



Arboricultural Report

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Land to east of Fairleigh,
Station Road
Overton
Wrexham
LL13 0LJ

*For the purpose of dealing with all tree issues in accordance with
BS5837:2012 Trees in Relation to design, demolition and
construction: Recommendations for a development at the site*

Commissioned by:

David Parker
DPPA

Surveyed by:

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BSc (hons), M.Arbor.A, cert.Arb.(RFS)

Survey date:
15th April 2015

Report date:
16th April 2015

Planning Reference number: P/2014/0592



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1.0 Qualifications and Experience

- 1.1 My name is David Bailey. I am the owner of Old Oak Tree Care, an arboricultural consultancy business based on the Staffordshire/Shropshire border. I have run my business as a contractor since 2004 and progressed to work as a consultant since 2008.
- 1.2 I attained the honours degree in arboriculture at Myerscough College, Lancashire at an upper second level in 2011 after completing the foundation degree in arboriculture at merit level from Myerscough College, in 2008. I attained the certificate of arboriculture from the Royal Forestry Society in 2006.
- 1.3 I am a professional member of the Arboricultural Association and hold professional indemnity insurance to £1million.
- 1.4 Old Oak Tree Care is an approved contractor to Shropshire Council and carries out work for government agencies, county councils, town/parish councils, the Forestry Commission and private individuals.
- 1.5 In my work as a consultant, I have carried out surveys of trees in relation to construction, large scale health and safety tree surveys, private consultancy work, LPA appeals and work as an expert witness.



2.0 Instructions

- 2.1 I am instructed by David Parker of David Parker Planning Associates to carry out a tree survey at land to the east of Fairleigh, Station Road, Overton. I am to produce a tree report for an OUTLINE planning application to build a residential development.
- 2.2 It is proposed to build four properties with garages, access and services at the site. The land has a number of trees within it, mainly around the edge, and these trees will have an influence over the planning proposal.
- 2.3 I am therefore to visit the site, plot and survey all trees of importance, work with the architect to produce a viable design and then produce a tree report to support the planning application.
- 2.4 The survey is compliant with BS5837:2012 Trees in Relation to design, demolition and construction: *Recommendations*.

3.0 Summary

- 3.1 *The proposal is possible without causing any significant damage to the retained trees on the site. Public amenity loss will be minimal as tree removal is limited to trees that are largely hidden from view.*
- 3.2 *The development requires the removal of seven grade C trees, three grade U trees and a number of small, fallen or suckering willow stems. The majority of tree removals are for the purpose of increasing the quality of the retained trees.*
- 3.3 *The remaining trees can be sufficiently protected during development using standard tree protection methods.*
- 3.4 *The proposal is arboriculturally sound.*

4.0 Extent of Survey

- 4.1 The survey covers only arboricultural matters on, or adjacent to the site.
- 4.2 Statutory protection (either Tree Preservation Orders or Conservation Area Status), has not been investigated.
- 4.3 Information was gathered to comply with British Standard 5837:2012 Trees in relation to design, demolition and construction – Recommendations.
- 4.4 Trees were surveyed to assess their health, structural condition, estimated remaining longevity and amenity value to the area.

Land to east of Fairleigh, Station Road, Overton, Wrexham

- 4.5 The survey deals with identifying the constraints retained trees will impose on development of the site, what trees will need to be removed to allow development and how remaining trees can be protected to prevent loss of vitality within them.
- 4.6 Documents seen:
 - i) Site plan, supplied in electronic format.
 - ii) Proposed development sketch plan
- 4.7 Any tree work suggested or recommended in Section 8 is to comply with British Standard 3998:2010 Tree Work – Recommendations.

5.0 Survey Method

- 5.1 I visited the site on 14th April 2015. The weather was sunny with a light breeze. The survey was carried out from ground level.
- 5.2 Tree positions were plotted using triangulation from marked positions on the plan using a laser rangefinder.
- 5.3 Crown diameters and heights were estimated using a laser rangefinder.
- 5.4 I viewed each tree, or group, on the survey to assess structural integrity, health, presence of dysfunction and form.
- 5.5 Stem diameters were measured in millimetres, taking the circumference at approx 1.5 metres above the ground and dividing by π (Pi), in accordance with Annex C of BS5837:2012. Where ivy or any other material would give an incorrect measurement, a suitable correction was made before recording. Results were rounded up or down to the nearest 25mm.
- 5.6 The trees were assessed for longevity using survey data, experience gained in working with similar trees and likely management decisions.
- 5.7 Trees were placed into categories using the criteria set out in BS5837:2012 (Appendix C).
- 5.8 All trees that will be affected by the entire development were surveyed, excluding those due to distance from the development, those of insignificant nature or unremarkable trees that fall within the RPAs of more significant trees.
- 5.9 No invasive testing was carried out.
- 5.10 No soil samples were taken.
- 5.11 Internal investigations and tissue samples were not taken.



- 5.12 Tree information is plotted in Appendix A, overlaid on top of a topographical survey plan of the area.

6.0 The Site

- 6.1 The site is a roadside paddock on the outskirts of the village of Overton.
- 6.2 To the north and east are agricultural fields, to the south is Station Road, the A539 and to the west lies Fairleigh, a mature property with large gardens.
- 6.3 The profile of the site is generally flat. There is a pond in the south east corner which overflows into another smaller pond/marshy area to the north.
- 6.4 The site has a number of trees on it, generally around the edge of the property. The trees vary in age and species, generally adding to the character of the property and surrounding area. Some species are non native and a number detract from the mainly rural nature of the paddock.
- 6.5 Viewing the Geology of Britain Viewer as supplied by the British Geological Survey (www.bgs.ac.uk), it appears that the bedrock is a Kinnerton Sandstone Formation. Soil on this kind of bedrock is generally free draining with some water retentive areas and provides a good medium for the growth of trees. Vegetation sourced soil shrinkage and heave is not associated with this soil.
- 6.6 The soil is therefore likely to be a good medium for tree growth. As long as there are no buried obstructions, a typical root distribution could be expected for all of the trees on site.

7.0 Trees Surveyed

The schedule of trees surveyed is set out in the following section.

- Tree Number Tree identifier. Letter denotes species and number is sequential
- Species Using common names
- Height In metres
- Stem diameter Taken 1.5 m from the ground in accordance to Annex C of BS5837:2012
- Age class Either young, mid aged, early mature, mature, over mature or veteran
- Est R Cont Estimated Remaining Contribution. Trees useful life in years
- Physiological Assessment of the physiological condition of the tree
- Structural Assessment of the structural condition of the tree
- Ret. Cat. Retention Category. See Appendix C for details



- RPA radius Radius of the Root Protection Area (RPA) from the centre of the tree
- Fence from... Distance from the tree bark a protective fence should be placed, measured at 1.5 metres height
- Prelim Man Rec Preliminary management recommendations
- Notes Notes of importance to the survey

Tree Number	SB1	Species	Silver Birch	Height	16 metres
Stem diameter	500mm	Age class	Mature	Est R Cont	10-20 years
Physiological cond.	Good	Structural cond.	Good	Ret. Cat	C2
RPA radius	6m	Fence from bark distance	5.8m	RPA area	113m ²
Prelim Man Rec	None				
Notes	Largest birch. Grouped together, row of birches are category B				

Tree Number	SB2	Species	Silver Birch	Height	16 metres
Stem diameter	375mm	Age class	Mature	Est R Cont	10-20 years
Physiological cond.	Good	Structural cond.	Good	Ret. Cat	C2
RPA radius	4.5m	Fence from bark distance	4.3m	RPA area	64m ²
Prelim Man Rec	None				
Notes	Grouped together, row of birches are category B				

Tree Number	SB3	Species	Silver Birch	Height	10 metres
Stem diameter	225mm	Age class	Early Mature	Est R Cont	10-20 years
Physiological cond.	Good	Structural cond.	Good	Ret. Cat	C2
RPA radius	2.7m	Fence from bark distance	2.6m	RPA area	23m ²
Prelim Man Rec	Remove. Suppressed and misshaped				
Notes					

Tree Number	SB4	Species	Silver Birch	Height	15 metres
Stem diameter	425mm	Age class	Mature	Est R Cont	10-20 years
Physiological cond.	Good	Structural cond.	Good	Ret. Cat	C2
RPA radius	5.1m	Fence from bark distance	4.9m	RPA area	82m ²
Prelim Man Rec	None				
Notes	Grouped together, row of birches are category B				

Tree Number	SB5	Species	Silver Birch	Height	15 metres
Stem diameter	450mm	Age class	Mature	Est R Cont	10-20 years
Physiological cond.	Good	Structural cond.	Good	Ret. Cat	C2
RPA radius	5.4m	Fence from bark distance	5.2m	RPA area	92m ²
Prelim Man Rec	None				
Notes	Grouped together, row of birches are category B				



Tree Number	SB6	Species	Silver Birch	Height	12 metres
Stem diameter	275mm	Age class	Early Mature	Est R Cont	10-20 years
Physiological cond.	Good	Structural cond.	Good	Ret. Cat	C2
RPA radius	3.3m	Fence from bark distance	3.2m	RPA area	34m ²
Prelim Man Rec	Remove. Suppressed and misshaped				
Notes					

Tree Number	WRC7	Species	Western Red Cedar	Height	12 metres
Stem diameter	500mm	Age class	Mature	Est R Cont	10-20 years
Physiological cond.	Good	Structural cond.	Fair	Ret. Cat	C2
RPA radius	6m	Fence from bark distance	5.8m	RPA area	113m ²
Prelim Man Rec	Remove. Poor multi-stemmed tree				
Notes	Thinly leaved tree which detracts from the character of the site.				

Tree Number	O8	Species	Oak	Height	13 metres
Stem diameter	450mm	Age class	Mature	Est R Cont	,10 years
Physiological cond.	None	Structural cond.	Dead	Ret. Cat	U
RPA radius	-	Fence from bark distance	-	RPA area	-m ²
Prelim Man Rec	Remove. Tree has been nibbled to death by livestock.				
Notes					

Tree Number	O9	Species	Oak	Height	18 metres
Stem diameter	950mm	Age class	Mature	Est R Cont	20-40 years
Physiological cond.	Good	Structural cond.	Fair	Ret. Cat	B1
RPA radius	11.4m	Fence from bark distance	10.9	RPA area	408m ²
Prelim Man Rec	None				
Notes	Handsome field oak of excellent proportions. The base of the tree has suffered extensive nibbling. Resulting deadwood appears stable and woundwood development is strong. Tree is likely to recover but currently cannot be classified as an A category.				

Tree Number	P10	Species	Lombardy Poplar	Height	22 metres
Stem diameter	550mm	Age class	Mature	Est R Cont	10-20 years
Physiological cond.	Good	Structural cond.	Good	Ret. Cat	C2
RPA radius	6.6m	Fence from bark distance	6.3m	RPA area	137m ²
Prelim Man Rec	Remove				
Notes	Tree detracts from native character of tree stock. Short life makes these trees unsuitable for retention close to buildings				



Tree Number	P11	Species	Lombardy Poplar	Height	22 metres
Stem diameter	550mm	Age class	Mature	Est R Cont	10-20 years
Physiological cond.	Good	Structural cond.	Good	Ret. Cat	C2
RPA radius	6.6m	Fence from bark distance	6.3m	RPA area	137m ²
Prelim Man Rec	Remove				
Notes	Tree detracts from native character of tree stock. Short life makes these trees unsuitable for retention close to buildings				

Tree Number	O12	Species	Oak	Height	18.5 metres
Stem diameter	800mm	Age class	Mature	Est R Cont	20-40 years
Physiological cond.	Good	Structural cond.	Good	Ret. Cat	B2
RPA radius	9.6m	Fence from bark distance	9.2m	RPA area	290m ²
Prelim Man Rec	None				
Notes	Pond and marsh to west will have restricted root growth into the site. RPA deflected 25% to east				

Tree Number	S13	Species	Sycamore	Height	16 metres
Stem diameter	450mm	Age class	Mature	Est R Cont	10-20 years
Physiological cond.	Good	Structural cond.	Good	Ret. Cat	C2
RPA radius	5.4m	Fence from bark distance	5.2m	RPA area	92m ²
Prelim Man Rec	None				
Notes					

Tree Number	W14	Species	Willow	Height	12 metres
Stem diameter	400mm	Age class	Mid aged	Est R Cont	10-20 years
Physiological cond.	Good	Structural cond.	Good	Ret. Cat	C2
RPA radius	4.8m	Fence from bark distance	4.6m	RPA area	72m ²
Prelim Man Rec	Remove				
Notes	Tree of little value, remove for development				

Tree Number	S15	Species	Sycamore	Height	19 metres
Stem diameter	600mm	Age class	Mature	Est R Cont	10-20 years
Physiological cond.	Good	Structural cond.	Good	Ret. Cat	C2
RPA radius	7.2m	Fence from bark distance	6.9m	RPA area	163m ²
Prelim Man Rec	None				
Notes					



Tree Number	O16	Species	Oak	Height	19 metres
Stem diameter	875mm	Age class	Mature	Est R Cont	20-40 years
Physiological cond.	Good	Structural cond.	Good	Ret. Cat	B2
RPA radius	10.5m	Fence from bark distance	10.1	RPA area	346m ²
Prelim Man Rec	None				
Notes	Pond has altered shape of RPA				

Tree Number	Y17	Species	Yew	Height	8 metres
Stem diameter	450mm	Age class	Mature	Est R Cont	10-20 years
Physiological cond.	Good	Structural cond.	Poor	Ret. Cat	C2
RPA radius	5.4mm	Fence from bark distance	5.2m	RPA area	92m ²
Prelim Man Rec	Tidy up stem				
Notes	Scrappy tree that has semi collapsed into pond. A long life is not expected but it does bring some character to the area and screens the utility box behind.				

Tree Number	W18	Species	Willow	Height	5 metres
Stem diameter	800mm	Age class	Mature	Est R Cont	<10years
Physiological cond.	Poor	Structural cond.	Fallen over	Ret. Cat	Y
RPA radius	-m	Fence from bark distance	-m	RPA area	-m ²
Prelim Man Rec	Remove				
Notes	Another willow beyond Y17 has fallen over and should be removed too. Small willow scrub in this locality should be removed also.				

Tree Number	C19	Species	Japanese Crab	Height	6 metres
Stem diameter	150mm	Age class	Young	Est R Cont	10-20 years
Physiological cond.	Good	Structural cond.	Good	Ret. Cat	C2
RPA radius	1.8m	Fence from bark distance	1.8m	RPA area	10m ²
Prelim Man Rec	None				
Notes					

Tree Number	C20	Species	Japanese Crab	Height	8 metres
Stem diameter	400mm	Age class	Mature	Est R Cont	10-20 years
Physiological cond.	Good	Structural cond.	Fair	Ret. Cat	C2
RPA radius	4.8m	Fence from bark distance	4.6m	RPA area	72m ²
Prelim Man Rec	Reduce 1 metre of length from the southernmost stem to reduce risk of failure				
Notes	Some decay found in main stem but with a generally healthy form. Southernmost stem appears dead but can be retained.				



Tree Number	A21	Species	Ash	Height	11 metres
Stem diameter	400mm	Age class	Mid aged	Est R Cont	<10 years
Physiological cond.	Good	Structural cond.	Poor	Ret. Cat	U
RPA radius	4.8m	Fence from bark distance	4.6m	RPA area	72m ²
Prelim Man Rec	Remove				
Notes	Very tight forks at base of tree. Failure is predictable at these points. A small cherry and hawthorn are found behind this tree. Retain these after removing 2 metres from the top of the cherry and protect with a fence 2 metres from it.				

Tree Number	B22	Species	Beech	Height	22 metres
Stem diameter	1125mm	Age class	Mature	Est R Cont	20-40 years
Physiological cond.	Good	Structural cond.	Good	Ret. Cat	A1
RPA radius	13.5m	Fence from bark distance	12.9	RPA area	573m ²
Prelim Man Rec	None				
Notes	***In grounds of Fairleigh*** Large Beech of excellent form and high amenity value. RPA slightly altered by road.				

8.0 Arboricultural Work Required

- 8.1 Silver birches SB3 and SB6, both category C trees are both suppressed trees with misshaped crowns. The form of the remaining four silver birches will be increased by the removal of these two trees.
- 8.2 WRC7, a category C western red cedar is a poor tree with little foliage. Its removal would return this part of the site back to a native set of trees.
- 8.3 O8 is a dead category U tree. It could be left as dead wood habitat at 4 metres high. The trunk shows little decay and could remain in situ for many years.
- 8.4 The category C Poplars P10 and P11 will grow considerably higher than their current height and will cause concern for new residents. Having a relatively short life span and being non native, these trees could be removed to enhance the naturalised tree population of the site.
- 8.5 W14 is an unremarkable category C willow which is surrounded by taller and more impressive species. These willows have short life spans where the surrounding oak and sycamore will live far beyond this tree. Its removal will also grant more garden space to the house.
- 8.6 A number of still alive but fallen willow trees, including W18, in the south eastern corner should be removed as with other willow scrub that has suckered up. This will give more room for the garden of plot 4.

- 8.7 Y17 is a category C Yew that has semi collapsed into a pond. Although the crown is now beginning to re-shape itself, this tree could remain as a feature although its life expectancy is unlikely to be long.
- 8.8 C19 is a small category C Japanese Crab that will need to be removed for the installation of the entrance to the development.
- 8.9 The category C Japanese Crab, C20 is a larger tree who's RPA might be slightly encroached by the footpath into the property. This encroachment will be small and can be compensated for by adding extra protected RPA to the west of the tree.
- 8.10 A21 is a category C Ash of moderate age. The included bark unions at the base of the tree indicated that within the relatively near future the tree will fail at this point. Tree surgery to try to prevent this from happening will open large wounds that may become decayed at the base of the trees rendering it unsafe. This tree should therefore be removed.
- 8.11 A small cherry tree is growing behind A21. Although very small it will add maturity to the garden of plot 1. With the removal of A21, this tree will be top heavy and should have the top 2 metres of the tree removed to ensure stability.

9.0 Tree Protection

- 9.1 Root Protection Areas (RPAs) do not show the total extent of a trees roots but are an area around a tree that contains the minimum amount of roots and rooting medium to maintain the viability of the tree. This area is prioritised for the tree. The RPA should contain the area of growing medium as set out in section 7 even if the RPA shape needs to be adjusted to more accurately reflect the rooting architecture.
- 9.2 RPAs are usually drawn as a circle, its radius measuring 12 times the diameter of the tree trunk. Although tree roots are often found underneath roads, buildings and in inhospitable places, the tree would suffer if this area was 'set aside' for the roots, especially if there was better rooting mediums close by.
- 9.3 Where RPAs are not drawn as a circle, it has been estimated that the rooting architecture of the tree will not prosper in parts of its environment where rooting is difficult such as roads, buildings, underground obstructions or natural barriers such as rivers or embankments.
- 9.4 The Tree Protection Plan (TPP), Appendix B, shows all retained trees and how their RPAs are to be protected by a fence as set out in Appendix D.
- 9.5 RPAs are to be protected from infill, chemical incursion, fuel spillage, building material storage, solid waste disposal, liquid waste disposal or soil compaction of any kind, be it machinery, goods, foot traffic or vehicular.



- 9.6 Where specified, tree protection should be facilitated by a fence. Examples of such a fence are given in Appendix D.

10.0 Post Development Pressure

- 10.1 Developments should be designed to ensure that retained trees do not create undue pressure on new residents or are liable to be aesthetically harmed by heavy handed tree surgery or removed.
- 10.2 The house in Plot 1 is 20 metres at its nearest point to B22 and 7.5 metres from C20. I consider this to be a good distance. The shading arch in Appendix A indicated that just a small time will see plot 1 shaded. The shape of the crown of B22 will also allow light underneath this canopy, therefore shading will be even less than indicated.
- 10.3 Plot 4 will be 13 metres from O13 and 10 metres from S13 at its nearest point. The crown of O13 will be 3.5 metres from the house at its nearest point. This is an acceptable clearance which is unlikely to become smaller as the tree is unlikely to grow considerably in branch spread. In the future it may be that some pruning back of branches is required. This could easily be done in a sympathetic and correct manner. Very little shading of plot 4 is to be expected.
- 10.4 I would expect the post developmental pressure on the trees to be low.

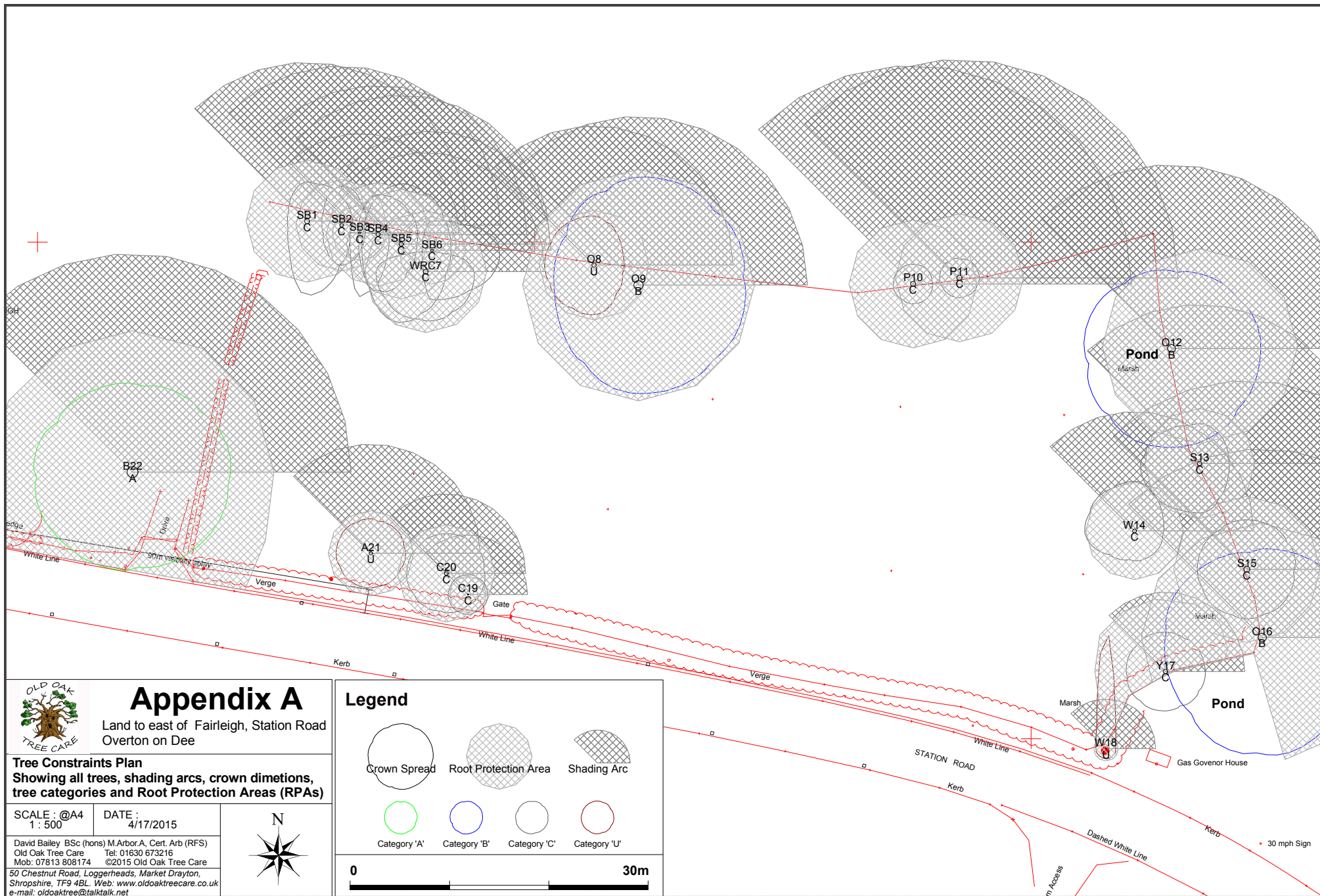
11.0 Conclusion

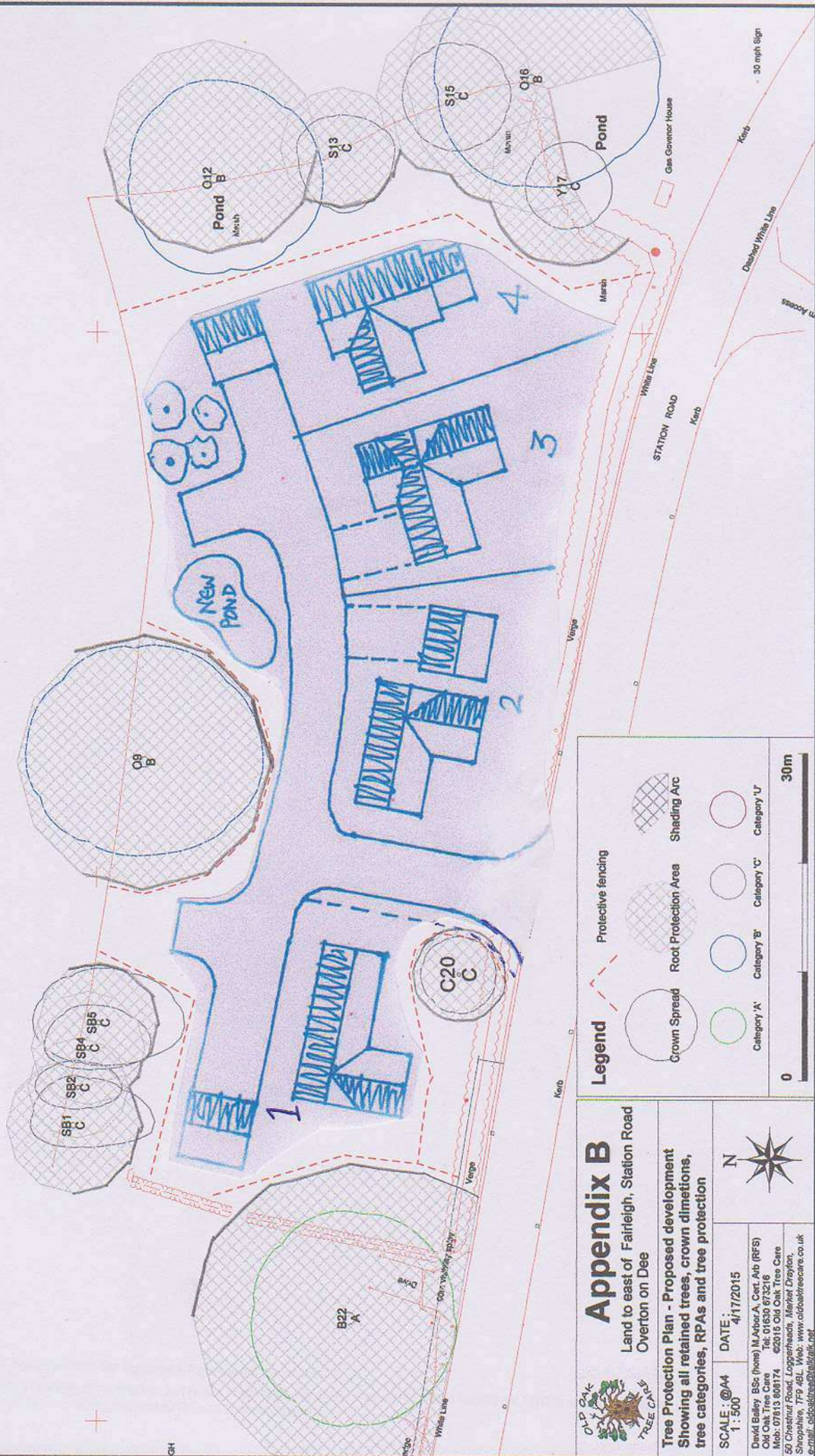
- 11.1 The proposed scheme is not significantly constrained by the trees, but will be possible with the loss of seven grade C and three grade U trees together with the loss of a small number of scrub stems and other fallen trees. The majority of trees to be lost are for the reason of increasing the amenity and quality of the remaining trees on site.
- 11.2 There will be no loss of amenity provided by trees at the site. The removal of poorly shaped, unnaturalised, dead and short-living species is likely to increase the amenable nature of the remaining trees
- 11.3 The RPA of all trees can be protected using standard tree protection measures. Where the RPA of C20 will require some digging into, the area is small and away from primary rooting areas. Extra rooting area has been added to compensate for this encroachment and I would not expect the tree to suffer.



- 11.4 The proposal is arboriculturally sound and complies with British Standard 5837:2012 Trees in relation to design, demolition, and construction – Recommendations.

The data, views and opinions of this report relate to the survey undertaken on the date shown and do not take into account effects of weather conditions, vandalism or accidental damage. Neither can the effects of tree surgery work, poorly executed or which does not comply with BS3998:2010, be predicted. Old Oak Tree Care cannot accept any liability in connection with any of these factors. This report becomes out of date and in need of renewal two years from the survey date. Data relating to tree health and condition will become out of date and in need of renewal six months from the survey date.





Appendix B

Land to east of Fairleigh, Station Road
Overton on Dee

Tree Protection Plan - Proposed development
Showing all retained trees, crown dimensions,
tree categories, RPAs and tree protection

SCALE: @A4
1:500

DATE: 4/11/2015

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Legend

Protective fencing



Shading Arc



Root Protection Area



Grown Spread



Category 'U'



Category 'C'



Category 'B'



Category 'A'



30m

0

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)	Identification on plan
Trees unsuitable for retention (see Note)		
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	- 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 category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) - Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline - Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.	See Table 2
Trees to be considered for retention		
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years		
1 Mainly arboricultural qualities		
Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)
2 Mainly landscape qualities		
Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and 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 the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value
3 Mainly cultural values, including conservation		
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years		
2 Mainly landscape qualities		
Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	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/transient landscape benefits	Trees with no material conservation or other cultural value
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm		
See Table 2		

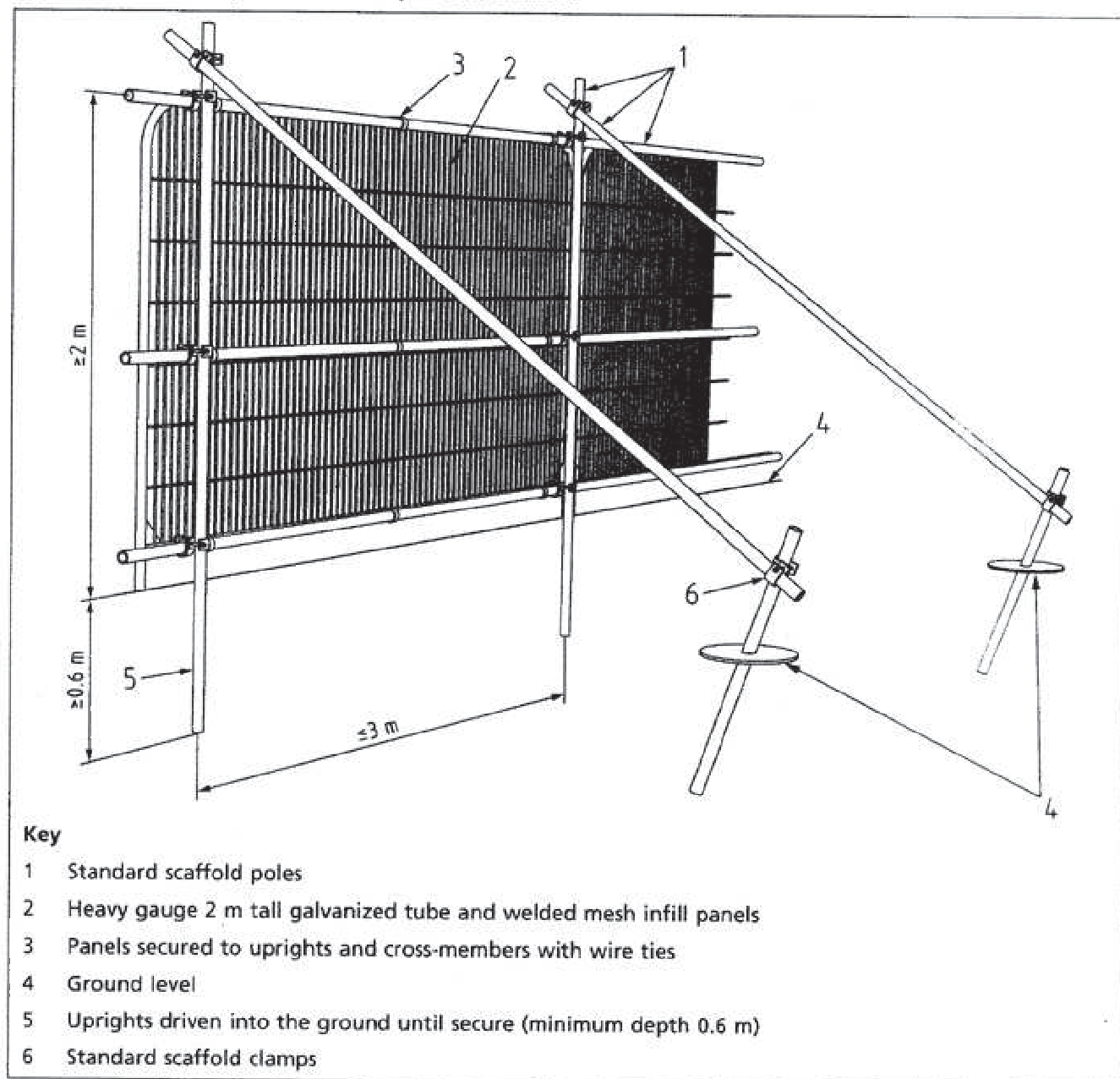
Appendix D Extract from British Standard BS5837:2012

6.2.2.1 Barriers should be fit for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained tree(s). Barriers should be maintained to ensure that they remain rigid and complete.

6.2.2.2 The default specification should consist of a vertical and horizontal scaffold framework, well braced to resist impacts, as illustrated in Figure 2. The vertical tubes should be spaced at a maximum interval of 3 m and driven securely into the ground. Onto this framework, welded mesh panels should be securely fixed. Care should be exercised when locating the vertical poles to avoid underground services and, in the case of the bracing poles, also to avoid contact with structural roots. If the presence of underground services precludes the use of driven poles, an alternative specification should be prepared in conjunction with the project arboriculturist that provides an equal level of protection. Such alternatives could include the attachment of the panels to a free-standing scaffold support framework.

6.2.2.3 Where the site circumstances and associated risk of damaging incursion into the RPA do not necessitate the default level of protection, an alternative specification should be prepared by the project arboriculturist and, where relevant, agreed with the local planning authority. For example, 2 m tall welded mesh panels on rubber or concrete feet might provide an adequate level of protection from cars, vans, pedestrians and manually operated plant. In such cases, the fence panels should be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The distance between the fence couplers should be at least 1 m and should be uniform throughout the fence. The panels should be supported on the inner side by stabilizer struts, which should normally be attached to a base plate secured with ground pins (Figure 3a). Where the fencing is to be erected

Figure 2 Default specification for protective barrier



Appendix D (cont.) Extract from British Standard 5837:2012

on retained hard surfacing or it is otherwise unfeasible to use ground pins, e.g. due to the presence of underground services, the stabilizer struts should be mounted on a block tray (Figure 3b).

NOTE 1 Examples of configurations for steel mesh perimeter fencing systems are given in BS 1722-18.

NOTE 2 It might be feasible on some sites to use temporary site office buildings as components of the tree protection barriers, provided these can be installed and removed without damaging the retained trees or their rooting environment.

6.2.2.4 All-weather notices should be attached to the barrier with words such as: "CONSTRUCTION EXCLUSION ZONE – NO ACCESS".

Figure 3 Examples of above-ground stabilizing systems

