

Arboricultural Implication Assessment and Planning Integration Report For No 21 Clevedon Road, Flax Bourton, Bristol, BS48 1NQ

Summary:

The proposed scheme is for the extension of and improvements to including amended access to No21 Clevedon Road, Flax Bourton, Bristol, BS48 1NQ. There is very little impact on the existing treescape with the great majority of tree's being retained.

Prepared By: Stuart Baker BSc (Hons), M.Arbor.A., Tech.Cert.Arbor.A.

Prepared For: Chew Valley Properties Ltd

Date: 28/03/2024

Report Ref: R3779sb

Planning Ref: N/A

CONTENTS

Section & Subject	Page No.
1 Instructions & Documents Supplied	3
2 Issues Addressed & Report Limitations	3
3 Survey Method	4
Arboricultural Assessment	5
4 The Site	5
5 Subject Trees & Other Arboricultural Features	5
Arboricultural & Planning Implications	6
6 Proposed Planning Layout / Existing Trees & Site Constraints	6
7 Tree Retention & Long Term Viability	6
8 Protection of retained and adjacent trees	7
9 Site precautions outside protected areas	7
10 Ground protection measures	7
11 Underground & Overhead Services	7
12 Levels and drainage	7
13 Daylight and shading	8
14 Future growth potential	8
15 Exposure & Safety Of Retained Trees	8
16 Direct and indirect damage to structures	8
17 Leaf litter and tree deposition	8
18 Amenity Impact & Mitigation Planting	9
19 Ecological considerations	9
20 Pre-commencement Considerations	9

- Annex 1: Tree Schedule
- Annex 2: Abbreviations & Glossary of Terms
- Annex 3: Table 1 – Cascade chart for tree quality assessment (BS5837:2012)
- Annex 4: Extract From BS5837:2012 Trees in relation to construction – Recommendations.

Location	No 21 Clevedon Road, Flax Bourton, Bristol, BS48 1NQ		Ref:	R3779sb
Client	Chew Valley Properties Ltd		Report Date	26/03/2024
Survey Inspector(s)	S Baker BSc (Hons), M Arbor A		Inspection Date	27/02/2024
Initial Report:	S Baker BSc (Hons), M Arbor A	Report Prepared By:	A M Lane MIC For., F. Arbor A., MRICS	

Please note that abbreviations introduced in [square brackets] are used throughout the report.

1 Instructions & Documents Supplied

- 1.1 Email Instructions have been received from Mr Charlie Gamlen of Chew Valley Properties Ltd to proceed with the 'tree survey'. The first phase therefore as per my specification ref: Q3732a1 has been undertaken as follows;
- 1.2 Stage 1 – Survey, Constraints Plan & Arboricultural Assessment. To survey the above trees in accordance with BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations, [Section 4.4] 1[1] and information recorded as per clause 4.2.6.
- 1.3 Annotate the surveyed trees onto the supplied base plan and prepare a Tree Constraints Plan & Development Scope [Section 5]. Write a concise Arboricultural Implications Assessment [Section 5.5] for the surveyed trees. The report and plan to be submitted in electronic format only.
- 1.4 Stages 2 & 3 – Tree Protection Plan & Method Statements. Prepare a Tree Protection Plan, update the Arboricultural Implication Assessment and prepare Arboricultural Method Statements [Section 5.5] to submit with the planning application. The report and drawing will be submitted electronic format)
- 1.5 The client has supplied the following plans and schedules to assist in the preparation of this report.
 - 1.5.1 Proposed site plan, 2809/P1000
 - 1.5.2 Development Proposal 2809 - P100 - Site Plan_20240313
- 1.6 The Site Plan indicated trees to be surveyed. However, a number of tree features were not included, their position have been approximated on the TPP and marked with the suffix (PA). Should their position become critical a further visit, by the land surveyor, will be required to determine their exact location.

2 Issues Addressed & Report Limitations

- 2.1 This is a preliminary assessment and may require revision once the planning layout has been agreed with the local planning authority. The revised and final report should provide the details, in the form of arboricultural method statements, for the protection of retained arboricultural features and be supported by a Tree Protection Plan drawing.

- 2.2 The inspection has taken the form of a Visual Tree Assessment [VTA]². The inspection was from ground level, visual only and no samples were taken unless agreed beforehand. Binoculars will be used as appropriate.
- 2.3 The tree survey (annex 1) sets out the Root Protection Area [RPA] for each tree in accord with Table 1 of BS5837 however these are shown on the tree protection plan [TPP] where applicable for retained trees.
- 2.4 Pruning works will be required to be in accord with British Standard 3998:2010 Tree work [BS3998] and are recorded in the Tree Schedule (Annex 1).
- 2.5 The integrity or direction of drains or other underground services has not been determined.
- 2.6 The survey does not cover the arrangements that may be required in connection with the laying or removal of underground services.
- 2.7 This report does not address issues relating to tree related subsidence or heave and the client is strongly advised to seek appropriate advice with regard to any such risk being present.
- 2.8 The limit of A M Lane Ltd's indemnity over any matter arising out of this report extends only to the instructing client, namely Chew Valley Properties Ltd.

3 Survey Method

- 3.1 The survey was conducted from ground level and by visual means only.
- 3.2 No tissue samples were taken nor was any internal investigation of the subject trees undertaken.
- 3.3 No soil samples were taken. Soil type has been visually.
- 3.4 The height of each subject tree was estimated using a clinometer.
- 3.5 The trunk diameters [TD] were measured in centimetres at 1.5 metres above ground level.
- 3.6 The crown spreads were estimated in metres.
- 3.7 Subject trees have not been tagged however the numbers referred to within the report follow the numbering sequence indicated on the TPP.
- 3.8 Where trees formed distinct group features they have been assessed collectively and are annotated in the Tree Schedule and on the drawings with the letter G. Offsite trees have been assessed without entering the adjoining property therefore all offsite measurements are estimated. These trees are annotated with 'Offsite' on the plan TPP.
- 3.9 Hedges onsite have been assigned the letter H in the tree schedule and a minimum stem diameter of 150mm provided.
- 3.10 The trees have been assigned an 'U', 'A', 'B' or 'C' category in accord with Table 1 – Cascade chart for tree quality assessment of BS5837. See the attached annex for the criteria used.

² **Visual Tree Assessment:** in addition to the literal meaning, a system expounded by Mattheck & Breloer (1995) & D Lonsdale (1999) Principles of Tree Hazard Assessment & Management, DETR, to aid the diagnosis of potential defects through visual signs and the application of mechanical criteria.

Arboricultural Assessment

4 The Site

- 4.1. The site is a residential property, located on a spur road, off of the main B3130, Clevedon Road. The road provides access to two dwellings and down to the former Flax Bourton railway station, adjacent to the Bristol to Exeter Railway lines.
- 4.2. The site has a single detached two storey dwelling, located just north of central within the plot. The local area is characterised by detached dwellings located within large gardens, with extensive mature tree cover.
- 4.3. The site is bordered by residential properties to the east and west. To the north of the site is an agricultural field and to the south is the Bristol to Exeter Railway lines. The property is accessed off a private no through road.
- 4.4. The soils on site are classified as deep, pansol, comprised of a clayey loam to silty loam, over a subsoil based on, Siltstone and Halite. These soils are characterised as being slowly permeable, seasonally wet and slightly acidic (www.ukso.org). Importantly these soils will be prone to compaction, therefore tree protection will be an important factor during the planning and construction phase of this project.

5 Subject Trees & Other Arboricultural Features

- 5.1 A schedule of the trees is included in Annex 1. The existing trees are shown on the TCP. Three hedgerows, eight individual trees and eight tree groups were surveyed. Any other trees or shrubs considered to fall below the size expedient for inclusion in the schedule or outside of the likely influence of any proposed development.
- 4.5. The most notable trees growing on the site are those in the front garden, which collectively make a positive contribution to the amenity and verdant character of the local area. This includes the field maple (T2 & G4.2), beech (T3 & G4) and the oak (G4.1). These trees form part of a larger tree group, including tree growing in the adjoining properties, to the east and west of the site and on the opposite side of the access road.
- 5.2 The Beech (T3) is trifurcated from close to ground level, with two dominant stems, one to the east, the other to the west and the third sub-dominant stem growing to the north. The two dominant stems have a tightly adpressed main junction, with embedded bark and lack of annual growth rings fused over the junction. The stem diameter to union ratio, of the western stem is at around 60% and this stem is considered suboptimal. Additional to the structural observations, the fungal fruiting bodies of *Kretzschmaria deusta* were observed buttress recesses. This fungus is known to decay roots, the butt and stem of the host tree and can be associated with stem or root failure where it is extensive. Furthermore the integrity of the main union which is proximal to the fungi is a concern. A preliminary category 'C' is assigned to the tree and it is proposed to undertake an advanced assessment of the tree is to determine the extent of any decay, and ultimately the risk posed by the tree to surrounding property.
- 5.3 Immediately to the west of the sites existing driveway, growing in the adjoining property is two historically topped Indian bean trees (G17) and a maturing Lawson cypress (T18). The latter of which is beginning to lift the existing blocked paved driveway. The proposed relocation of the driveway further to the east away from these trees will be a benefit to these trees if the ground is returned to soft landscaping.

- 5.4 The changes in ground level and retaining walls adjacent to the sites eastern boundary are likely to result in restricting rooting into the site. The RPA of the trees features G7, G8, T9, T10, T11 and G12 has been offset to the east accordingly.
- 5.5 The minimum Root Protection Areas [RPA] have been calculated in accord with Table 2 of BS5837 and interpolated onto the TPP as polygons approximately equivalent to the required area to be protected.
- 5.6 Rooting restrictions onsite may vary due to the soil density, topography and the location of various structures or hard surfaces. As such the calculated radial spread of the RPA is a mathematical representation which in many cases is unlikely to represent a precise or indeed accurate portrayal of the actual root spread. As such reasonable adjustments are made to account for the observed likely root spread based on the above restrictions. It is further noted that the RPA calculation is a two dimensional representation of a three dimensional root volume. As such account is also taken of the likely depth of root according to soil type, density and root morphology according tree species.

Arboricultural & Planning Implications

6 Proposed Planning Layout / Existing Trees & Site Constraints

- 6.1 The proposed layout shows an extension to the existing dwelling and relocation of the existing driveway further to the east.
 - 6.2 The relocated driveway will require part removal of approximately 5m of the Lawson cypress hedgerow (H1). However, this is a category C feature and can be easily replace as already shown on the proposed site plan.
 - 6.3 The new driveway also intersects the RPA of the beech (T3), however this only by 9m², which is approximately 2% of the trees RPA. This is a negligible incursion into the notional RPA of the tree and there is additional area added to the trees RPA to the southeast to compensate in any case.
 - 6.4 The relocation of the driveway will result in an improvement to the root zone of the offsite Indian bean trees (G16) and Lawson cypress (T17) in the longer term, as the block paving driveway will be carefully removed and the area subjected to soft landscaping.
 - 6.5 Whilst not necessary to facilitate the scheme the applicant also proposes to remove the category C spruce (T14) from the rear garden, to allow fresh landscaping. This is a low amenity value tree and of no material significance.
 - 6.6 The minimum Root Protection Areas [RPA] have been calculated in accord with Table 2 of BS5837 and interpolated onto the TPP as polygons approximately equivalent to the required area.
- #### 7 Tree Retention & Long Term Viability
- 7.1 The proposed scheme shows a good spatial relationship with the existing tree features. The proposed scheme will not reduce the long-term viability of the site's trees. The relocation of the driveway will enhance the rooting environment of the trees growing to the west of the site.

Tree Removal & Tree Work Schedule:

Tree Type	Tree No	Species	Preliminary Management Recommendations
H	1	Lawson cypress	Remove 5m Section as per proposed plan to facilitate new drive access.
T	3	Beech	Requires detailed condition assessment and proactive ongoing future management.
T	14	Fir	Remove to facilitate new landscape planting.
T	17	Lawson cypress	Crown lift to 4m from drive level to facilitate access.

8 Protection of retained and adjacent trees

8.1 The minimum RPAs stated in Annex 1 have informed the location of the Tree Protection Fences [TPF] as shown on the Tree Protection Plan.

8.2 Arboricultural Method Statements have been drawn up detailing the how and when the Tree Protection Fencing will be installed and how the existing driveway will be removed.

9 Site precautions outside protected areas.

9.1 The site is large and adequate space will be available to accommodate construction activities without being detrimental to the retained trees. Nevertheless the restrictions regarding fires, materials storage, cement mixing, siting of welfare, temporary services and fuel storage stated in the Arboricultural Method Statement and must be adhered to.

10 Ground protection measures.

10.1 No ground protection measures have been proposed. The retention of the existing drive will allow access to the rear of the property in the phased redevelopment. It will provide adequate protection for the underlying RPAs of G17 & G17 until such time as the existing drive can be removed as per the AMS. The phasing of the access requirements will be agreed as part of the proposed arboricultural supervision onsite.

11 Underground & Overhead Services

11.1 It is anticipated that all existing service connections will be utilised and this will not impact on the existing trees. Should it become necessary to renew existing services that fall within the CEZ as indicated on the Tree Protection Plan, consultation with the arboricultural consultant must be made.

12 Levels and drainage

12.1 Details relating to surface water run-off and soil drainage has not been provided. Should it become necessary to undertake works within the CEZ as indicated on the Tree Protection Plan, consultation with the arboricultural consultant must be made.

12.2 Further details must be provided of site soil level changes before a more informed assessment of the arboricultural impact can be made.

12.3 The proposed removal of the existing driveway and re-instatement of soft landscaping within the CEZ adjacent to Trees G16 and T17 will need to follow the provided AMS.

13 Daylight and shading

13.1 The significant trees are located to the north of the site, thus excess shading and reduced daylight levels are not considered to be an issue.

14 Future growth potential

14.1 G8 has the closest proximity to the existing property, with its crown coming to within 1m of the dwelling. This tree is part of a lineal group of trees growing on the eastern boundary, that has effectively been managed as a large hedge, providing privacy between the two adjacent properties. The proposed development does not change the current status quo. All other trees are at a reasonable distance from the extended elements on the proposed scheme.

14.2 The location and species choice of and new planting must take account of final canopy size and the location of the structures.

15 Exposure & Safety Of Retained Trees

15.1 The site is moderately exposed from the southwest with little or no shelter from the prevailing south westerly winds.

15.2 A management recommendation has been made to undertake a detailed condition assessment of the Beech (T3) due to its identified condition (as outlined in paragraph 5.3 above).

16 Direct and indirect damage to structures

16.1 The foundation depths must take account of proximity of the retained trees and proposed planting, in accordance with the National House Building Council [NHBC] Chapter 4.2 guidelines.

16.2 The final location of replacement planting must be in accordance with BS5837 Table 3 to avoid direct damage to structures.

17 Leaf litter and tree deposition.

17.1 I foresee no new issues relating to leaf litter or tree deposition given the distance between retained trees and buildings.

17.2 Where gutters are overhung by or in close proximity to trees it is advised that a proprietary leaf barrier is installed within the guttering i.e. hedgehog filters (www.angelplastics.co.uk). Such barriers will require periodic maintenance and consideration in the design should be given to the access required to do so.

17.3 Leaves and other tree related debris are likely to accumulate in roof valleys, rainwater gulleys and other surface drainage. The design should ensure that such debris is either prevented from blocking these features or is easily accessible for periodic clearance.

17.4 Surfaces beneath the canopy of trees are subject to algal growth and may be stained by tree debris such as fruit or flowers. The surface type, finish and ongoing maintenance should be considered in this respect of the area to the east of the dwelling.

18 Amenity Impact & Mitigation Planting

18.1 Most of the key feature trees onsite have been retained and will play a fundamental part in defining the character of the development. The principal trees onsite have all reached maturity and in essence maximises their amenity potential in terms of size. Any new landscape planting to reflect the sites character should be a fundamental part of the design with replacement planting to mitigate for the loss of the 5m section of hedgerow (H1) and the spruce (T14).

19 Ecological considerations

19.1 Trees will be inspected for nesting birds and bats/bat roosts prior to any work being undertaken according to the requirements of THE WILDLIFE AND COUNTRYSIDE ACT 1981, and THE COUNTRYSIDE AND RIGHTS OFWAY ACT 2000.

19.2 Tree works and construction shall proceed in accord with current best practice.

20 Pre-commencement Considerations

20.1 Construction works should proceed according to the flow chart outlined in BS5837 Figure 1.

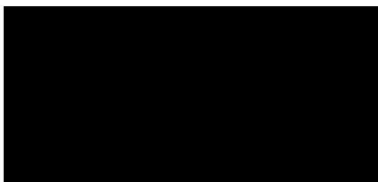
20.2 An Arboricultural Method Statements have been drawn up and should be adopted for the development of this site and include the appointment of an Arboricultural Consultant to oversee the implementation of this report and method statements.

20.3 Tree works and site clearance are recommended in the tree schedule (Annex 1) and must be carried out in accordance with British Standard 3998:2010 Recommendations for tree work or the European Tree Pruning Guide, by a competent arborist.

Limitations and copyright: All rights in this report are reserved. No part of it may be reproduced or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, or stored in any retrieval system of any nature, without our written permission. Its content and format are for the exclusive use of the addressee in dealing with this site.

The statements made in this report do not take account of extremes of climate, vandalism or accident, whether physical, chemical or fire. A M Lane Limited cannot therefore accept any liability in connection with these factors, nor where prescribed work is not carried out in a correct and professional manner in accordance with current good practice. The authority of this report ceases at any stated time limit within it, or if none is stated after two years from the date of the survey or when site conditions change, or pruning or others works unspecified in the report are carried out to, or affecting, the subject tree(s), whichever is sooner.

Signed



Date: 28/03/2024

A M Lane MIC For., MRICS., F. Arbor. A., Tech. Cert. Arbor. A.
Arboricultural Consultant, Chartered Forester & Chartered Surveyor

Annex 1: Tree Schedule

Tree Schedule: No 21 Clevedon Road, Flax Bourton

Date of inspection: 27/02/2024

Tagged: No

Inspected By: Stuart Baker

Weather: Overcast.

Tree Type & Reference No.	Species	Height (m)	Spread (m) N E S W	Stem Diameter @ 1.5m (mm)	Age Class	Ground Clearance N E S W	Life Expectancy	Physiological Condition Vigour Structural & Other Observations	Preliminary Management Recommendations	Retention Category	RPA (Sq M)	RPA Radius (M)
H1	Lawson cypress	4	1 1	100	E		10-20	Condition:P Vigour: Moderate Regular historic management. Dead sections of foliage. East end now thin.	Continue cyclical trimming if retained. Remove 5 metre section at the Western end to facilitate new access.	C 2	4.52	1.2
T2	Field maple	9	5 2 3 4	480	M	5 4	20-40	Condition:M Vigour: Good Significant asymmetrical form.	None at the time of assessment.	B 1 2	104.24	5.8
T3	Beech	22	9 8 10 9	1160	M	5 5 3 5	20-40	Condition:M Vigour: Good Trifurcated from 0.5m with tightly adpressed main stem (820 x 720 x 400). Kretzschmaria deusta between west and south aspect buttresses. Large spreading crown. This could be a category B12 tree with proactive ongoing management.	Requires detailed condition assessment and proactive ongoing future management.	C 1 2	452.45	12.0
G4.0	Beech	15	4.5 3 4.5 4.5	370	E	4 4 2 2	40+	Condition:G Vigour: Good Slight asymmetrical form. Upper crown now with phototropic grown to N.	None at the time of assessment.	B 2	61.94	4.4

Key to Schedule (Also see following explanatory notes)

Age Class	Y (Young)	First 1/3 life expectancy
	S (Middle Mature)	1/3 to 2/3 life expectancy
	E (Early Mature)	Approachin Final 1/3 life expectancy
	M (Mature)	Final 1/3 life expectancy
	OM & V (Over Mature)	Over mature or Veteran
Stem Diameter	In millimetres	
RPA	Root protection area in square metres	
RPA Radius	Minimum radius to achieve RPA	

Physiological (Health) & Structural Condition	Good	Safe & free from defects with a healthy crown
	Moderate	Safe but with some defects, generally healthy crown
	Poor	Structural defects, poor general health and vigour
Tree Type	T = Individual tree, G = Group of trees, H = Hedge line, W = Woodland or woodland edge.	
Retention Category.	U	<10 years remaining Trees for removal
See Table 1 of BS5837:2012 for explanation	A	Min 40 years remaining High quality trees whose retention is most desirable
	B	Min 20 years remaining Moderate quality trees whose retention is desirable
	C	Min 10 years remaining Low quality trees or those <150mm diameter

Tree Schedule: No 21 Clevedon Road, Flax Bourton

Date of inspection: 27/02/2024

Tagged: No

Inspected By: Stuart Baker

Weather: Overcast.

Tree Type & Reference No.	Species	Height (m)	Spread (m) N E S W	Stem Diameter @ 1.5m (mm)	Age Class	Ground Clearance N E S W	Life Expectancy	Physiological Condition Vigour Structural & Other Observations	Preliminary Management Recommendations	Retention Category	RPA (Sq M)	RPA Radius (M)
G4.1	Oak	20	7 3.5 4.5 7.5	680	M	7 7 7 7	40+	Condition:G Vigour: Good Asymmetrical form.	None at the time of assessment.	B 1 2	209.21	8.2
G4.2	Field maple	12	1 5 5 2.5	460	M	4	20-40	Condition:M Vigour: Good Historical damage to upper crown.	None at the time of assessment.	B 2	95.74	5.5
G4.3	Maple	12	1.5 1.5 1.5 1.5	190	S	1.5 1.5 1.5	10-20	Condition:M Vigour: Moderate Etiolated sub component of larger group.	None at the time of assessment.	C 2	16.33	2.3
G4.4	Lawson cypress	16	1 1 3.5 3.5	520	M	3	10-20	Condition:M Vigour: Good Asymmetrical form. Cable attached to tree from fence over to house.	None at the time of assessment.	C 2	122.34	6.2

Key to Schedule (Also see following explanatory notes)

Age Class	Y (Young)	First 1/3 life expectancy
	S (Middle Mature)	1/3 to 2/3 life expectancy
	E (Early Mature)	Approachin Final 1/3 life expectancy
	M (Mature)	Final 1/3 life expectancy
	OM & V (Over Mature)	Over mature or Veteran
Stem Diameter	In millimetres	
RPA	Root protection area in square metres	
RPA Radius	Minimum radius to achieve RPA	

Physiological (Health) & Structural Condition	Good	Safe & free from defects with a healthy crown
	Moderate	Safe but with some defects, generally healthy crown
	Poor	Structural defects, poor general health and vigour
Tree Type	T = Individual tree, G = Group of trees, H = Hedge line, W = Woodland or woodland edge.	
Retention Category.	U	<10 years remaining Trees for removal
See Table 1 of BS5837:2012 for explanation	A	Min 40 years remaining High quality trees whose retention is most desirable
	B	Min 20 years remaining Moderate quality trees whose retention is desirable
	C	Min 10 years remaining Low quality trees or those <150mm diameter

Tree Schedule: No 21 Clevedon Road, Flax Bourton

Date of inspection: 27/02/2024

Tagged: No

Inspected By: Stuart Baker

Weather: Overcast.

Tree Type & Reference No.	Species	Height (m)	Spread (m) N E S W	Stem Diameter @ 1.5m (mm)	Age Class	Ground Clearance N E S W	Life Expectancy	Physiological Condition Vigour Structural & Other Observations	Preliminary Management Recommendations	Retention Category	RPA (Sq M)	RPA Radius (M)
G4.5	Maple	6	0.5 0.5 2.0 2.0	130	S		10-20	Condition:M Vigour: Good Significant asymmetrical form.	None at the time of assessment.	C 2	7.65	1.6
T5	Oak	18	7.5 7.5 7.5 7.5	470	M	4	20-40	Condition:G Vigour: Good Growing on adjacent property. No notable ADD symptoms.	None at the time of assessment.	B 2	99.95	5.6
H6	Lonicera and Holly hedge	2.5	1 1	100	M		10-20	Condition:M Vigour: Good Decorative boundary feature of variable height.	Continue cyclical trimming.	C 2	4.52	1.2
G7	Lawson cypress	8	2.5 2.5	250	E	2	10-20	Condition:M Vigour: Good Lineal group on adj property. At lower ground level. RPA bias to E.	None at the time of assessment.	C 2	28.28	3.0

Key to Schedule (Also see following explanatory notes)

Age Class	Y (Young)	First 1/3 life expectancy
	S (Middle Mature)	1/3 to 2/3 life expectancy
	E (Early Mature)	Approachin Final 1/3 life expectancy
	M (Mature)	Final 1/3 life expectancy
	OM & V (Over Mature)	Over mature or Veteran
Stem Diameter	In millimetres	
RPA	Root protection area in square metres	
RPA Radius	Minimum radius to achieve RPA	

Physiological (Health) & Structural Condition	Good	Safe & free from defects with a healthy crown
	Moderate	Safe but with some defects, generally healthy crown
	Poor	Structural defects, poor general health and vigour
Tree Type	T = Individual tree, G = Group of trees, H = Hedge line, W = Woodland or woodland edge.	
Retention Category.	U	<10 years remaining Trees for removal
See Table 1 of BS5837:2012 for explanation	A	Min 40 years remaining High quality trees whose retention is most desirable
	B	Min 20 years remaining Moderate quality trees whose retention is desirable
	C	Min 10 years remaining Low quality trees or those <150mm diameter

Tree Schedule: No 21 Clevedon Road, Flax Bourton

Date of inspection: 27/02/2024

Tagged: No

Inspected By: Stuart Baker

Weather: Overcast.

Tree Type & Reference No.	Species	Height (m)	Spread (m) N E S W	Stem Diameter @ 1.5m (mm)	Age Class	Ground Clearance N E S W	Life Expectancy	Physiological Condition Vigour Structural & Other Observations	Preliminary Management Recommendations	Retention Category	RPA (Sq M)	RPA Radius (M)
G8	Leyland cypress	4	3.5 3.5	500	M	2	10-20	Condition:P Vigour: Good Historically topped tree group.	Will require cyclical trimming if retained.	C 2	113.11	6.0
T9	Lawson cypress	8	3.5 3.5 3.5 3.5	500	E	2	20-40	Condition:G Vigour: Good Grows close to boundary, possibly 3rd party tree. Retaining wall separates trees from site.	None at the time of assessment.	C 2	113.11	6.0
T10	Leyland cypress,	7	5 5 5 5	550	M	3	10-20	Condition:M Vigour: Good Grows close to boundary, possibly 3rd party tree. Historically topped. Retaining wall separates trees from site.	None at the time of assessment.	C 2	136.87	6.6
T11	Monterey cypress	6.5	4.5 1 4.5 4.5	330	E		10-20	Condition:M Vigour: Good Electrical cable and joint box installed on base of tree. Retaining wall separates trees from site.	None at the time of assessment.	C 2	49.27	4.0

Key to Schedule (Also see following explanatory notes)

Age Class	Y (Young)	First 1/3 life expectancy
	S (Middle Mature)	1/3 to 2/3 life expectancy
	E (Early Mature)	Approachin Final 1/3 life expectancy
	M (Mature)	Final 1/3 life expectancy
	OM & V (Over Mature)	Over mature or Veteran
Stem Diameter	In millimetres	
RPA	Root protection area in square metres	
RPA Radius	Minimum radius to achieve RPA	

Physiological (Health) & Structural Condition	Good	Safe & free from defects with a healthy crown
	Moderate	Safe but with some defects, generally healthy crown
	Poor	Structural defects, poor general health and vigour
Tree Type	T = Individual tree, G = Group of trees, H = Hedge line, W = Woodland or woodland edge.	
Retention Category.	U	<10 years remaining Trees for removal
See Table 1 of BS5837:2012 for explanation	A	Min 40 years remaining High quality trees whose retention is most desirable
	B	Min 20 years remaining Moderate quality trees whose retention is desirable
	C	Min 10 years remaining Low quality trees or those <150mm diameter

Tree Schedule: No 21 Clevedon Road, Flax Bourton

Date of inspection: 27/02/2024

Tagged: No

Inspected By: Stuart Baker

Weather: Overcast.

Tree Type & Reference No.	Species	Height (m)	Spread (m) N E S W	Stem Diameter @ 1.5m (mm)	Age Class	Ground Clearance N E S W	Life Expectancy	Physiological Condition Vigour Structural & Other Observations	Preliminary Management Recommendations	Retention Category	RPA (Sq M)	RPA Radius (M)
G12	Beech, Ash	15	5 5 5 5	350	E	4	10-20	Condition:M Vigour: Good Lineal tree feature. Grows close to boundary, possibly 3rd party trees. Ash has symptoms of ADD, AHC 1-2.	Review condition of Ash in summer of 2024.	C 2	55.42	4.2
H13	Beech	1.5	1 1	50	S		20-40	Condition:G Vigour: Good Establishing hedgerow.	None at the time of assessment.	C 2	1.13	0.6
T14	Fir	7	2.5 2.5 2.5 2.5	220	S	1.5 1.5 1.5 2	10-20	Condition:M Vigour: Moderate Thin weak lower crown.	Remove to facilitate new landscaping.	C 1	21.90	2.6
G15	Leyland cypress	16	2 2 5 5	500	M	10	10-20	Condition:P Vigour: Good Historically topped at approx. 6m. Foliage growing to east historically removed up to approx. 10m. Growing at lower level to site, RPA likely bias to W. Grows close to boundary, possibly 3rd party trees.	Require proactive management of lateral and vertical growth. Would require tree owner permission.	C 2	113.11	6.0

Key to Schedule (Also see following explanatory notes)

Age Class	Y (Young)	First 1/3 life expectancy
	S (Middle Mature)	1/3 to 2/3 life expectancy
	E (Early Mature)	Approachin Final 1/3 life expectancy
	M (Mature)	Final 1/3 life expectancy
	OM & V (Over Mature)	Over mature or Veteran
Stem Diameter	In millimetres	
RPA	Root protection area in square metres	
RPA Radius	Minimum radius to achieve RPA	

Physiological (Health) & Structural Condition	Good	Safe & free from defects with a healthy crown
	Moderate	Safe but with some defects, generally healthy crown
	Poor	Structural defects, poor general health and vigour
Tree Type	T = Individual tree, G = Group of trees, H = Hedge line, W = Woodland or woodland edge.	
Retention Category.	U	<10 years remaining Trees for removal
See Table 1 of	A	Min 40 years remaining High quality trees whose retention is most desirable
BS5837:2012 for	B	Min 20 years remaining Moderate quality trees whose retention is desirable
explanation	C	Min 10 years remaining Low quality trees or those <150mm diameter

Tree Schedule: No 21 Clevedon Road, Flax Bourton

Date of inspection: 27/02/2024

Tagged: No

Inspected By: Stuart Baker

Weather: Overcast.

Tree Type & Reference No.	Species	Height (m)	Spread (m) N E S W	Stem Diameter @ 1.5m (mm)	Age Class	Ground Clearance N E S W	Life Expectancy	Physiological Condition Vigour Structural & Other Observations	Preliminary Management Recommendations	Retention Category	RPA (Sq M)	RPA Radius (M)
G16	Indian bean tree	7	3 2.5 4.5 3	400	E	3	10-20	Condition:M Vigour: Good Historically topped trees at 3m with 4m of dense vigorous regrowth. Growing on adjacent property. RPA reduced by 25% due to past management and reduced crown volume to stem ratio.	None at the time of assessment.	C 2	72.39	4.8
T17	Lawson cypress	19	5 5 5 5	500	M	3	20-40	Condition:G Vigour: Good Basal root flare lifting driveway block paving. Growing on adjacent property.	Will require crown lifting to 4m to allow access in to site.	B 1	113.11	6.0

Key to Schedule (Also see following explanatory notes)

Age Class	Y (Young)	First 1/3 life expectancy
	S (Middle Mature)	1/3 to 2/3 life expectancy
	E (Early Mature)	Approachin Final 1/3 life expectancy
	M (Mature)	Final 1/3 life expectancy
	OM & V (Over Mature)	Over mature or Veteran
Stem Diameter	In millimetres	
RPA	Root protection area in square metres	
RPA Radius	Minimum radius to achieve RPA	

Physiological (Health) & Structural Condition	Good	Safe & free from defects with a healthy crown
	Moderate	Safe but with some defects, generally healthy crown
	Poor	Structural defects, poor general health and vigour
Tree Type	T = Individual tree, G = Group of trees, H = Hedge line, W = Woodland or woodland edge.	
Retention Category.	U	<10 years remaining Trees for removal
See Table 1 of BS5837:2012 for explanation	A	Min 40 years remaining High quality trees whose retention is most desirable
	B	Min 20 years remaining Moderate quality trees whose retention is desirable
	C	Min 10 years remaining Low quality trees or those <150mm diameter

Explanatory Notes & Guidance

Reference Number corresponds to the numbering on the tree constraints or tree protection plans and metal tags affixed to the tree where used. Where the trees are covered by a tree preservation order the TPO reference number is shown in brackets.

Height dimensions are estimated due to ground level variations on site and given in metres.

Stem diameters measured at 1.5m from GL in centimetres. Where trees have two or more stems from below 1.5 metres all stem diameters are recorded where appropriate. Where multiple stems arise the aggregate basal area is used to calculate the RPA with the requisite diameters recorded in the Observations Column.

Crown Spread & Crown Clearance is the estimated radius distance from the canopy edge to the trunk and the relative clearance from ground level at the four cardinal compass points, measured in metres.

Life Expectancy: Estimated amount of time left based on the tree's age, condition, species and growing environment.

Physiological Condition is given in broad terms and is assessed where possible from leaf size, annual extension growth of the crown, crown density, the presence of deadwood and where possible in comparison with similar or same species onsite.

Structural Condition & Observations is based on the visual inspection of the form (shape) and any defects seen in the tree.

Further to the general comment the tree is briefly described with any defects noted and where applicable targets presented to the tree should it fail.

Preliminary Management Recommendations should reflect the condition findings and seek to address problems identified. Where appropriate an arboricultural justification is made to support the recommendation.

Retention Category this is assigned as U, A, B or C in accordance with Table 1 of BS5837:2012. See attached Annex for details.

RPA is the root protection area calculated in accordance with BS5837:2012 Table 2 and expressed as Square Metres. This is a minimum figure.

RPA Radius is the calculated radius measured from the centre of the subject tree that will achieve the minimum RPA. This is illustrative and is subject to an assessment by a competent arboriculturalist so that it reflects likely root extent given the local soil and rooting environment.

Annex 2: Abbreviations & Glossary of Terms

(Glossary From: D Lonsdale, Principles of Tree Hazard Assessment and Management)

GL	Ground level
mm	Millimetres
m	Metres
N,E,S,W	Cardinal compass points and points between i.e. SW

Adaptive growth: in tree biomechanics, the process whereby wood formation is influenced both in quantity and in quality by the action of gravitational force and mechanical stresses on the cambial zone (THIS HELPS TO MAINTAIN A UNIFORM DISTRIBUTION OF MECHANICAL STRESS.)

Anchorage: in trees, the holding of the root system within the soil, involving the flow of forces from the stem through the branches of the root system to the cohesive root/soil interface.

Assessment: in relation to tree hazards, the process of estimating the risk which a tree or group of trees poses to persons or property. (THIS INVOLVES A VISUAL INSPECTION FOR DEFECTS AND CONTRIBUTORY SITE FACTORS, AND SOMETIMES ALSO A DETAILED INVESTIGATION OF SUSPECTED DEFECTS.)

Bottle-butt: an atypical broadening of the stem base and buttresses of a tree, sometimes denoting a growth response to altered stress in this region (especially due to decay involving selective delignification.)

Bracket: in wood-decaying fungi, the type of fruit body produced by many species, plate-like to hoof-like in shape and with one side attached to the wood or bark.

Compartmentalisation: the confinement of disease, decay or other dysfunction within an anatomically discrete region of plant tissue, due to passive and/or active defences operating at the boundaries of the affected region.

Coppicing: the cutting of a woody plant near ground level to encourage the development of multiple stems.

Decurrent: in trees, a system of branching in which the crown is borne on a number of major widely-spreading limbs of similar size (cf. excurrent); also a term pertaining to certain fungi with toadstools as fruit bodies, whose gills run some distance down the stem; similarly pertaining to leaf bases and other plant organs which extend down the stem.

Distal: within part of a tree or other living organism, the region furthest from the main body of the organism, i.e. towards the tip (cf. proximal.)

Dysfunction: in woody tissues, the loss of physiological function, especially water conduction.

Etiolated: to be drawn up to the light and in so doing developing a low stem to height ratio with a small crown. Often relying on mutual support or shelter from neighbouring trees and thereby prone to failure if exposed due to thinning or removal of surrounding trees.

Epicormic: pertaining to shoots or roots which are initiated on mature woody stems; shoots may form in this way from dormant buds or they may be adventitious

Excurrent: in trees, a system of branching in which a single, distinct main stem bears a succession of branches whose diameter is progressively smaller towards the top of the tree; also pertaining to structures such as the midribs of leaves, which project beyond the lamina (cf. decurrent.)

Fungi: organisms of several evolutionary origins, most of which are multi-cellular and grow as branched filamentous cells (hyphae) within dead organic matter or living organisms (WOOD DECAY FUNGI ARE SPECIALISED FORMS WHICH HAVE CO-EVOLVED WITH WOODY PLANTS.)

Girdling: in woody plants, any form of damage which destroys or kills the bark and cambium all the way around a stem, branch or root, usually leading to the death of the distal portion.

Hazard beam: in a tree, an upwardly curved part in which strong internal stresses may occur without the compensatory formation of extra wood. (LONGITUDINAL SPLITTING OCCURS IN A SMALL PROPORTION OF SUCH CASES.)

Incipient failure: in wood tissues, a mechanical failure that results only in deformation or cracking, and not in the fall or detachment of the affected part.

Loading: a mechanical term describing the force acting on a structure from a particular source; e.g. the weight of the structure itself or wind pressure

Pollard head: the swollen region of a stem or branch that forms behind a pollarding cut

Pollarding: the complete or partial removal of the crown of a young tree so as to encourage the development of numerous branches; also further cutting to maintain this growth pattern.

Proximal: in the direction towards the main body of a tree or other living organism (cf. distal)

Pruning: the removal or cutting back of twigs, branches or roots; in some contexts applying only to twigs or small branches, but more often used to describe all kinds of work involving cutting.

Reaction zone: a zone, usually dark in colour, within the wood of a living tree, which forms a boundary – often a defensive one – between fully functional sapwood and dysfunctional or decaying wood.

Retrenchment: Crown retrenchment refers to the natural ageing process of trees when in full maturity the tree's roots capacity is exhausted and is unable to 'finance' further crown extension. This results in the natural dying back of the crown to re-establish a reduced canopy operating in balance with the root system. When this first occurs, the tree is said to enter the 'ancient stage' (which in favourable conditions may be the longest phase in the life of the tree).

Root flare: the curving region where a stem base joins the main lateral roots, usually composed of individual buttresses: more or less synonymous with the buttress zone. (cf. Basal flare)

Shear stress: mechanical stress, which tends to induce shearing.

Significant: in relation to health and safety, pertaining to hazards or risks which are deemed to exceed accepted standards of safety and which therefore require remedial or preventive action.

Stress: in plant physiology, a condition under which one or more physiological functions are not operating within their optimum range, for example due to lack of water, inadequate nutrition or extremes of temperature.

Stress: in mechanics, force acting on an object, measured per unit area of the object (cf. strain).

Target canker: a kind of perennial canker, containing concentric rings of dead occluding tissues.

Target pruning: the pruning of a twig or branch so that tissues recognisably belonging to the parent stem are retained.

Targets: in tree hazard assessment (and with somewhat incorrect terminology), persons or property or other things of value, which might be harmed by mechanical failure of the tree or by objects falling from it.

Tipping: in arboriculture, a term sometimes used to describe the shortening of branches.

Topping / Topped: relating to the removal of the crown of a tree often to primary or at minimum secondary branches. In most cases this is not considered good practice due to the creation of decay points in the crown and potentially weak attachment of any regrowth from truncated limbs to the parent limb.

Veteran Tree: is defined as 'a tree that is of interest biologically, culturally or aesthetically because of its age, size or condition'.

Vigour: in tree assessment, an overall measure of the rate of shoot production, shoot extension or diameter growth (cf. vitality).

Visual Tree Assessment: in addition to the literal meaning, a system expounded by Mattheck & Breloer (1995) & D Lonsdale (1999) Principles of Tree Hazard Assessment & Management, DETR, to aid the diagnosis of potential defects through visual signs and the application of mechanical criteria.

Vitality: in tree assessment, an overall appraisal of physiological and biochemical processes, in which high vitality equates with healthy function (cf. vigour.)

Windthrow: the blowing over of a tree at its roots

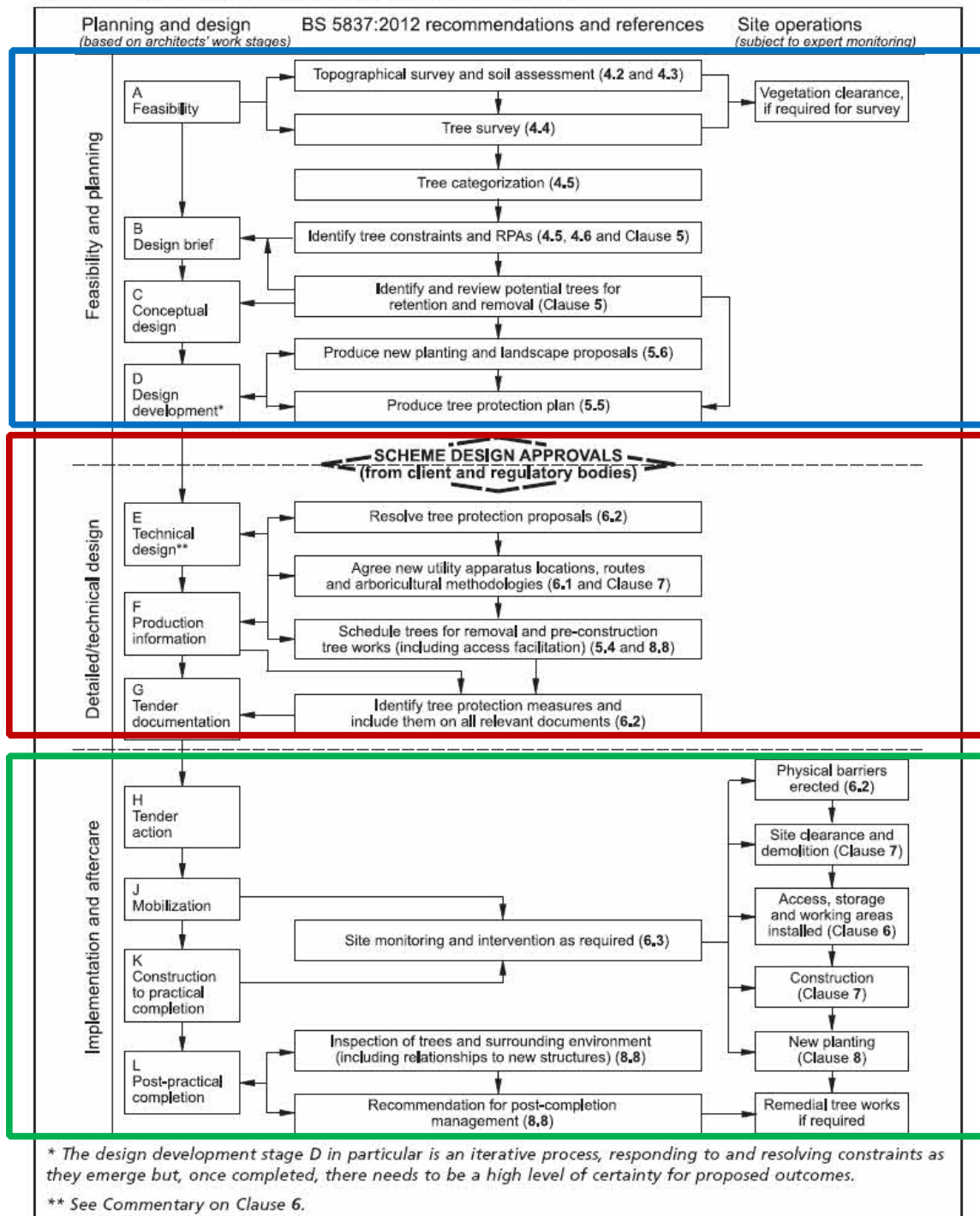
Woundwood: wood with atypical anatomical features, formed in the vicinity of a wound; also a term sometimes used to describe the occluding tissues around a wound in preference to the ambiguous term "callus".

Annex 3: Derived from Table 1 – Cascade chart for tree quality assessment (BS5837:2012)

TREES FOR REMOVAL				
Category and definition	Criteria			Identification on plan
<p>Category U Those 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</p>	<p>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 U category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)</p> <p>Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline</p> <p>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</p> <p>NOTE Category U trees can have existing or potential conservation value which might be desirable to preserve.</p>			<p>DARK RED (Dashed outline)</p>
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	
<p>Category A Those of high quality & value with and estimated life expectancy of at least 40 years.</p>	<p>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)</p>	<p>Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features (e.g. avenues or other arboricultural features assessed as groups)</p>	<p>Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)</p>	<p>LIGHT GREEN</p>
<p>Category B Those of moderate quality and value: with an estimated a minimum life expectancy of 20 years</p>	<p>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), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit a category A designation.</p>	<p>Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating that 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</p>	<p>Trees with clearly identifiable & material conservation or other cultural benefits</p>	<p>MID BLUE</p>
<p>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 stem diameter below 150mm</p>	<p>Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.</p>	<p>Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit</p>	<p>Trees with very limited conservation or other cultural benefits</p>	<p>GREY</p>
<p>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</p>				

Annex 4: Extract From BS5837:2012 Trees in relation to construction – Recommendations.
Section 3 Strategy, Figure 1

Figure 1 The design and construction process and tree care



Phase 1 – Survey: This phase establishes the tree constraints on site ready to inform the design process.

Phase 2 – Design & Tree Protection: This phase considers the trees to be retained as well as the above and below ground aspects of their protection. The tree retention and protection issues need to be addressed prior to a formal planning submission in order to avoid unnecessary or costly delays in gaining approval.

Phase 3 – Construction & Implementation: This phase includes the installation and maintenance of the agreed tree protection measures as well as the resolution of issues arising during construction. Early appointment of an Arboricultural Site Manager is essential and will save time, money and potential prosecution.