of Unit A1 within the root protection zone of G3 Cherry Laurel where access around the new building footprint will be required during construction, specific ground protection measures will be required. For machinery access these should comprise interlocking, specifically designed load bearing temporary roadway plates, commonly made of steel or specialised plastics. They will minimise any risk of compaction whilst providing a running platform for machinery.

12.2 Where foot access only is required, ground protection measures should comprise a base layer of geotextile, over which 100mm of woodchip will be laid, topped by side butting scaffold boards or non-slip surfaced minimum 12mm thick plywood or other boards.

12.3 Installation of the ground protection measures should take place at the same time as the protective fencing, prior to demolition, and remain in place until completion of construction.

13. SITE OPERATIONS AND MATERIALS STORAGE

13.1 Details of site zoning cannot be specified by an Arboriculturalist as these are commonly determined by contractors on the basis of Health & Safety Assessments. However, the robust protective fencing will define the remaining site space available for storage and operations.

14. SERVICES/DRAINAGE/SOAKAWAYS

14.1 Based on the supplied layout, any new services, drainage or soakaway alignments should be outside root protection areas. Where possible the existing runs currently serving the building will be reused. If incursion into the protective areas of retained trees is unavoidable, then the routing should be obtained either by hand tool excavation or air spade, supervised by an arboricultural consultant. Any works within the protective areas will need to be undertaken to the requirements of NJUG Volume 4 "Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees".

15. ARBORICULTURAL METHOD STATEMENT

15.1 A separate Arboricultural Method Statement is not considered necessary for this site. Risks to retained trees are minimal with robust tree protection measures proposed. Details of the protective fencing and ground protection specification, timing and location are indicated on the Tree Protection Plan, which can be referred to in a specifically worded condition.

16. SUMMARY

16.1 No trees require removal for the proposed five unit redevelopment.

16.2 No tree RPAs are adversely impacted by the proposed redevelopment.

16.3 Minor tree surgery works are required but these represent typical maintenance operations.

16.4 Overall there are no adverse impacts on trees and no grounds for a refusal based on arboricultural matters.

16.5 Robust tree protection measures are proposed in accordance with BS5837:2012 requirements.

16.6 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 demolition and construction works.

Tim Laddiman
Chartered Arboriculturist
Broad Oak Tree Consultants Ltd.

APPENDIX 1

CASCADE CHART FOR TREE QUALITY ASSESSMENT

<table>
<tr><th colspan="5">TREES FOR REMOVAL</th></tr>
<tr><td>Category and definition</td><td colspan="3">Criteria</td><td>Identification on plan</td></tr>
<tr><td>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</td><td colspan="3">• 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.)</td><td>DARK RED</td></tr>
<tr><th colspan="5">TREES TO BE CONSIDERED FOR RETENTION</th></tr>
<tr><td rowspan="2">Category and definition</td><td colspan="3">Criteria - Subcategories</td><td rowspan="2">Identification on plan</td></tr>
<tr><td>1. Mainly arboricultural values</td><td>2. Mainly landscape values</td><td>3. Mainly cultural values, including conservation</td></tr>
<tr><td>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)</td><td>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)</td><td>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)</td><td>Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)</td><td>LIGHT GREEN</td></tr>
<tr><td>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)</td><td>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)</td><td>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</td><td>Trees with clearly identifiable conservation or other cultural benefits</td><td>MID BLUE</td></tr>
<tr><td rowspan="2">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.</td><td>Trees not qualifying in higher categories</td><td>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.</td><td>Trees with very limited conservation or other cultural benefits</td><td rowspan="2">GREY</td></tr>
<tr><td colspan="3">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</td></tr>
</table>

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

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							
1	Ash	13	Multi	c500	5	c6	5	7	M	3+	Poor	10-20	C1	Multi stemmed from ground level. One dominant stem. Part ivy clad. Minor dieback. Located in adjoining garden. Possibly Ash Dieback.	
2	Prunus Sp.	7	Multi	c150	c3	4	2	0.5	SM	1+	Unconfirmed	20-40	C2	Heavily crowded. Multi stemmed near ground level. Located in adjoining garden.	
G3	Cherry Laurel	<4	Multi	<250	<2	<2	<1.5	<2	SM	0+	Good	40+	C2	Maintained large hedge.	
4	Field Maple	13	1	c350	c4	c5	4	3	SM	3+	Unconfirmed	20-40	B2	Located in adjoining land therefore no basal inspection.	
5	Field Maple	8	Multi	230	3.5	c4	3.5	4	Y	0+	Fair	20-40	C2	Crowded. Multi stemmed near ground level. Part overtopped.	
6	Hawthorn	9	2	350	3	c2	2.5	3.5	M	3.6+	Poor	<10	U	Twin stemmed from under 1m. Thin crown. Dieback.	
7	Holly	7	1	c90	3	c3	3	3	Y	0+	Good	40+	C2	Crowded. Part overtopped.	
8	Hawthorn	8	Multi	350	4	c4	4	3	M	1+	Poor	<10	U	Multi stemmed near ground level. Thinning crown.	

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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							
9	Hawthorn	7	Multi	350	1	c4	4	3	M	4+	Poor	10-20	C1	Crowded. Multi stemmed from under 1m. Minor thinning.	
G10	Hawthorn	<7	Multi	<250	<2	<3	<3	<3	M	0+	Fair	10-20	C2	Overgrown hedge elements.	
G11	Hawthorn	<10	1/Multi	<350	<3	<4	<3	<4	M	3+	Variable	<10-20	C/U1	Overgrown hedge elements. Southern stem extensive dieback.	
12	Hawthorn	6	1	270	0	c4	6	0	M	3+	Poor	<10	U	Lean to SE. Decay in lower stem wound to N. at 0.6m and at 3m to NW.	
13	Hawthorn	9	1	310	3.5	c3	2.5	3.5	M	3+	Fair	10-20	C1	Between fences. Ownership unclear. Twin stemmed at 2m. Multi stemmed at under 3m. Minor dieback.	
14	Hawthorn	9	1	270	2.5	c4	1	1	M	3+	Poor	10-20	C1	Lean to NE. Minor dieback. Decayed wound to E. at 1.2m.	
15	Hawthorn	9	2	330	2	c4	c3	2.5	M	1.2+	Poor	<10	U	Twin stemmed at 1m. Dieback in crown.	

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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							
16	Common Oak	14	2	390	4.5	4.5	c5	4	Y	3+	Good	40+	B2	Minor deadwood. Ascending crown. Crown raised in past. Twin stemmed at 4m.	
G17	Portugal Laurel	<5	Multi	<100	<2	<2	<2	<2	Y	0+	Good	20-40	C2	Topped at under 1m in past. Variable height.	
18	Wild Cherry	10	1	c300	3.5	6	c6	3	Y	3.5+	Unconfirmed	20-40	C2	Previously crowded.	
19	Wild Cherry	7	1	170	1	1.5	c3	4	Y	3+	Fair	40+	C2	Crowded. Leaning SW. Twin stemmed at ground level.	
G20	2no. Field Maple	<9	1	<200	<2	0	<3.5	<5	Y	2+	Fair	20-40	C2	Previously heavily crowded. Leaning W.	
21	Field Maple	7	1	180	3	1	1.5	3	Y	2+	Fair	20-40	C2	Previously heavily crowded. Leaning NW.	
G22	Field Maple, Hawthorn, Hazel	<6	Multi	<120	<1	<2.5	<1	<3	Y	0+	Good	40+	C2	Overgrown young hedge. Variable height.	
23	Ash	13	1	310	5.5	4.5	3.5	c5	Y	2+	Unconfirmed	10-20	C1	Part ivy clad into crown. Possibly Ash Dieback.	
G24	Privet	<3	Multi	<100	1	1	1	1	M	0+	Good	40+	C2	Maintained hedge.	

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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							
25	Monterey Cypress	17	1	c400	3	c6	6	c4	M	5+	Poor	<10	U	Three stems from under 3.5m with weak unions. N. stem a 2m stub. Deadwood and dieback. Corineum canker.	
G26	Privet	<5	Multi	<120	<1	<1	<1	<1.5	M	0+	Good	20-40	C2	Topped hedge.	
27	Ash	6	Multi	c150	2	2.5	2	1.5	Y	1.5+	Fair	10-20	C2	Multi stemmed near ground level. Power lines through crown.	
28	Hawthorn	7	1	c250	4	2.5	3	c4	M	3+	Unconfirmed	10-20	C2	Heavily ivy clad therefore no basal inspection. Minor dieback.	
29	Sycamore	12	Multi	c500	3.5	4	5	4	SM	4+	Unconfirmed	20-40	B2	Multi stemmed near ground level. Ivy clad therefore no basal inspection. Multi stemmed at under 3m. Open crown of long slender limbs. Power lines in crown.	

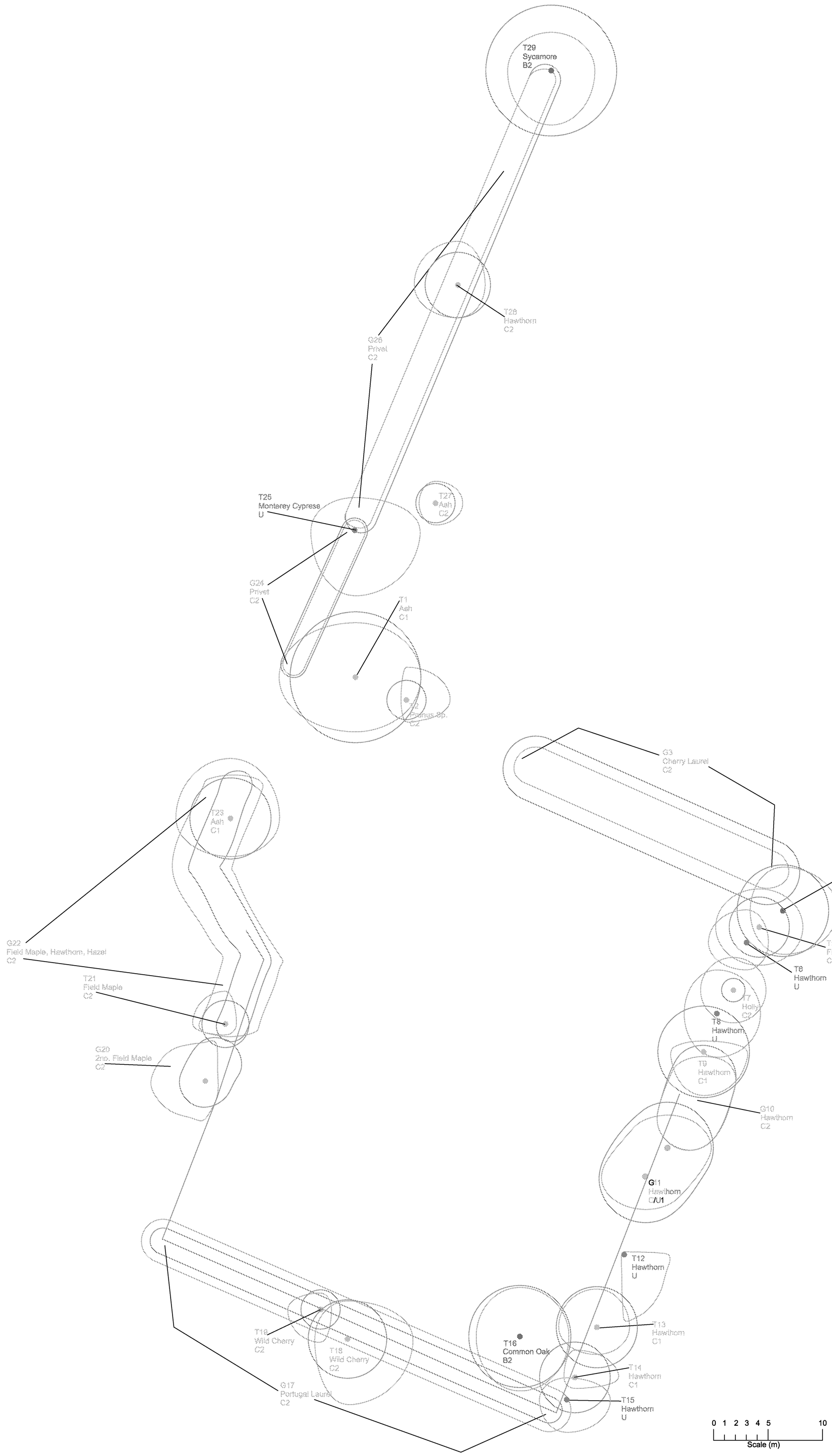
APPENDIX 2

Broad Oak Tree Consultants Ltd
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MORELANDS
ARUNDEL ROAD
FONTWELL
WALBERTON
ARUNDEL BN18 0SB

TREE CONSTRAINTS PLAN



T1 - T29 Tree numbers

BS Category of Condition

- BS Condition A
- BS Condition B
- BS Condition C
- BS Condition U
- Crown spread
- BS Calculated root 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. 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.

DRAWING NO. J61.19/01 Rev B

Scale: 1:200 at A1

Added to by: NL

03/01/2022

ARUN DISTRICT COUNCIL WA/42/22/PL

APPENDIX 3

TABLE OF BS CALCULATED ROOT PROTECTION AREAS (RPAs)
AT
MORELANDS, ARUNDEL ROAD, FONTWELL, WALBERTON, ARUNDEL, BN18 0SB

Tree no.	Species	BS Category	Stem diameter or calculated equivalent (mm.)	BS calc. radial equiv. root protection area (m.)	BS calc. total RPA (m^2)
1	Ash	C1	c.500	c.6	c.113
2	Prunus Sp.	C2	c.150	c.1.8	c.10
G3	Cherry Laurel	C2	<250	<3	<28
4	Field Maple	B2	c.350	c.4.2	c.55
5	Field Maple	C2	230	2.8	25
6	Hawthorn	U	-	-	-
7	Holly	C2	c.90	c.1.1	c.4
8	Hawthorn	U	-	-	-
9	Hawthorn	C1	350	4.2	55
G10	Hawthorn	C2	<250	<3	<28
G11	Hawthorn	C/U1	<350	<4.2	<55
12	Hawthorn	U	-	-	-
13	Hawthorn	C1	310	3.7	43
14	Hawthorn	C1	270	3.2	32
15	Hawthorn	U	-	-	-
16	Common Oak	B2	390	4.7	69
G17	Portugal Laurel	C2	<100	<1.2	<5
18	Wild Cherry	C2	c.300	c.3.6	c.41
19	Wild Cherry	C2	170	2	13
G20	2no. Field Maple	C2	<200	<2.4	<18
21	Field Maple	C2	180	2.2	15
G22	Field Maple, Hawthorn, Hazel	C2	<120	<1.4	<6
23	Ash	C1	310	3.7	43
G24	Privet	C2	<100	<1.2	<5
25	Monterey Cypress	U	-	-	-
G26	Privet	C2	<120	<1.4	<6
27	Ash	C2	c.150	c.1.8	c.10
28	Hawthorn	C2	c.250	c.3	c.28
29	Sycamore	B2	c.500	c.6	c.113

* RPA capped at 15m radius

J61.19
September 2021
Revised December 2021

APPENDIX 4

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MORELANDS
ARUNDEL ROAD
FONTWELL
WALBERTON
ARUNDEL BN18 0SB

TREE PROTECTION PLAN

T1 - T29 Tree numbers

BS Category of Condition

- BS Condition A
- BS Condition B
- BS Condition C
- BS Condition U
- Crown spread
- BS Calculated root protection areas
- Protective fencing location
- Ground protection

TREE PROTECTION INFORMATION

Protective fencing and ground protection measures to be installed at locations specified prior to commencement of any demolition works.

Protective fencing to comprise scaffold uprights driven into the ground to 60cm. depth at no more than 3m. spacing. Upright to be braced within high usage/construction/demolition areas. Weldmesh panels to be securely fixed to uprights to produce a continuous barrier. Waterproof signs to be attached to every 5th panel declaring "TREE ROOT PROTECTION ZONE - KEEP OUT" or similar wording. Fencing to be constructed in accordance with fig. 2 or fig. 3 of section 6.2 of BS5837:2012.

Ground protection measures to comprise a single thickness of side butting scaffold boards over a 100mm. compressible layer laid onto a geotextile. For machinery access, interlocking metal/plastic road plates will need to be used.

Buildings in proximity to protective fencing areas to be demolished by machinery pulling walls inwards onto the building footprint.

The fenced protection zones around retained trees, hedges and shrubbery are to be regarded as sacrosanct and none of the following are to occur within these areas:

- Storage or disposal of any soil, building materials, machinery, fuel or waste residues of any description.

- Siting of any temporary structures of any description including site office/sales buildings, temporary car parking facilities, porta-loos, storage compounds or temporary hard standing areas.

- Excavations, soil/turf stripping, raising/lowering of existing levels or alterations to the existing natural surfaces/ground conditions of any other description.

- Location of temporary drainage, water supplies or any other temporary underground services.

- No use, movement or parking of any machinery or vehicles of any description.

- Additionally, no fires shall be lit within 20m. of the trunks of any trees or the centre line of any hedgerow to be retained.

All services to be installed to the requirements of NJUG Volume 4 "Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees". Any runs within retained tree root protection areas to either be bored/moled or any hand excavation to be supervised by the Arboricultural Consultant

ORCHARD CRES

TCB

New access

T29 Sycamore B2

DRIVE Private Car

7.5m RAD

3.5m

THE RIDINGS

T28 Hawthorn C2

G26 Privet C2

No protection measures along drive necessary. Any build up and edging to be undertaken with appropriate precautions to avoid root damage. Edging to be pinned inplace, not concreted. Any removal of grass/turf to be by hand tools only

T25 Monterey Cypress U

T27 Ash C2

G24 Privet C2

T1 Ash C1

The access road to be widened to minimum of 3.5m wide and built to adoptable standards (NO D/G CONSTRUCTION METHODS)

Fire truck turning circle

Existing surfacing

SOFT LANDSCAPING

Existing building foundations

G3 Cherry Laurel C2

T23 Ash C1

Property- B

Bin

T4 Field Maple B2

T5 Field Maple C2

T6 Hawthorn U

Property- A1

Property- A2

T7 Holly C2

T8 Hawthorn C1

G22 Field Maple, Hawthorn, Hazel C2

T21 Field Maple C2

G20 2no. Field Maple C2

Proposed turning head for refuse truck

Foot access only for cycle store and fencing installation

G10 Hawthorn C2

Property- C

Property- A3

G11 Hawthorn C/U1

T12 Hawthorn U

T13 Hawthorn C1

T19 Wild Cherry C2

T18 Wild Cherry C2

T16 Common Oak B2

T14 Hawthorn C1

T15 Hawthorn U

G17 Portugal Laurel C2

Fencing around existing cabin

North

Scheme 1 Legend

- Garden
- Paved Patio
- Wildlife Habitat
- Electric charging point - 1 per dwelling and 1 for visitor space
- Retained trees and hedgerow
- Existing waste
- New waste

0 1 2 3 4 5 10
Scale (m)

DRAWING NO. J61.19/03 Rev A

Scale: 1:200 at A1

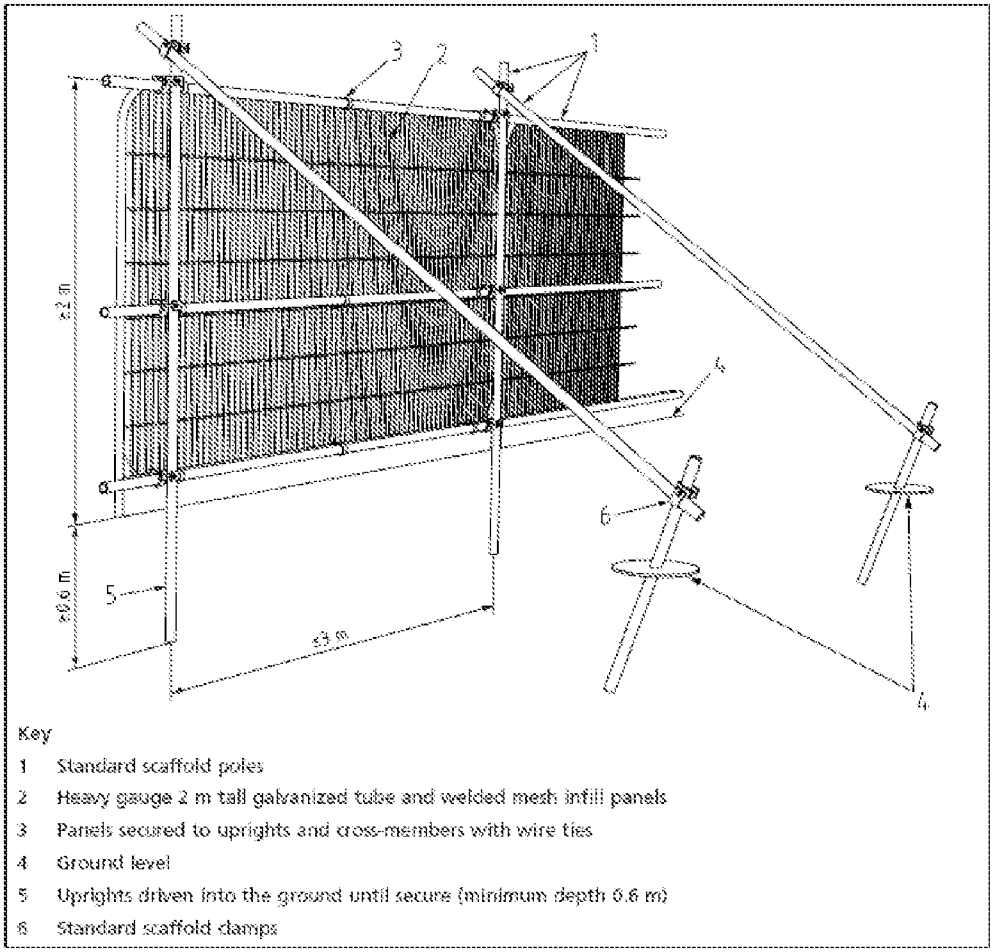
Added to by: NL

12/04/2022

APPENDIX 5

BS5837:2012: FENCING SPECIFICATIONS

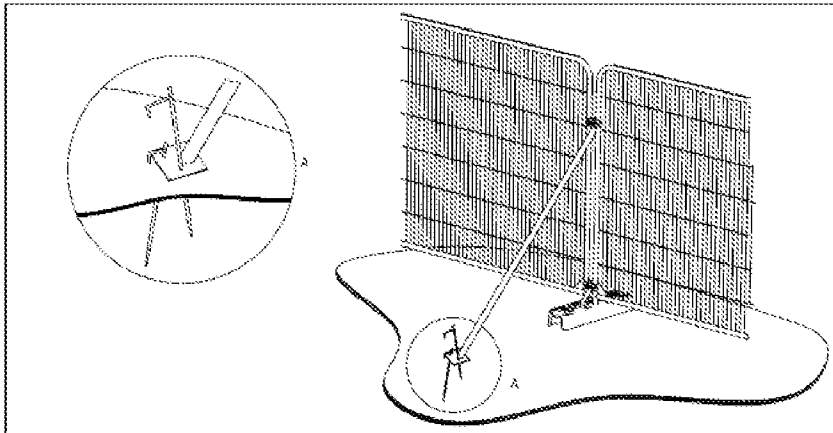
Figure 2 Default specification for protective barrier



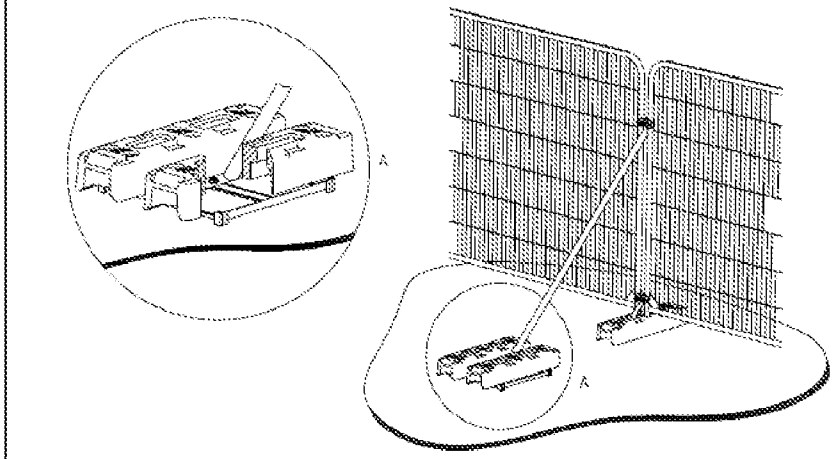
Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

Figure 3 Examples of above-ground stabilizing systems

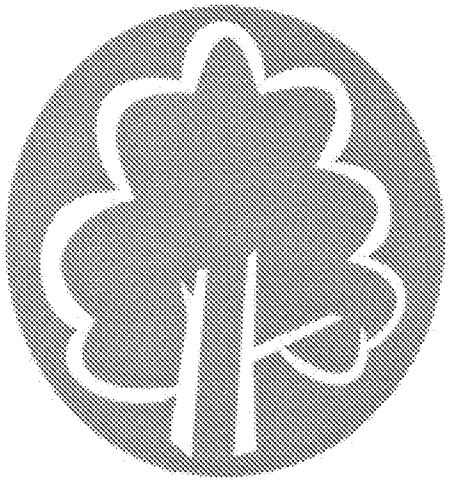


a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

EXAMPLE OF FENCING SIGNAGE



PROTECTIVE FENCING. THIS FENCING MUST BE MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND DRAWINGS FOR THIS DEVELOPMENT.



TREE PROTECTION AREA
KEEP OUT !

(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A TREE PRESERVATION ORDER.
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION

ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY