

[REDACTED]

From: Stuart Corbey
Sent: 17 April 2019 13:37
To: Planning.Responses
Subject: FW: WA/75/18/OUT - Land to the rear of 7 The Meadows, Walberton.

Please add info as Tree Survey

From: Adrian Wright [REDACTED]
Sent: 16 April 2019 13:24
To: Stuart Corbey
Subject: Re: WA/75/18/OUT - Land to the rear of 7 The Meadows, Walberton.

Could you please confirm receipt of tree report and that will be forwarded to Mark in preparation for June meeting.

On 5 Apr 2019, at 10:37, Stuart Corbey <Stuart.Corbey@arun.gov.uk> wrote:

Hi Adrian,

Close of June 5th committee agenda is May 8th so I will be needing your information as soon as possible for Mark from trees to review and give his professional view on the Tree status of the site.

Thanks

Stuart Corbey | Senior Planning Officer, Planning Department, Directorate of Place, [Arun District Council](#) | Location: First Floor, Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF

Internal: 37784 | External: +44 (0) 1903 737500 Ext: 37784 | E-mail: stuart.corbey@arun.gov.uk

Please note this information is given without prejudice and represents the informal view of the officer and not an official opinion of Arun District Council.

From: lucky games [REDACTED]
Sent: 05 April 2019 08:35
To: Stuart Corbey
Subject: Re: WA/75/18/OUT - Land to the rear of 7 The Meadows, Walberton.

Hi Stuart

I agree to the extension but at no time during our communication have you explained the need to submit the report a month before the meeting.

Even when we spoke this week on the phone you did not mention it?

I don't know the procedures and would appreciate explanations about how these things work
Adrian

Sent from my iPhone

On 4 Apr 2019, at 17:38, Stuart Corbey <Stuart.Corbey@arun.gov.uk> wrote:

Hi Adrian,

Following your previous emails I just wanted to clarify that we had asked for the Tree detail before **7th March** in order for us to consider before making the April agenda.

We have no committee in May 2019 so the next **earliest committee is 5th June**. An **Extension of time to 7th June 2019** would be appreciate to meet this deadline. In addition the earliest we have your Tree detail the quicker we will know the impact on trees from our tree expert Mark.

Thanks very much.

Stuart Corbey | Senior Planning Officer, Planning Department, Directorate of Place, [Arun District Council](#) | Location: First Floor , Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF
Internal: 37784 | External: +44 (0) 1903 737500 Ext: 37784 | E-mail: stuart.corbey@arun.gov.uk
Please note this information is given without prejudice and represents the informal view of the officer and not an official opinion of Arun District Council.

From: Stuart Corbey
Sent: 12 February 2019 12:17
To: 'Adrian Wright'
Cc: Planning.Responses
Subject: FW: WA/75/18/OUT - Land to the rear of 7 The Meadows, Walberton.

Adrian,

Further to our telephone conversation of the 11th February 2019. I would like to highlight the point raised in the conversation.

The officers have made note of the requirement to provide a certain level of additional information which is required to enable a full and fair assessment of the development of the site for a residential property and its baring impact on trees within and outside of the site.

It is recommended by the Councils Tree Officer that a base line tree schedule and tree protection plan should be provided at this stage.

Please see the Tree officer comments of 11th December 2019 for a full explanation of their expectations. This may be helpful for when you instruct a Tree specialist to initiate the work.

With this in mind, I would like to invite you to submit this information by no later than **7th March 2019** so I can get a further comment from our tree officer before

trying to get the assessment finalised and taken to April 10th Committee meeting for consideration and decision.

If you could confirm receipt of this email and agree to an extension of time to decision un until 12th April 2018

I look forward to your response.

Kind regards

Stuart Corbey | Senior Planning Officer, Planning Department, Directorate of Place, Arun District Council | Location: First Floor , Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF

Internal: 37784 | External: +44 (0) 1903 737500 Ext: 37784 | E-mail: stuart.corbey@arun.gov.uk

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From: Stuart Corbey
Sent: 11 February 2019 10:32
To: 'Adrian Wright'
Subject: RE: WA/75/18/OUT - Land to the rear of 7 The Meadows, Walberton.

Mr Wright,

Further to my answer phone message of today. Please can you call me when you have a chance so I can highlight the councils position on the above application, and cover the options taking the application forward.

Kind regards

Stuart Corbey | Senior Planning Officer, Planning Department, Directorate of Place, Arun District Council | Location: First Floor , Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF

Internal: 37784 | External: +44 (0) 1903 737500 Ext: 37784 | E-mail: stuart.corbey@arun.gov.uk

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From: Adrian Wright [REDACTED]
Sent: 07 January 2019 19:08
To: Stuart Corbey
Subject: Re: WA/75/18/OUT - Land to the rear of 7 The Meadows, Walberton.

Thank you for your email.

I am replying to confirm confirmation of an extension of time up to 15th February 2019

Kind regards

Adrian Wright

On 7 Jan 2019, at 16:06, Stuart Corbey
<Stuart.Corbey@arun.gov.uk> wrote:

Mr A Wright,

Further to our telephone conversation last month we had been awaiting tree comments from our in house specialist before progressing this application.

The application now lies with my Team Leader Juan Baez who will determine how to progress with this application.

In preparation of the application going to February planning committee please can you confirm an extension of time to the application decision up until 15th February 2019.

If you have an questions please contact Juan directly.

Kind regards

Stuart Corbey | Senior Planning Officer, Planning Department, Directorate of Place, Arun District Council | Location: First Floor , Arun Civic Centre, Maltravers Road, Littlehampton, BN17 5LF
Internal: 37784 | External: +44 (0) 1903 737500 Ext: 37784 | E-mail: stuart.corbey@arun.gov.uk
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ARBORICULTURAL REPORT

7 The Meadows, Walberton,
Arundel BN18 0PB

Prepared by

Jonathan Rodwell Cert Arb L4(ABC), TechArborA

April 2019





Beechdown Arboriculture Limited
Club Cottage, Top Road, Slindon
Arundel, West Sussex BN18 0RP
Tel/Fax: 01243 814740
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development 7- Increased area for potential development. 8 - Site guidance
note 9: Installing/upgrading surfacing in root protection areas

Beechdown ref: B/0216/19

7 The Meadows -- BS 5837 tree survey/report -- April 2019

VAT Registration no. 387 1140 26.

Registered Office as above. Registered in England & Wales no. 5355859. Directors: Jonathan Rodwell (MR) (arb). Catherine Bavington (ACMA).

SUMMARY

- » **A survey was undertaken that identified and assessed the quality of 17 trees.**
- » **An area for potential development beyond the root protection areas of category A, B and C trees was outlined.**

1.0 INTRODUCTION

1.1 I have received instruction from Mr and Mrs Wright to provide arboricultural consultancy services in relation to trees at 7 The Meadows, Walberton, Arundel BN18 0PB.

1.2 The purpose of the instruction was to:

- » **Undertake a ground level tree survey;**
- » **assess the quality of the surveyed trees;**
- » **advise on the potential developable area in relation to trees to inform planning feasibility studies and design options.**

1.3 The survey was conducted and the report prepared with reference to the guidelines detailed in BS 5837:2012 "Trees in relation to design, demolition and construction – Recommendations" and according to good arboricultural practice.

1.4 Contents of the report are exclusively for the use of the client; liability does not extend to any third party without our written consent.

2.0 DOCUMENTS PROVIDED

2.1 No documents provided.

3.0 SURVEY FORMAT

3.1 Trees included in the survey were individuals or groups with a stem diameter, at 1.5m high, greater than 75mm. The trees were inspected from the ground only and no specialist decay detection was undertaken. Trees were assessed from within the site or from public areas.

3.2 Data was recorded on a handheld computer, the trees plotted via GPS and their positions marked on the 1:400 @ A4 tree survey plan (**Appendix 4**).

- 3.3 A detailed tree survey sheet is shown at **Appendix 1** with an explanation of the terms and categories covered as **Appendix 2**.
- 3.4 The extent of the survey was limited to collecting sufficient data to identify a potential developable area based around the material constraints posed by trees worthy of retention. It was not a detailed tree hazard or risk assessment and, unless specified, no guarantee, expressed or implied, can be given regarding the safety of the trees or their suitability for safe long term retention.

4.0 GRADING CATEGORIES

- 4.1 The quality of the surveyed trees was assessed and they were categorised to reflect the criteria recommended in Table 1 of BS 5837:2012 as detailed at **Appendix 3**.
- 4.2 The following is a breakdown of the number of trees in each BS category:

Category U	1 tree
Category A	0 trees
Category B	9 trees
Category C	7 trees

5.0 STATUTORY CONTROLS

- 5.1 Consultation with the Local Planning Authority confirmed that the surveyed trees are not within a Conservation Area nor are they subject to a Tree Preservation Order.
- 5.2 Under Part 1 of the Wildlife and Countryside Act (1981), with only a few exceptions, it is an offence to intentionally take, damage or destroy the nest of any wild bird while the nest is in use or being built. Bat species are protected under Section 39 of the 1994 Conservation (Natural Habitats etc.) Regulations (as amended), the 1981 Wildlife and Countryside Act (as amended) and the 2000 Countryside and Rights of Way Act. It is illegal to damage or destroy any bat roost, whether occupied or not, or disturb or harm a bat. Further specialist investigation may be required before undertaking any recommended works.

6.0 SITE DESCRIPTION

- 6.1 7 The Meadows is a detached two-storey dwelling with a conservatory and separate detached garage set in broadly level grounds of around 1500m² (**Fig.1**). A paved terrace, surrounded by uniform, clipped

Leyland cypress pillars extends from the south-east elevation of the dwelling while beds and borders of perennial and herbaceous plants run parallel to the boundary fences and through the middle of the back garden. Access to the property is via a concrete driveway from The Meadows.



Fig. 1

6.2 7 The Meadows is in a semi-rural setting with surrounding trees predominantly in domestic settings and as roadside trees. The wider landscape of open farmland includes trees within small copses and in hedgerows along field boundaries.

6.3 The site geology is London Clay Formation clay, silt and sand sedimentary bedrock while the superficial geology is described by the National Soils Resources Institute as a freely draining, slightly acid, loamy soil. No detailed analysis of the soil structure, composition or pH was undertaken and details from this report should **not** be used for calculating foundation depth. Foundation depth should be determined by the architect or a structural engineer and with reference to NHBC Chapter 4.2 – Building near trees.

7.0 TREE SURVEY

- 7.1 Surveyed trees consisted of nine within the site and eight beyond the site perimeter. Trees and shrubs too small to be recorded or beyond influence of any potential development included a dense and informal ivy and bramble covered border of *Choisya*, elder, *Osmanthus*, holly, camellia, honeysuckle, jasmine, *Viburnum* and *Eleagnus* along the southern boundary and *Euonymus*, *Cytisus*, bamboo, spotted laurel, box, plums, holly and *Pittosporum* in beds and borders throughout the garden. An old cypress stump in the lawn was midway between T4 and T8.

8.0 TREE APPRAISAL

- 8.1 Individual tree details and comments are listed in the appended BS 5837 survey schedule. Details of the trees that I consider require further explanation or comment are noted below.
- ✦ **Leyland cypress** (T3) – a mature tree with a dense, multi-stemmed, ivy-covered crown that has been pruned to restrict its height.
 - ✦ **Norway maple** (T5) – a mature multi-stemmed tree maintained as a pollard with a low framework of scaffold stems and small-diameter regrowth from dormant buds at the pollard points.
 - ✦ **Cherry** (T6) – an ivy-covered tree leaning heavily to the south-east.
 - ✦ **Monterey cypress** (T13) – a mature tree in the grounds of Coppice House; a fracture through the main union at 1.5m to 1.8m was noted, movement of the fracture was both visible and audible and natural bracing, in the form of low crossing branches, was probably preventing immediate stem failure.
 - ✦ **Ash** (T15-T17) – regularly pollarded trees with good regrowth from pollard points; symptoms of bacterial canker of ash (*Pseudomonas savastanoi* pv. *fraxini*) are increasingly more severe from T15 to T17.

9.0 DESIGN LAYOUT AND DEVELOPMENT POTENTIAL

- 9.1 The root protection area (RPA) calculations have been produced using the information gathered from the tree survey and section 4.6.1 of BS 5837:2012. This indicates the RPA in m² and the minimum required all round radial distances for rooting zone protection and allows a view to be taken as to whether the trees can be retained safely without undue damage to their root systems. The calculations are detailed in the appended survey schedule and the initial dimensions marked on the 1:400 @ A4 root protection area and shade plan (**Appendix 5**).
- 9.2 No excavation, changes in soil level, construction or routing of service runs should take place within the RPAs of retained trees; ideally a 2m

working margin should be maintained between the RPAs and any proposed development to allow room for construction activity.

- 9.3 Consideration should be given to the effects that the current tree size, future growth potential, shade levels and leaf and fruit nuisance may have on the development proposal. Shading, restricted views and potential tree size may all increase pressure for future tree removal; building design that aligns windows parallel or tangentially to retained trees can reduce potential conflicts.
- 9.4 Tree height and crown spread measurements are detailed in the appended tree survey; the crown spread of the trees is indicated on the tree survey plan and the shadow pattern through the main part of the day is shown on the RPA and shade plan.
- 9.5 **Appendix 6** shows the nominal combined RPAs of category A, B and C trees and indicates an area beyond them which could be developed based on the removal of just one category U tree.
- 9.6 As a starting point this report identifies a potential area for development based around the constraints posed by all category A, B and C trees, however; a design that impacts upon category B and C trees shown on the plan may be acceptable if selected trees are not worthy of retention i.e. the increased developable area shown at **Appendix 7** based on the removal of just two trees (T7&T8). An arboricultural review of the site layout and design, along with an impact assessment, may mitigate justifiable tree removal or advise on technical solutions that allows tree retention and development to progress successfully.

10.0 COMMENT

- 10.1 Potential development at 7 The Meadows is likely to depend on permitted access via the driveway to Coppice House and into the north-east corner of the garden. The category C Monterey cypress (T13) has a significant structural defect in the form of a fractured union between the main stems; removal of this tree, with the consent of the tree owner, seems a natural starting point for access from the driveway and would provide sufficient room above ground for construction of a new access; however, excavation and construction of the new driveway will impact upon the combined RPA of the retained trees so use of no-dig construction hard-surfacing will have to be adopted.
- 10.2 Site guidance note 9: Installing/upgrading surfacing in root protection areas, provided by Barrell Tree Consultancy and shown at **Appendix 8**, gives a very good overview of how a no-dig construction driveway could be used to provide a new access to the back garden of 7 The

Meadows with little or no disturbance to the rooting environment of retained trees. A method statement providing specific details along with an arboricultural impact assessment and details of additional tree protection measures reflecting the finished design should accompany a planning application.

11.0 CONCLUSIONS

- » **A tree survey was undertaken, the quality of 17 trees was assessed, they were categorised to reflect the criteria recommended in BS 5837:2012 and an area for potential development was identified beyond the combined root protection area of category A, B and C trees.**
- » **Site layout should consider that no excavation, changes in soil level, construction or routing of service runs should take place within the RPAs of retained trees and that ideally a 2m working margin should be maintained between the RPAs and any proposed development to allow room for construction activity.**
- » **Building design should consider current and future growth potential of the trees particularly in relation to light levels to principle rooms and seasonal nuisance i.e. leaf fall.**
- » **An arboricultural impact assessment, method statement and tree protection plan in support of the final design may be required to accompany any planning application.**

12.0 DETAILS

- 12.1 Date of survey - 04.04.2019
- 12.2 Present at site visit - Jonathan Rodwell Cert Arb L4(ABC); TechArborA
- 12.3 Date of report - 09.04.2019

References

BSI British Standards (2012) *BS 5837:2012 Trees in relation to demolition and construction – Recommendations, Fourth (Present) Edition*. BSI

Barrell Tree Consultancy (2018) *Manual for managing trees on development sites v2.1 – site guidance note 9: installing/upgrading surfacing in root protection areas*

Jonathan Rodwell Cert Arb L4(ABC); TechArborA
Beechdown Arboriculture Ltd

9th April 2019

Beechdown ref: B/0216/19
7 The Meadows – BS 5837 tree survey/report – April 2019

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BS5837:2012 Tree Survey

Beechdown Arboriculture Ltd

Client: Mr and Mrs Wright
 Project: 7 The Meadows
 Survey Date: 04/04/2019
 Surveyor: Jonathan Rodwell

Club Cottage, Top Road
 Slindon
 Arundel
 West Sussex
 BN18 0RP
 Phone: 01243 814740

Tree and Tag No Species		Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations			Cat ERC
			No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment			
T1														
Plum <i>Prunus domestica</i>		8	1	255	N	2	3	M	A: 29.4 R: 3.05	Good	C: Fair S: Ivy B: Fair			C.1 20 to 40 yrs
T2														
Plum <i>Prunus domestica</i>		10	1	210	N	2.5	1.5	M	A: 20 R: 2.52	Good	C: Fair S: Fair B: Fair			B.1 20 to 40 yrs
T3														
Leyland Cypress <i>X Cupressocyparis leylandii</i>		11	5	441 (Eq)	N	3	3	M	A: 88.2 R: 5.29	Fair	C: Poor S: Ivy B: Fair	Ivy-covered dense multi-stemmed crown; pruned to restrict size.		C.1 10 to 20 yrs
T4														
Quince <i>Cydonia oblonga</i>		4.5	1	120	N	3	1.8	SM	A: 6.5 R: 1.43	Fair	C: Fair S: Ivy B: Fair			C.1 20 to 40 yrs
Age Classifications:		N	Newly planted	EM	Early Mature		Condition:		C	Crown	Stems:		Ø	Diameter
		Y	Young	M	Mature				S	Stem			(Eq)	Equivalent stem diameter using BS5837:2012 definition
		SM	Semi-mature	OM	Over Mature				B	Basal area				

Tree and Tag No Species		Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations		Cat ERC
			No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment		
T5													
Norway Maple <i>Acer platanoides</i>		7	5	643 (Eq)	N	4.5	2.5	M	A: 187.2 R: 7.71	Fair	C: Poor S: Ivy B: Fair	Ivy-covered multi-stemmed tree regularly pruned to maintain as pollard.	C.1 20 to 40 yrs
T6													
Wild Cherry <i>Prunus avium</i>		8.5	1	340	N	2.5	3	M	A: 52.3 R: 4.08	Fair	C: Poor S: Ivy B: Fair	Completely ivy-covered tree leaning heavily to the south-east.	C.1 10 to 20 yrs
T7													
Elder <i>Sambucas nigra</i>		7	3	215 (Eq)	N	2	1.5	M	A: 20.9 R: 2.57	Fair	C: Poor S: Ivy B: Fair		C.1 10 to 20 yrs
T8													
Corkscrew Willow <i>Salix matsudana 'Tortuosa'</i>		9.5	3	289 (Eq)	N	4	5	M	A: 37.8 R: 3.46	Fair	C: Fair S: Fair B: Fair		B.1 10 to 20 yrs
T9													
Apple <i>Malus domestica</i>		5	1	140	N	1.5	3	M	A: 8.9 R: 1.68	Decline	C: Poor S: Poor B: Poor		U <10 yrs
T10												Estimated Measurements	
Goat Willow <i>Salix caprea</i>		8.5	2	308 (Eq)	N	1.5	2	M	A: 42.9 R: 3.69	Good	C: Good S: Ivy B: Fair		B.1 20 to 40 yrs
Age Classifications: N Newly planted EM Early Mature Condition: C Crown Stems: Ø Diameter Y Young M Mature S Stem (Eq) Equivalent stem diameter using BS5837:2012 definition SM Semi-mature OM Over Mature B Basal area													

Tree and Tag No Species		Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations		Cat ERC
			No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment		
T11											Estimated Measurements		
Lombardy Poplar <i>Populus nigra 'Italica'</i>		21	1	400	N	2	6	M	A: 72.4 R: 4.8	Good	C: Good S: Fair B: Fair		B.1 20 to 40 yrs
T12											Estimated Measurements		
Lombardy Poplar <i>Populus nigra 'Italica'</i>		21	1	450	N	2	75	M	A: 91.6 R: 5.39	Good	C: Fair S: Ivy B: Fair		B.1 20 to 40 yrs
T13											Estimated Measurements		
Monterey Cypress <i>Cupressus macrocarpa</i>		14	2	333 (Eq)	N	5		M	A: 50.2 R: 3.99	Good	C: Fair S: Poor B: Fair	Fracture through the main union at 1.5m to 1.8m; movement of the stems visible and audible; represents a foreseeable risk of failure.	C.1 <10 yrs
T14											Estimated Measurements		
Lombardy Poplar <i>Populus nigra 'Italica'</i>		20	1	400	N	1.5		M	A: 72.4 R: 4.8	Good	C: Fair S: Ivy B: Fair		B.1 20 to 40 yrs
T15											Estimated Measurements		
Ash <i>Fraxinus excelsior</i>		14	2	361 (Eq)	N	4		M	A: 58.8 R: 4.32	Good	C: Fair S: Fair B:	Regularly pollarded tree with good regrowth from dormant buds.	B.1 20 to 40 yrs
T16											Estimated Measurements		
Ash <i>Fraxinus excelsior</i>		14	1	350	N	3	4	M	A: 55.4 R: 4.19	Good	C: Fair S: Fair B:	Regularly pollarded tree with good regrowth from dormant buds.	B.1 20 to 40 yrs
Age Classifications: N Newly planted EM Early Mature Condition: C Crown Stems: Ø Diameter Y Young M Mature S Stem (Eq) Equivalent stem diameter using BS5837:2012 definition SM Semi-mature OM Over Mature B Basal area													

Tree and Tag No Species		Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations		Cat ERC
			No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment		
T17											Estimated Measurements		
Ash		14	1	350	N	4	M	A: 55.4	Fair	C: Poor			B.1
Fraxinus excelsior					E	3	4	R: 4.19		S: Fair			10 to 20 yrs
					S	3	3			B:	Regularly pollarded tree with good regrowth from dormant buds.; extensive ash canker.		
					W	4							

Appendix 2 – tree survey definition of terms

<u>Category</u>	<u>Definition</u>
Tree ID/tag	Identification number and/or tree tag number.
Species	Common and/or scientific name.
Height	To the nearest 0.5m below 10m; to the nearest 1m above 10m.
Ø/No. of stems	Stem diameter measured at 1.5m or equivalent with reference to Annex C of BS5837:2012.
First branch	Height above ground level and direction of first significant branch.
Crown spread	Measured at the cardinal points in metres.
Canopy height/clearance	Crown clearance in metres above ground level at the cardinal points.
RPA	Root protection area (m ²) and length of radial protection (m).
Age class	Young Less than approximately 10 years old.
	Semi-mature Less than 1/5 of typical life expectancy.
	Mature Between 1/5 and 5/5 of typical life expectancy.
	Over-mature Tree having reached its maximum life span and declining in health and size.
	Veteran A tree that is of interest biologically, aesthetically or culturally because of its age, size or condition.
Structural/physiological condition	General condition of tree crown, stem and basal area structure and form - assessed as:
	Good Good form, structure and vitality; no apparent signs of decay, structural weakness, decline in health, pests or diseases.
	Fair Moderate form and structure.
	Poor Poor form or structure; significant decay, structural weakness or decline in vitality.
BS 5837 category (Cat)	BS grading category described in detail at appendix 3.
ERC	Estimated remaining contribution.

Beechdown ref: B/0216/19

7 The Meadows – BS 5837 tree survey/report – April 2019

Trees unsuitable for retention

<u>Category</u>	<u>Definition</u>
Category U	Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years – shown in dark red on plans.

Trees to be considered for retention

<u>Category</u>	<u>Definition</u>
Category A	Trees of high quality with an estimated remaining life expectancy of at least 40 years – shown in light green on plans. <u>1 - Mainly arboricultural qualities</u> – trees that are good examples of their species, especially if rare or unusual; or those that are essential components of groups, formal or semi-formal arboricultural features. <u>2 - Mainly landscape qualities</u> – trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features. <u>3 - Mainly cultural values, including conservation</u> – trees, groups or woodlands of significant conservation, historical, commemorative or other value.
Category B	Trees of moderate quality with an estimated life expectancy of at least 20 years – shown in mid blue on plans <u>1 - Mainly arboricultural qualities</u> – trees that might be included in category A but are downgraded because of impaired condition (e.g. presence of significant but remediable defects) to the extent that they are unlikely to be suitable for retention beyond 40 years; or trees lacking the particular quality necessary for category A designation. <u>2 - Mainly landscape qualities</u> – trees present in numbers, usually growing as groups or woodlands, that attract a higher collective rating than they might as individuals; or groups of trees situated so as to make little visual contribution to the wider locality.

Appendix 3 – BS 5837 grading categories

	<u>3 - Mainly cultural values, including conservation</u> – trees with material conservation or other cultural values.
Category C	Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter under 150mm - shown in grey on plans. <u>1 - Mainly arboricultural qualities</u> – unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories. <u>2 - Mainly landscape qualities</u> – trees present in groups or woodlands but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary landscape benefits. <u>3 - Mainly cultural values, including conservation</u> – trees with no material conservation or other cultural values.

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7 The Meadows Appendix 4 - tree survey plan

SCALE :
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DATE :
09/04/2019



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7 The Meadows- BS5837 report - April 2019

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Crown Spread Root Protection Area Shading Arc

Category 'A' Category 'B' Category 'C' Category 'U'

0 20m

Key

--- Site perimeter

Coppice
House

7

T1
C

T2
B

T3
C

T4
C

T5
C

T6
C

T7
C

T8
B

T9
U

T10
B

T11
B

T12
B

T13
C

T14
B

T15
B

T16
B

T17
B

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7 The Meadows

Appendix 5 - RPA and shade plan

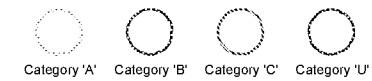
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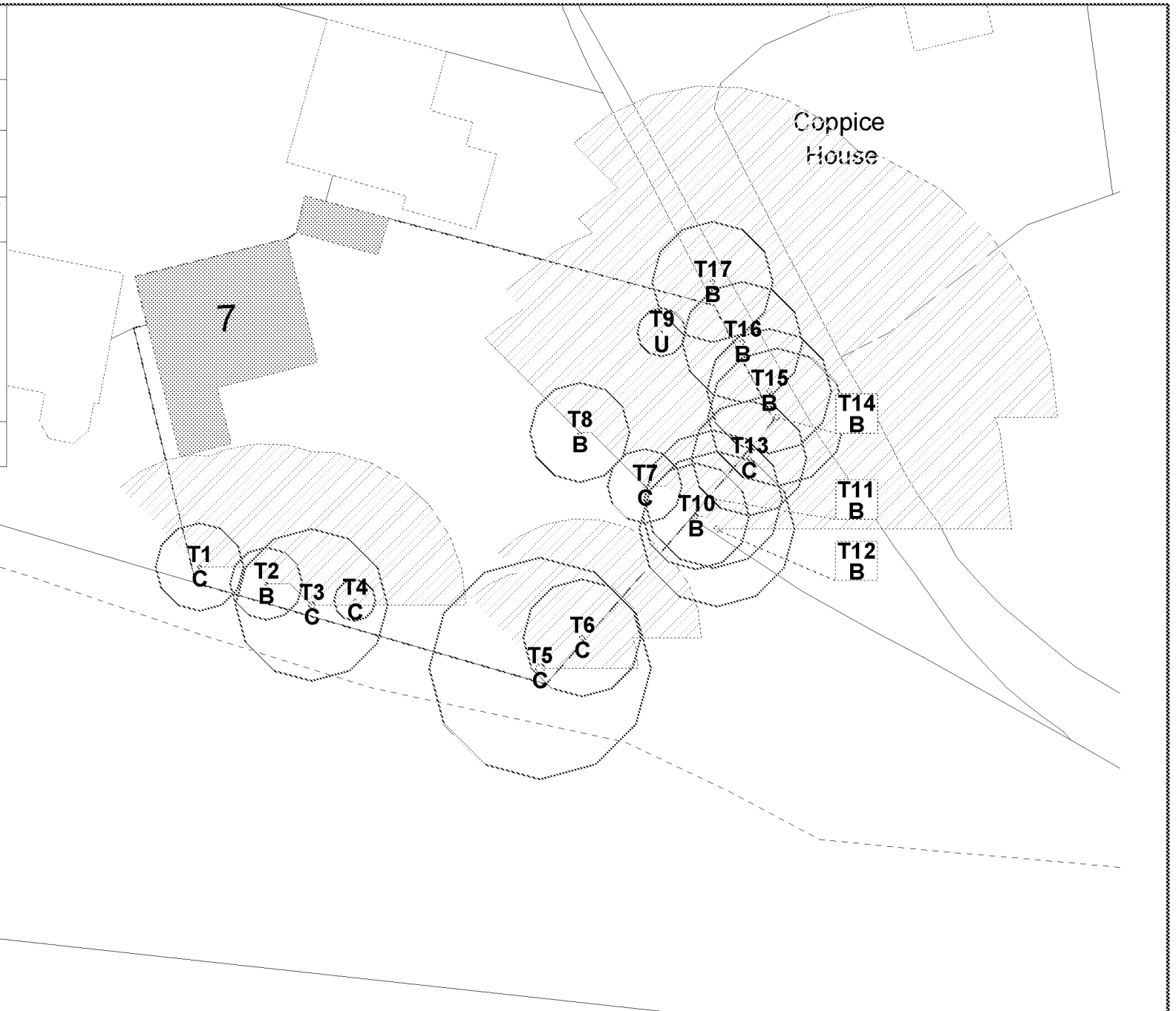
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Key

--- Site perimeter



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7 The Meadows Appendix 6 - area for potential development beyond RPAs

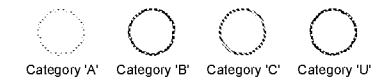
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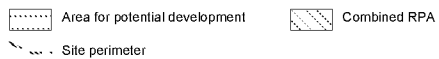


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7 The Meadows

Appendix 6 - increased area for potential development

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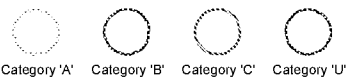


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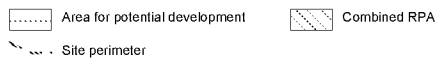
Crown Spread Root Protection Area Shading Arc



Category 'A' Category 'B' Category 'C' Category 'U'

0 20m

Key





Site Guidance Note 9: Installing/upgrading surfacing in root protection areas

This document is only a summary of its subject matter. You should not rely on this general guidance in isolation, and you should always seek detailed advice from an appropriate expert in relation to specific circumstances before any action is taken or refrained from. The content of these pages is protected by copyright © Barrell Treecare Ltd 2018. You may download and republish (in its full format) and print copies of the guidance – but you must not adapt any guidance.

SGN 9: Summary guidance for site operatives

Administration

1. Unauthorised damage to protected trees is a criminal offence and could lead to enforcement action.
2. Work under the normal site risk assessment procedures and comply with the wider site safety rules.
3. Brief operatives entering root protection areas (RPAs) by the supervising arboriculturist before work starts.

Other relevant SGNs

4. Monitor works in RPAs by the supervising arboriculturist (See SGN 1 Monitoring tree protection).
5. Design access to avoid soil compaction (See SGN 3 Ground protection).
6. Follow the guidance in SGN 4 Pollution control, if concrete is poured within or near RPAs.
7. Minimise excavation into original undisturbed soil (See SGN 7 Excavation in root protection areas).
8. Follow the guidance in SGN 8 Removing surfacing and structures in root protection areas, if existing surfacing is to be removed before installing new surfacing.
9. Follow the guidance in SGN 10 Installing structures in root protection areas, if the surfacing is to be installed on supports, i.e. piles, pads, or posts.

SGN 9: Summary guidance for site operatives

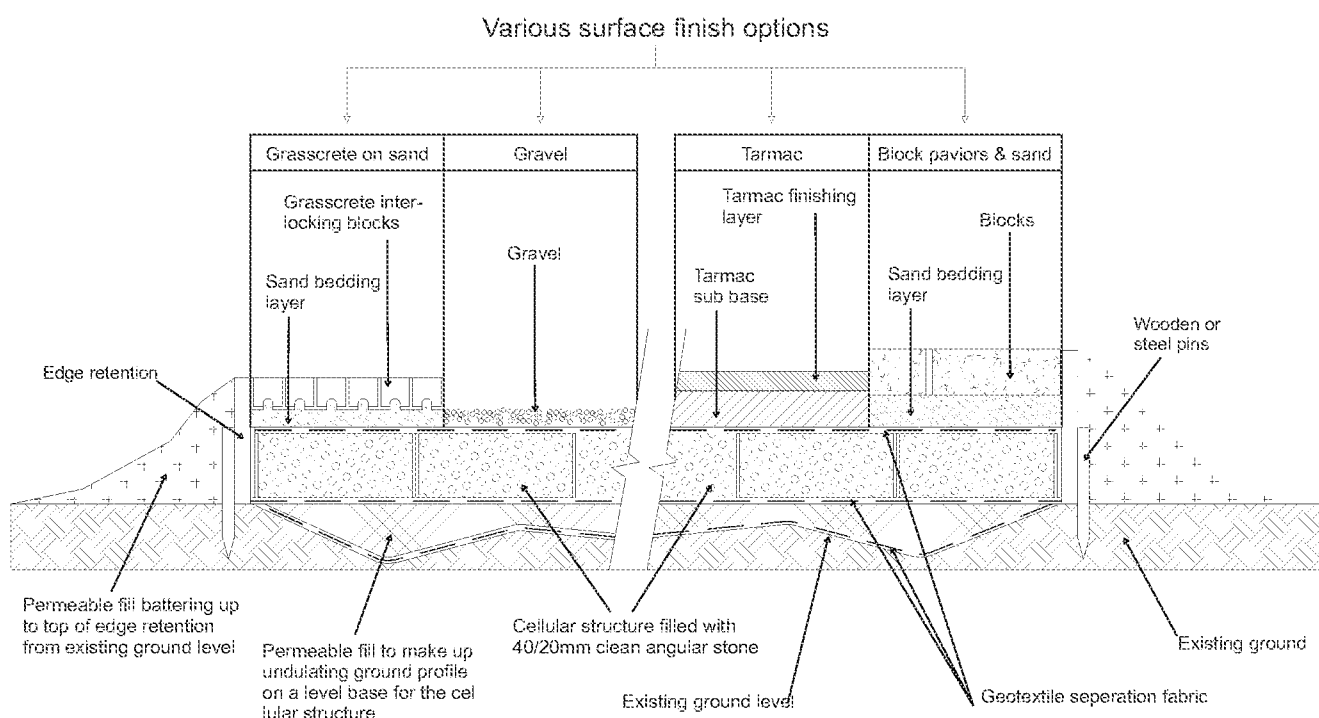
Important Reminders

10. For ground without existing surfacing, remove any loose material at the soil surface by hand and do not excavate into existing soil levels unless approved by the supervising arboriculturist.
11. For ground with a vegetation layer, excavations may be appropriate to remove the turf layer and surface vegetation, but this must be agreed by the supervising arboriculturist.
12. All new surfacing must be set back from trunks and buttress roots by at least 50 cm, unless otherwise agreed by the supervising arboriculturist.
13. Fill low points on undulating surfaces to an even level with any high points using an agreed granular material such as sand or stone.
14. Do not mechanically compact new fill or existing soil.
15. If a three-dimensional cellular confinement system is used, install it according to the manufacturer's technical specification. Note: The cellular fill will be washed angular stone with no fines, as specified by the manufacturer.

SGN 9: Explanatory notes and examples

Purpose

SGN 9 describes the practical requirements for installing new surfacing and upgrading existing surfacing in RPAs, based on the recommendations in BS 5837 (7.4).



Illustrative specification for no-dig cellular confinement surfacing with examples of finishing options.

Note: The final design must be site specific and detailed by an appropriate specialist

BS 5837 recommends that three-dimensional cellular confinement systems are an appropriate sub-base for installing surfacing in RPAs. Most products are made from heavy-duty plastic that is pulled apart to open into cells. These are then filled with washed stone, after the product is spread over the ground and pinned in place. This forms a base layer that acts as a floating raft, spreading the load across the whole construction width. The base layer can be topped with a variety of finishes as illustrated in the cross-section.

Product suppliers: Protectaweb 3D cellular confinement product -
<https://wrekinproducts.com>

SGN 9: Explanatory notes and examples

General principles and clarifications

Conventional surfacing installation based on excavating and compacting a supporting sub-base is unacceptable in RPAs because it can damage roots and the rooting environment. This harm is caused by killing roots, compacting soil structure, and impeding water/gaseous exchange through the soil. Adverse impact on trees will be reduced by minimising the extent of these changes in RPAs.

New surfacing solutions

Important elements of an effective design include protecting roots and the rooting environment during installation, a load spreading capability to prevent localised compaction, and providing adequate permeability for water and gasses to support living roots. The main approaches are:

- three-dimensional cellular confinement systems filled with washed stone laid directly onto the soil surface;
- concrete slabs cast directly onto the soil surface; and,
- surfacing supported above the soil surface on top of piles, pads, or posts.

The specific design of the chosen approach is an engineering issue that will take account of the bearing capacity of the soil, the intended loading, and the frequency of loading. The detail of

product and specification are technical matters to be provided by an appropriate specialist.

Dealing with undulating surfaces and establishing a tolerable level of excavation

The precise location and depth of roots within the soil is unpredictable and will often only be known when careful digging starts on site. Ideally, all new surfacing in RPAs will be no-dig, i.e. requiring no excavation, but this can sometimes be difficult on undulating surfaces. New surfacing normally requires an evenly graded sub-base layer, which can be made up to any high points with granular, permeable fills such as crushed stone or sharp sand. This sub-base will not be compacted as would happen in conventional surface installation. Some limited excavation can be necessary to achieve this and need not be damaging if carried out carefully and large roots are not cut. Tree roots and grass roots rarely occupy the same soil volume at the top of the soil profile, so the removal of an established turf layer up to 5cm from the surface is unlikely to be damaging to trees. However, this may not be possible where there is no grass because tree roots may grow right up to the soil surface. In some situations, it may be possible to dig to a greater depth,

SGN 9: Explanatory notes and examples

depending on local conditions, but this will be assessed by the supervising arboriculturist if excavation deeper than 5cm is anticipated.

On undulating surfaces, finished gradients and levels will be planned with sufficient flexibility to allow on-site adjustment if excavation of any high points reveals large unexpected roots near the surface. If the roots are less than 2.5cm in diameter, they can be cut and the base for the surfacing formed with the preferred minimal excavation of up to 5cm. However, if roots over 2.5cm in diameter are exposed, cutting them may be too damaging and further excavation may not be possible. If that is the case, the surrounding levels will be adjusted to take account of these high points by filling with suitable material. If this is not practical, the situation will be discussed with the supervising arboriculturist before a final decision is made.

Edge retention

Conventional kerb edge retention set in concrete-filled excavated trenches can cause damage to roots and will be avoided. Edge retention in RPAs will be designed to avoid any significant excavation into existing soil levels, with several approaches that are fit for this purpose. For block pavements, the use of pre-formed edging secured by metal pins is effective and can be reinforced by concrete supports if there is no

excavation into the soil. Railway sleepers pinned in place or wooden boards offer alternative options, depending on the expected loading of the surfacing. If the edge retention needs to be battered down to lower surrounding ground levels, a permeable soil fill will be used, as agreed with the supervising arboriculturist.

Footpaths and surfacing without a load-spreading base layer

In some situations, limited-width floating concrete rafts constructed directly onto the soil surface may be acceptable for both pedestrian and vehicular access, but the design will not include any strip-dug supports. If concrete is poured directly, precautions must be taken to ensure that no toxic fluids can contaminate the adjacent soil, e.g. confining the concrete in an impermeable liner. Alternatively, elevated paths supported on low impact frames or post supports allow a decking surface to cross sensitive areas. Where paths are installed very close to trunks, provision will be made for distortion from future root growth through using flexible components for the supporting frame and surfacing.

Specific considerations for upgrading existing surfacing

When upgrading existing surfacing, the preferred option will be to leave it in place and install the new surfacing on top of it. If the retained surfacing is impermeable, it may improve conditions for tree roots if it

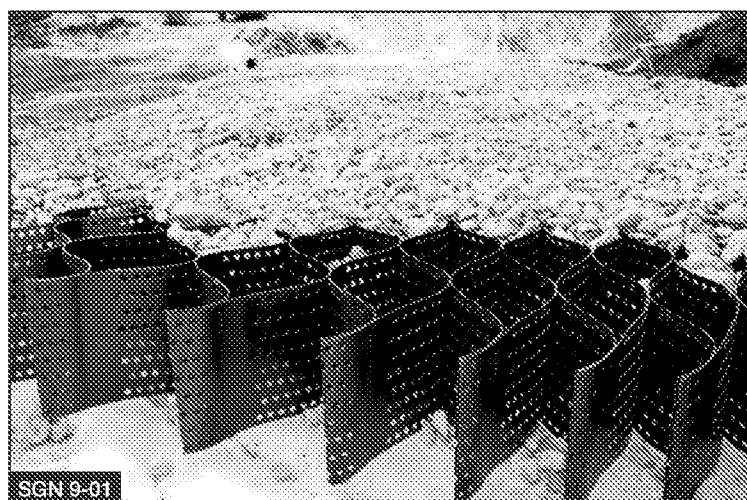
SGN 9: Explanatory notes and examples

is punctured before the new surfacing is laid, but this is detail to be agreed with the supervising arboriculturist. If the existing surfacing is to be removed, it will be excavated down to the soil level beneath following the guidance set out in SGN 8 (Removing surfacing and structures in root protection areas). The new surfacing will then be installed on this surface, as described above.

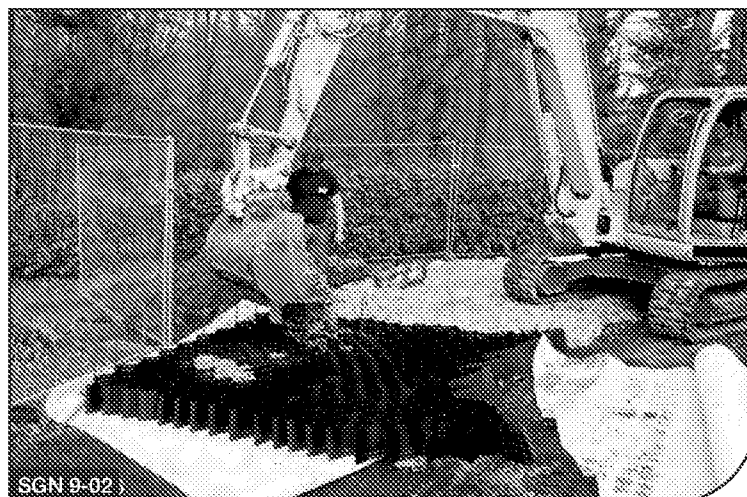
New surfacing near trunks

All new surfacing should be set back from trunks and buttress roots by at least 50cm to allow space for future growth and minimise the risk of distortion.

The flat-packed three-dimensional cells are pulled apart, spread across the area to be surfaced, and pinned in place ready for the washed angular stone fill (with no fines).



The stone-filled cells spread the load of traffic to prevent localised compaction. The permeable geotextile membrane on the ground allows the movement of water and gasses, but prevents the migration of stone into the soil profile.



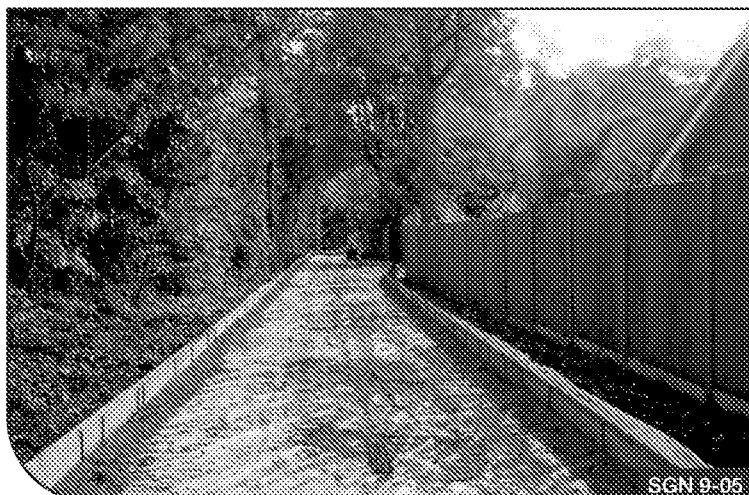
SGN 9: Explanatory notes and examples



Although BS 5837 recommends a minimum distance of 50cm between new surfacing and buttress roots, there may be scope for flexibility in this separation for mature trees with little potential for future growth, if agreed by the supervising arboriculturist.



A conventional concrete haunching can be used to retain new surfacing if it is not dug into a trench - here it is placed on top of the three-dimensional cellular confinement layer.



This preparation for a new residential access drive shows the base formation above the original ground level, with the permeable geotextile layer covering the ground. The wooden boards are pinned in place, creating an informal and rustic surface edging.

SGN 9: Explanatory notes and examples

The three-dimensional cells have been installed and filled with washed stone, ready for the finished surface to be laid above. The ground beyond the drive edges has been profiled with backfilled topsoil.



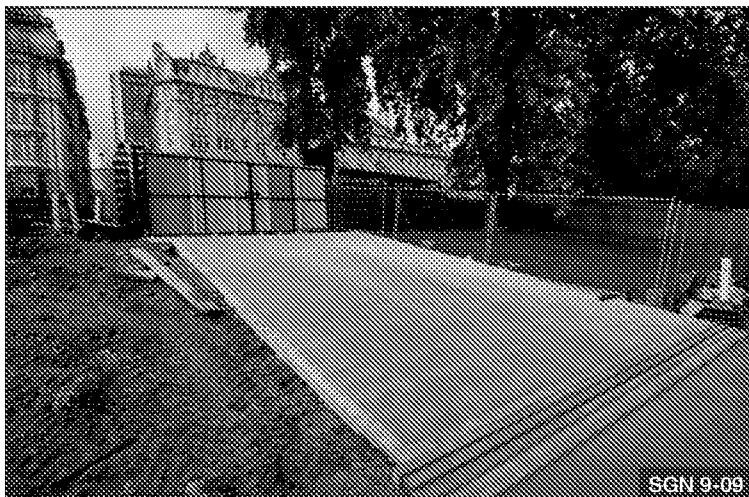
An alternative to the flexible three dimensional cells is rigid interlocking plastic cells, again filled with washed stone and retained by pinned wooden edges.



Another option for wooden edges at corner points that allows for vehicles to accidentally track over the edge of the formal surfacing.



SGN 9: Explanatory notes and examples



This temporary access for heavy construction traffic on the outer edge of a RPA is a concrete slab cast above ground level and will be removed when the project is completed. This approach is particularly suitable for slopes where a three-dimensional approach may be more prone to distortion when carrying heavy loads.



In some situations, it may be appropriate to cast a free-floating concrete surface directly onto the soil surface provided provision is made to prevent soil contamination while the concrete is being poured.



The RPA of this oak extended about 12m from its trunk and was previously covered in tarmac as parking. This original surfacing was removed and replaced with a new patio set above the ground level, with provision for water and air input into the covered RPA.

SGN 9: Explanatory notes and examples

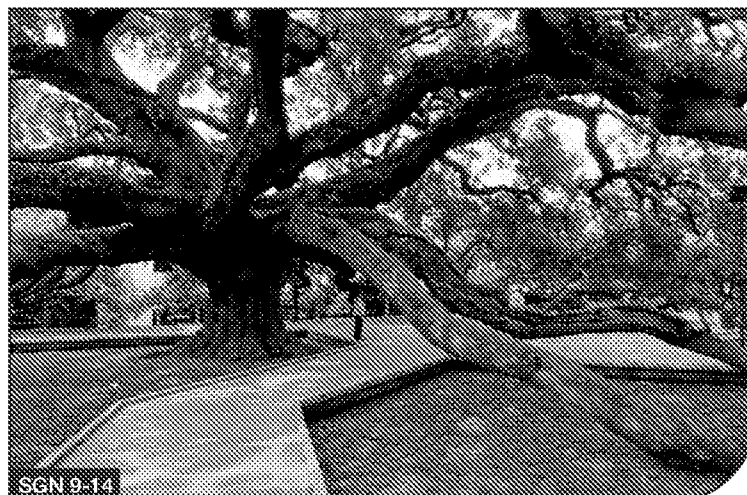
Where new surfacing is to be installed over existing, sometimes it may assist the movement of gasses and water if the existing surfacing is punctured. In this situation, exploratory digging showed important roots directly beneath the existing tarmac, which would have been damaged if the tarmac was removed.



An option for installing surfacing close to mature trees is to use a light metal frame with rubberised surfacing to allow the path to distort without failing as the roots grow.



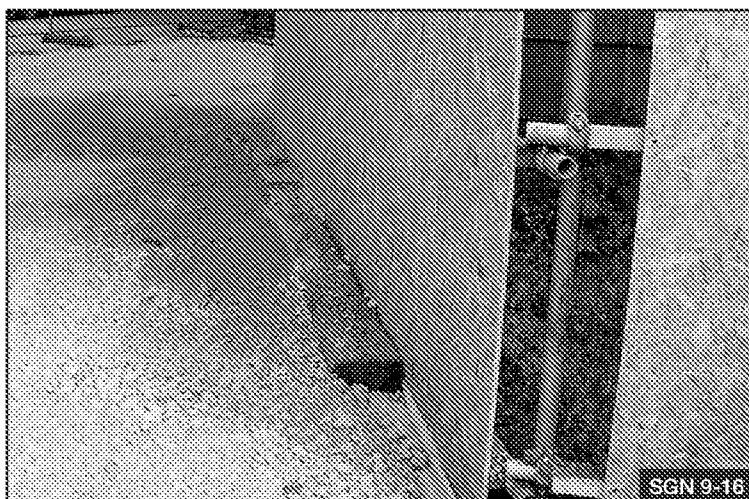
Board walks supported on posts or a light frame are another way of providing pedestrian access across sensitive RPAs (photo courtesy of Philip van Wassenaer).



SGN 9: Explanatory notes and examples



New surfacing such as decking can be supported above the ground on posts leaving the soil surface beneath undisturbed.



Although this is only a temporary surface, railway sleepers pinned into the ground can be used to retain the edges of new surfacing.



Where space is restricted it is possible to use metal edging.

SGN 9: Explanatory notes and examples

Technical reference

Due to copyright restrictions, the relevant British Standard clauses are summarised, not quoted, as follows:

1. **BS 5837 (2012) Trees in relation to design, demolition and construction – Recommendations:**
Clause 7.4 (Permanent hard surfacing within the RPA) recommends:

- 7.4.2.1 *New surface design should not require excavation other than the removal of the turf layer and surface vegetation. The design should be able to bear any anticipated loading, especially if it must carry construction traffic.*
- 7.4.2.2 *The design should evenly distribute the loading to avoid localised compaction.*
- 7.4.2.7 *The design should be resistant to or tolerant of deformation by tree roots, and should be set back from the stem and any root buttresses by a minimum of 50cm to allow for growth and movement. Levels can be made up using appropriate inert granular material.*

NOTE Piles, pads, elevated beams, and three-dimensional cellular confinement systems, can be used to support surfaces. If excavation is required, the location of roots greater than 2.5cm in diameter should be determined by exploratory investigations and retained if possible.

- 7.4.3 *The conventional installation of kerbs, edgings, and haunchings, can damage tree roots and should be avoided either by using alternative methods of edge support or by not using supports at all.*

NOTE Examples of suitable edge supports include above-ground peg and board edging, sleepers, gabions, and other non-invasive ground-contact structures.

- 7.4.4.3 *Ground levels should not be reduced to establish the new hard surface at the former ground level. Loose debris and turf should be removed carefully and the new surface should sit on top of the original soil.*
- 7.4.4.4 *Fill to raise levels should be a granular material which remains gas- and water-permeable throughout its design life.*
- 7.4.4.5 *Wet concrete should not be poured in the RPA unless an impermeable liner has been installed to prevent soil contamination from the toxic leachate.*