

Arboricultural Impact Assessment
Land at Dappers Lane
Angmering
West Sussex

Report compiled by:
Nick Betts
HND Forestry M.Arbor.A

PJC CONSULTANCY LTD

PJC Ref No: PJC/3287/13

Summary

This report was commissioned to satisfy the requirements of arboricultural issues defined by planning policy, at the request of Clare Bartlett at Strutt and Parker LLP.

The project requires tree removal to achieve the required visibility splay for the proposed site access. Tree loss should not be detrimental to the wider landscape due to the sites secluded nature and low quality of the existing trees.

The proposed project should not affect existing and/or retained trees on the site as long as protection measures set out in BS5837: 2012 *Trees in relation to design, demolition and construction* and outlined in this report are followed.

Objectives of this report

My involvement in this project can be defined by the following objectives:

To provide a schedule of the existing trees that are situated in areas that are likely to be potentially affected by the proposed construction project.

To classify the existing trees using the process defined by BS5837: 2012 '*Trees in relation to design, demolition and construction – Recommendations*'.

To provide arboricultural guidance on protection measures to be implemented during the construction process, and prevent future conflict between trees and structures.

To promote the retention of trees wherever feasible and appropriate.

CONTENTS

- 1 Introduction
- 2 Site visit and observations
- 3 Appraisal
- 4 Arboricultural impact assessment
- 5 Tree protection recommendations
- 6 Conclusions
- 7 Other considerations
- 8 Implementation of Works
- Appendices

1 INTRODUCTION

1.1 Brief: I have been commissioned by Clare Bartlett of Strutt and Parker LLP to provide a tree survey and arboricultural impact assessment for a proposed development at the site at Dappers Lane in Angmering, West Sussex.

1.2 Documents and information provided: I was provided with the following documents relating to the site:

- Drawing ref. Site Location Plan
- Drawing ref. Proposed Layout Plan
- Drawing ref. Highways Plan

1.3 Scope of this report: This report is only concerned with the trees within the property boundaries of the site, or in areas that have the potential to be affected by construction works.

1.4 Background information: A proposal has been outlined to construct a care home and a number of single storey age restricted cottages at the site. PJC Consultancy has been commissioned to undertake a tree survey and provide an arboricultural impact assessment following the guidelines set out in BS5837: 2012 '*Trees in relation to design, demolition and construction – Recommendations*'.

1.5 Qualifications: I have received a Higher National Diploma in Forestry and am a professional member of the Arboricultural Association. I have over twelve years experience in the arboricultural industry, working in both the commercial and private industries. I began work as a forestry worker before training as a tree surgeon and then progressing into consultancy. I have been a practising consultant since 2006.

2 SITE VISIT AND OBSERVATIONS

2.1 **Site visit:** I carried out a site visit on 22nd October 2013. The weather conditions at the time were overcast with heavy rain. The visibility was good.

2.2 **Brief site description:** The site is situated to the north of Angmering town centre. The surrounding land use is comprised of a mixture of residential properties, light industrial units and small paddocks. The site itself consists of the current property and garden with an area of scrub to the south.

2.3 **Identification and location of trees:** The trees are not number tagged but their locations are marked on the Tree Constraints Plan in Appendix 1.

2.4 **Tree observations:** I visually inspected the trees from within the boundaries of the property. The survey methodology was restricted to a visual assessment. The height, crown spread and crown clearance for each tree was estimated to the nearest metre. The DBH (stem diameter at breast height) was measured to the nearest millimetre.

2.5 **Limitations of the Survey:** Existing tree positions were shown on the drawings provided. The positions of trees on the Tree Constraints Plan and Tree Protection Plan in Appendix 1 should be checked on site, prior to construction.

3 APPRAISAL

3.1 The trees were assessed and categorised using the cascade chart in BS5837: 2012 *Trees in relation to design, demolition and construction – Recommendations*. Their dimensions were recorded, and their positions plotted on the Tree Constraints Plan in Appendix 1. The Tree Survey Schedule in Appendix 2 contains more detailed information for each tree.

3.2 The categorisation of trees is based on a number of factors. The initial category is U for trees that are in such a condition that they cannot realistically be retained as living trees in the context of the current land use for more than ten years. Category U trees do not necessarily need to be removed if they do not conflict with the proposed development or are not dangerous. The remaining trees are then assessed for their arboricultural, landscape and historical, (or cultural) contribution. This assessment takes into account defects and previous pruning to put the trees into A, B and C categories. The highest categorisation is category A, with the lowest being category C. Category C trees are not normally retained if they pose a constraint to development. The cascade chart further explaining the above is included in Appendix 3.

3.3 A total of nine trees, tree groups and hedges were surveyed and included in the Tree Survey Schedule. No tree was categorised as A with four categorised as B and five categorised as C. The predicted contribution of part of one tree group is less than ten years, leading to its categorisation as U.

3.4 The trees, tree groups and hedgerows included in this survey are all located along the western boundary with Dappers Lane. The main tree species is predominantly juvenile and early mature ash, whilst the hedgerows consist of a mix of ash, elm and elder.

3.5 The majority of the trees are of small size and stature and do not contribute significantly to the wider landscape. The hedgerows are relatively unmanaged with elm affected by Dutch elm disease which has led to the death of a number of trees. The trees in Group G9 at the southern end of Dappers Lane have poor form and growth habit due to their densely spaced growing environment.

4 ARBORICULTURAL IMPACT ASSESSMENT

4.1 The proposed layout requires access onto Dappers Lane, with an associated footpath and good visibility. In order to excavate the road frontage to provide a footpath and improve the current visibility a number of trees and parts of the hedgerow will need to be removed. As previously discussed in the appraisal the trees are generally of low quality and visual amenity and their loss should not affect the wider landscape. Tree planting is proposed around the site which will compensate for any loss of tree cover.

4.2 Tree works are required to cut back parts of the hedge obscuring the visibility splay. When this is undertaken the dead and dying elms should also be removed in the interest of long term health and safety.

4.3 Shade cast by trees should not affect the proposed layout as there are few trees of any significant size on the road frontage with Dappers Lane. Replacement planting in this area as part of the soft landscaping should avoid trees that have the potential to reach large mature sizes.

5 TREE PROTECTION RECOMMENDATIONS

5.1 Each tree's DBH was recorded, and applied to the formula found in Appendix 4. The resulting dimensions equal each tree's Root Protection Areas that are plotted on to the Tree Constraints Plan in Appendix 1, and added to the Tree Survey Schedule in Appendix 2. These are represented as a circle on the plan, and are colour coded depending on the category they were classed in using the cascade chart in Appendix 3.

5.2 The disturbance of a tree's root system can result in crown dieback and even death of the tree. Roots are used to support the tree structurally and act as transport for water and nutrients. Direct damage such as root severance can lead to ill health, as can compaction of the soil by construction traffic, heavy plant and storage of materials. Changing the nature of the surface above growing medium, i.e. from porous to non-porous can alter the resources available to the tree, which in turn can lead to its decline.

5.3 The root protection areas must be left free from excavation and disturbance, and protected during any proposed works. Protection should be in the form of fencing as defined in Appendix 5, and signs affixed as shown in Appendix 6. Fencing location is shown on the Tree Protection Plan in Appendix 1.

5.4 Any final design must show service locations and their routing. These must be located outside of the tree's RPA's where they are underground and outside of the anticipated area of mature crown spread where above ground.

5.5 A pre-commencement meeting with all parties and the Local Authority Arboricultural Officer is recommended to agree working methods before any works are undertaken. All contractors should be briefed about tree related site factors as part of the site safety briefing.

5.6 A system and programme of onsite monitoring by the appointed arboricultural consultant should be agreed with the Local Authority Arboricultural Officer, if it is deemed necessary. Record sheets of monitoring site visits should be available for inspection by all parties, and forwarded to a designated employee of the Local Authority.

5.7 If significant root growth is disturbed during construction activities that are not within the scope of this report all work should cease and a suitably qualified arboriculturalist consulted. It should be remembered that whilst root protection areas are part of industry best practice, tree root growth is influenced by a number of factors and may not conform to expected ideals.

6 CONCLUSIONS

6.1 Although a number of small trees and woody shrubs have been recommended for removal if they pose a constraint to development, their loss should not be detrimental to wider landscape or have an adverse impact on local visual amenity. Their loss could be mitigated by replanting with suitable species in an appropriate location during the soft landscaping phase of construction. If this is carried out consideration should be given to their location to avoid conflict with the proposed building and associated services.

6.2 Based on the above assessment, trees recommended for retention in this report can be protected during the proposed construction and fully supported following completion of the development.

7 OTHER CONSIDERATIONS

7.1 No Tree Preservation Order (TPO) protects the trees on this site on the date of this report. However, any persons proposing to undertake tree works must check the status of these trees with the local authority, and gain necessary consent before works are undertaken.

7.2 Financial penalties and/or criminal proceedings can result if tree works are carried out on a protected tree without consent. The entirety of the tree is protected, both above and below ground.

7.3 Trees should be checked for protected species before works are undertaken. It is against the law to disturb bats or their roosts under the Conservation of Habitat and Species Regulations. Nesting birds are protected by the Wildlife and Countryside Act. If protected species are discovered, Natural England should be contacted for advice.

7.4 The trees at this site were assessed for their condition and safety in relation to the average range of weather conditions that the region experiences. Any weather events that exceed the average norm cannot be predicted, and so their effects are not considered within this report.

7.5 The views and opinions contained within this report are entirely those of the author.

8 IMPLEMENTATION OF WORKS

8.1 The contractors should carry out all tree works to BS 3998 *Recommendations for Tree Works* (2010) as modified by research that is more recent. They should also carry relevant, adequate and up to date insurance.

8.2 It is also recommended that all tree works are carried out by an Arboricultural Association approved contractor. Approved contractors are expected to work to industry best standards, and the Arboricultural Association website contains contact details and information on engaging a suitable contractor.

Contact details

PJC Consultancy Ltd
Chapter House
Priesthawes Farm
Hailsham Road
Polegate
East Sussex
BN26 6QU

Tel: 01323 768155
Fax: 01323 768244

E-mail: nick@pjconsultancy.com

Author: Nick Betts

Date: 6th November 2013

APPENDIX 1 Tree Constraints Plan and Tree Protection Plan



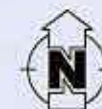
Key:

-  RPA for CAT B Tree*
-  RPA for CAT C Tree*
-  Tree canopy

* Tree categorised in accordance with BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'.

Appendix 2, (Tree Survey Schedule) contained within the arboricultural report ref. no. PJC/3267/13 contains further information for each tree.

This drawing should be viewed in colour.



Site: Dappers Lane, Angmering

Client: Strutt and Parker

Surveyor: Peter Davies

Date Drawn: 06/11/13

Scale: 1:500 at A3

Drawing Number: PJC/3267/13/A

Drawing Title: Tree Constraints Plan



PJC Consultancy
 Chapter House, Priesthewes Farm, Hailsham Road, Polegate, East Sussex, BN26 6QU
 T: 01323 768155 F: 01323 768244 W: www.pjcconsultancy.com



Key:

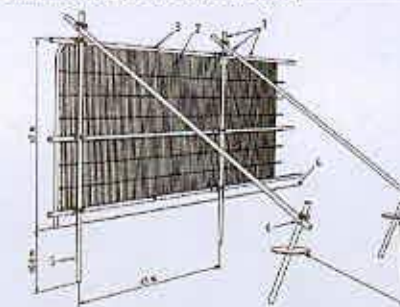
- RPA for CAT B Tree* to be retained
- RPA for CAT C Tree* to be retained
- Tree canopy
- RPA for CAT B Tree* to be removed
- RPA for CAT C Tree* to be removed
- Canopy to be removed
- Tree protection fencing

* Tree categorised in accordance with BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations'.

Appendix 2, (Tree Survey Schedule) contained within the arboricultural report ref. no. PJC/3287/13 contains further information for each tree.

This drawing should be viewed in colour.

Specification for Tree Protection Fencing:



- See
1. Standard scaffold posts
 2. Heavy gauge 2 x 4" vertical rails and vertical cross bracing
 3. Panels secured to up-lifts and cross members with wire ties
 4. Ground level
 5. Stringers driven into the ground with secure brackets back 800 mm
 6. Standard scaffold clamps

KEY

- Prop
- Excl
- Tree
- New



Site: Dappers Lane, Angmering

Client: Strutt and Parker

Surveyor: Peter Davies

Date Drawn: 06/11/13

Scale: 1:500 at A3

Drawing Number: PJC/3287/13/B

Drawing Title: Tree Protection Plan

PJC Consultancy
 Chapter House, Priestshaws Farm, Hailsham Road, Polegate, East Sussex, BN26 6CU
 t: 01323 768165 f: 01323 768244 w: www.pjcconsultancy.com

APPENDIX 2 Tree Survey Schedule

Tree Survey Schedule

				Client: Strutt and Parker Site: Dappers Lane, Angmering, West Sussex Date: 22/11/2013 Surveyor: Nick Betts							T: Individual tree or shrub G: Group of 2 or more trees H: Hedgerow W: Woodland block		
Tree ref. no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)	Crown clearance (m)	Age class	Physiological condition	Structural condition	Comments	Preliminary management recommendation	Category grading	Root Protection Area (m ²)	Root Protection Radius (m)
G1	Ash, (<i>Fraxinus excelsior</i>)	6	250	N: 2 E: 2 S: 2 W: 2	3	Juvenile	Fair	Fair	None	No action required	C2	28.2	3.0
T2	Ash, (<i>Fraxinus excelsior</i>)	8	210	N: 2 E: 2 S: 2 W: 2	3	Early mature	Fair	Fair	Poor form and growth habit	No action required	B1	19.6	2.5
T3	Ash, (<i>Fraxinus excelsior</i>)	8	280	N: 2 E: 3 S: 2 W: 3	3	Early mature	Fair	Fair	Poor form and growth habit	Fell to achieve required visibility	B1	34.2	3.3
H4	Elm, (<i>Ulmus spp.</i>)	11	100	N: 1 E: 1 S: 1 W: 1	0	Juvenile	Fair	Fair	None	Fell to achieve required visibility	C1	4.5	1.2
G5	3x Ash, (<i>Fraxinus excelsior</i>)	10	310	N: 2 E: 2 S: 2 W: 2	6	Early mature	Fair	Fair	Northern most tree exhibiting crown dieback	Fell to achieve required visibility	B2	43.0	3.7
T6	Ash, (<i>Fraxinus excelsior</i>)	12	420	N: 3 E: 4 S: 3 W: 4	5	Mature	Good	Good	None	Fell to achieve required visibility	B1	7.8	5.0

Tree Survey Schedule

				Client: Strutt and Parker Site: Dappers Lane, Angmering, West Sussex Date: 22/11/2013 Surveyor: Nick Betts							T: Individual tree or shrub G: Group of 2 or more trees H: Hedgerow W: Woodland block		
Tree ref. no.	Species	Height (m)	Stem diameter (mm)	Branch spread (m)	Crown clearance (m)	Age class	Physiological condition	Structural condition	Comments	Preliminary management recommendation	Category grading	Root Protection Area (m ²)	Root Protection Radius (m)
T7	Sycamore, (<i>Acer Psuedoplatanus</i>)	6	120	N: 0 E: 1 S: 1 W: 1	2	Juvenile	Poor	Poor	Suppressed by surrounding trees	Fell to achieve required visibility	C1	6.5	1.4
H8	Ash, (<i>Fraxinus excelsior</i>) Elm, (<i>Ulmus spp.</i>) Elder, (<i>Sambucas nigra</i>)	3 to 5	100	N: 1 E: 1 S: 1 W: 1	0	Juvenile	Poor	Poor	Dead elms within hedge	Prune to achieve visibility, remove dead elms	C2/R	4.5	1.2
G9	Sycamore, (<i>Acer Psuedoplatanus</i>) Hawthorn, (<i>Crataegus monogyna</i>)	8 to 10	300	N: 2 E: 2 S: 2 W: 2	3	Mature	Fair	Fair	Dense group leading to poor form and suppression	Crown lift to achieve visibility splay	C2	40.7	3.6

APPENDIX 3 Cascade Chart for Tree Quality Assessment

Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of their 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 the 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 <i>Note: Category U trees can have existing or potential conservation value which it might be desirable to preserve</i>			Red
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Trees to be considered for retention				
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	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)	Green
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remedial 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 value 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	Blue
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	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	Grey

APPENDIX 4 Root Protection Area Formulas

CALCULATING THE RPA

For single stemmed trees

$$\text{RPA(m}^2\text{)} = \frac{(\text{stem diameter (mm)} @ 1.5 \text{ m} \times 12)^2 \times 3.142}{1000}$$

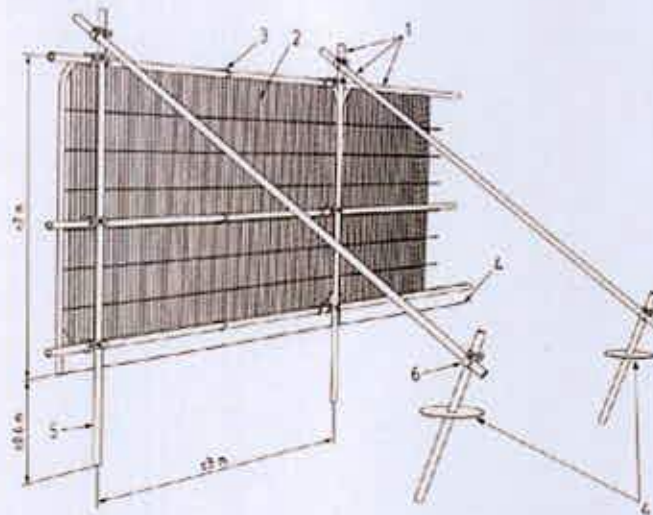
For trees with two to five stems, a combined stem diameter is calculated as follows:

$$\sqrt{(\text{stem diameter } 1)^2 + (\text{stem diameter } 2)^2 \dots + (\text{stem diameter } 5)^2}$$

For trees with more than five stems, the combine stem diameter is calculated as follows:

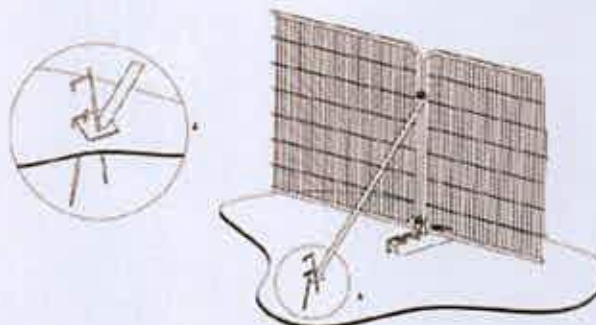
$$\sqrt{(\text{mean stem diameter})^2 \times \text{number of stems}}$$

APPENDIX 5 Tree Protection Fencing Specification

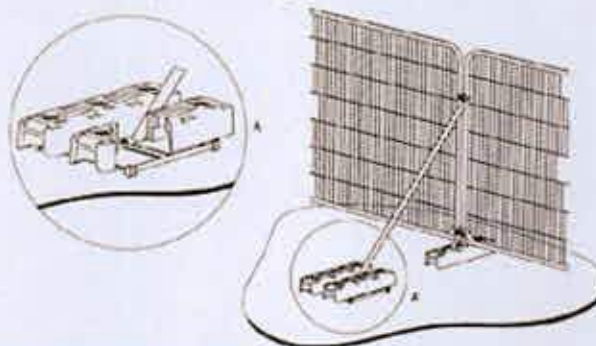


Key

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



a) Stabilizer strut with base plate secured with ground pin



b) Stabilizer strut mounted on block tray

APPENDIX 6 Example Protective Fencing Signs



APPENDIX 7 Photographs



Photograph 1: Looking south towards Water Lane



Photograph 2: Existing entrance