



ARBORICULTURAL IMPACT ASSESSMENT
&
METHOD STATEMENT
for
Bartons Road Site, Havant

*-prepared on behalf of **Terra Firma Landscape Consultancy** –*

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1.0 INTRODUCTION & CLIENTS BRIEF

- 1.1 I am instructed through **Terra Firma Landscape Consultancy** who are working directly for the land owners of this site – the owners are wishing to redevelop the existing agricultural land converting it to a residential housing purposes.
- 1.2 There are trees both within the site and on adjacent land and woodland which could have an impact in terms of being a constraint to development.
- 1.3 I have been commissioned to consider and advise on all of the arboricultural aspects of this project and to then prepare a supporting report to satisfy planning requirements.
- 1.4 My work is to be compiled in accordance with the Recommendations contained within BS5837:2012.

2.0 DOCUMENT DISCLOSURE STATEMENT

- I have been provided with a copy of the Planning Layout drawing superimposed onto the plan prepared by landscape architects – **Terra Firma Planning – Landscape Proposals Master Plan – 1208-1001 - 1:500 @ A0 paper size.**
 - this has been provided to me for the purposes of my work and I rely totally on the accuracy of these drawings in terms of tree location; applying crown spreads and setting out protective fencing.

3.0 TREE SURVEY & ROOT PROTECTION SCHEDULES & IMPACT ASSESSMENT

3.1 I visited the site on **6th October 2015** and carried out a tree survey exercise in accordance with BS5837:2012 recommendations on just those trees which are close to the areas of proposed redevelopment (see explanatory tree survey notes [at appendix BH1](#)).

Tree No.	Species	Ht m	Diam mm	Brch Sprd m	GC m	LS	Condition Comments	Preliminary Management Recommendations	Rem Con yrs	Cat
Shelt 1	Cherry (<i>Prunus</i>) Alder (<i>Alnus</i>) Field Maple (<i>Acer</i>) Hazel (<i>Corylus</i>) Oak (<i>Quercus</i>) Hawthorn (<i>Crataegus</i>) Hornbeam (<i>Carpinus</i>) Grey Poplar (<i>Populus</i>)	8 to 10	100 to 200	N – E – S – W -	0	Y	Crown shapes dictated by group pressures – merged crowns-low branching habit-Hawthorn hedge at field edge with main belt of young trees behind it	No works are deemed necessary at this time	>40	A2
1	Pedunculate Oak (<i>Quercus robur</i>)	14	1100 #	N 8 E 7 S 7 W 8	2	EM	Unable to access base of tree due to the fact that it is off-site-small and large diameter deadwood in crown-storm damaged branches with stubs evident-2m branch overhang of the site-set back some 5m from the boundary fence on a low soil bank	No works are deemed necessary at this time	>40	A1
Grp 1	Field Maples (<i>Acer</i>) Hawthorns (<i>Crataegus</i>)	5 to 6	70 to 100	N - E 0 S – W -	0	Y	Unable to access base of trees due to the fact that they are off-site- crown shapes dictated by group pressures –merged crowns-low branching habit-linear belt of trees planted along boundary of Garden Centre-have been flail pruned flat to boundary line-some stems are intertwined with the metal fence	No works are deemed necessary at this time	30-40	B2
2	Turkey Oak <i>Quercus cerris</i>	22	1300	N 9 E 4 S 15 W 15	3	M	Bark wounding to exposed roots and buttresses- small and large diameter deadwood in crown-storm damaged branches with stubs evident- crown shapes dictated by group pressures – merged crown with tree 3-high crownlifted to the west side with large pruning wounds on trunk-Farmer has ploughed to within 1m of the trunk-fire damaged on southwest side with an open scar and cavity to 300mm deep but with no real depth of decay behind this-long lateral scarring with open wound and some decay on lowest major limb to the west side with scrolls of callus tissue on either side of wound-one small clump of <i>Collybia</i> heart rot fungus on buttress root to south side	Remove storm damage and repair wounds-remove all major dead branches-in view of the defects noted from ground level a Climbing Inspection is recommended to verify the safety of the crown + a PICUS Tomograph of the main trunk	>40	A1

3	Turkey Oak <i>Quercus cerris</i>	22	1200	N 9 E 15 S 15 W 3	3	M	Crown shapes dictated by group pressures – merged crown with tree 2- storm damaged branches with stubs evident and broken and hanging limbs- Farmer has ploughed to within 1m of the trunk-a large secondary stem has ripped out at some point leaving a long scar and socket wound on the north side of the trunk-this has been vandalised and fires set within the cavity which have served to cauterise and kill off any decay-no evidence of ongoing decay are present-one clump of <i>Collybia</i> heart rot fungus on buttress root to west side	Remove storm damage and repair wounds-remove all major dead branches-in view of the defects noted from ground level a Climbing Inspection is recommended to verify the safety of the crown + a PICUS Tomograph of the main trunk	>40	A1
Grp 2	Grey Poplar (<i>Populus</i>) Alder (<i>Alnus</i>) Birch (<i>Betulus</i>) Field Maple (<i>Acer</i>) Hazel (<i>Corylus</i>) Sycamore (<i>Acer</i>)	6 to 8	70 to 200	N – E – S 0 W -	0	Y	Unable to access base of trees due to the fact that they are off-site- crown shapes dictated by group pressures – merged crowns-a linear belt of trees planted along the boundary of the Garden Centre-has been flat flail pruned back to boundary line-some stems are entwined with the metal fencing	No works are deemed necessary at this time	30-40	B2
Grp 3	Field Maple (<i>Acer</i>) Hawthorns (<i>Crataegus</i>) Grey Poplar (<i>Populus</i>)	6 to 8	100 to 150	N – E 4 S – W -	0	Y	Unable to access base of trees due to the fact that they are off-site- crown shapes dictated by group pressures – merged crowns-a linear belt of trees planted along the boundary of the Garden Centre-set approx. 1m back from the boundary fence	No works are deemed necessary at this time	30-40	B2
Grp 4	English Yew (<i>Taxus</i>) Hybrid Poplars (<i>Populus</i>) Sycamores (<i>Acer</i>)	6 to 18	500 to 800 #	N – E – S – W -	2	EM to M	Unable to access base of trees due to the fact that they are off-site- crown shapes dictated by group pressures –located in the private garden abutting the public footpath- approx. 2m back from boundary fence – the Yew is the largest tree at 800mm	No works are deemed necessary at this time	>40	B2
Grp 5	Hybrid Poplars (<i>Populus</i>) Monterey Cypress (<i>Cupressus</i>)	18 to 20	av 500	N – E – S 4 W –	2	EM to M	Located in the corner of the private garden abutting the site	No works are deemed necessary at this time	30-40	C2
Grp 6	Leyland Cypress (<i>Cupressocyparis</i>) & Cherry (<i>Prunus</i>)	2 to 3	100 to 200 x 3	N– E – S 0.5 W –	0	Y to SM	Crown shapes dictated by group pressures –poor quality trees-linear screening belt of conifers with one Cherry and some Sycamore saplings-recently flail pruned to within 0.5m of boundary fence	No works are deemed necessary at this time	20-30	C2
4	<i>Common Lime</i> <i>Tilia europaea</i>	10	180 x 10	N 5 E 5 S 5 W 5	0	EM	Unable to access base of trees due to the fact that they are off-site-ivy smothering trunk and through crowns-multi-stemmed at ground level-dense basal suckering-crown lifted to 4m by flail to south side-a large clump of stems so this is probably regrowth from an old stump	No works are deemed necessary at this time	20-30	B1

5	Horse Chestnut <i>Aesculus hippocastanum</i>	15	800 #	N 7 E 7 S 7 W 7	0	M	Unable to access base of tree due to the fact that it is off-site-ivy smothering trunk and through crown-low branching habit to the ground on the south side-fair shape and form overall	No works are deemed necessary at this time	>40	A1
6	Common Ash <i>Fraxinus excelsior</i>	12	600 #	N 3 E 6 S 8 W 6	4	EM	Unable to access base of tree due to the fact that it is off-site-suppressed by trees behind it-crown weighted to the south-poor quality tree overall	No works are deemed necessary at this time	30-40	C1
Shelt 2	Ash (<i>Fraxinus</i>) Willow (<i>Salix</i>) Privet (<i>Ligustrum</i>) Laurel (<i>Prunus</i>)	4 to 14	av 200	N – E – S 2 W -	0	SM to EM	Low branching habit-recently flail pruned back closer to boundary line but there is still around a 2m crown overhang from the understorey layer	No works are deemed necessary at this time	20-30	C2
Grp 7	Common Ash <i>Fraxinus excelsior</i> x 3 of	14	av 500	N 4 E 4 S 4 W 4	2	SM	Off site tree?-ivy smothering bases and trunks-poor quality trees-westernmost tree has rootplate lifted and is lodged in crown of middle tree	Sever ivy	20-30	C2
7	Pedunculate Oak <i>Quercus robur</i>	15	1100	N 11 E 11 S 8 W 8	4	M	Epicormics on trunk-small and large diameter deadwood throughout crown-storm damage and stubs present-Farmer has ploughed to within 1m of trunk-‘Bottle Butt’ swelling on lower trunk	Remove storm damage and tidy wounds and also remove all deadwood	>40	A1
Copse 1	Elm suckers (<i>Ulmus</i>) Ash (<i>Fraxinus</i>) Corsican Pine (<i>Pinus</i>) Field Maple (<i>Acer</i>) Hawthorn (<i>Crataegus</i>)	8 to 14	100 to 400	N – E – S – W -	0	SM	Poor quality trees-predominantly Elm suckers throughout-Ash have begun to fail due to storm damage	No works are deemed necessary at this time	20-30	C2
8	Common Ash <i>Fraxinus excelsior</i>	10	500 #	N 4 E 4 S 6 W 8	2	EM	Unable to access base of tree due to the fact that it is off-site-ivy smothering throughout crown-dieback in upper reaches-previously heavily pruned back from the site-cavities in old pruning wounds-storm damage and broken branches-poor quality tree	Remove ONLY deadwood and stubs that overhang the site	10-20	C1
Grp 8	Common Ash <i>Fraxinus excelsior</i> x 2 of	16	350 350 #	N 3 E 6 S 6 W 6	4	M	Unable to access base of trees due to the fact that they are off-site-multi-stemmed at ground level-suppressed to north by other trees-crown shapes dictated by group pressures- merged crowns-small diameter deadwood throughout	No works are deemed necessary at this time	30-40	B2

9	Pedunculate Oak <i>Quercus robur</i>	15	500 #	N 6 E 6 S 7 W 7	4	SM	Unable to access base of tree due to the fact that it is off-site-suppressed to west side	No works are deemed necessary at this time	>40	B1
Grp 9	Common Ash <i>Fraxinus excelsior</i>	14 to 16	350 #	N – E 8 S – W –	4	SM	Unable to access base of tree due to the fact that it is off-site-ivy smothering trunk and through crown- crown shape dictated by group pressures	No works are deemed necessary at this time	20-30	C2
10	Pedunculate Oak <i>Quercus robur</i>	18	1200 #	N 12 E 12 S 12 W 12	6	M	Unable to access base of tree due to the fact that it is off-site-small and large diameter deadwood-good shape and form overall	Remove ONLY deadwood and stubs that overhang the site	>40	A1
11	Pedunculate Oak <i>Quercus robur</i>	12	450 #	N 6 E 8 S 6 W 4	4	Y	Unable to access base of tree due to the fact that it is off-site-small diameter deadwood- crown shape dictated by group pressures- fair shape and form overall	No works are deemed necessary at this time	>40	B1
12	Pedunculate Oak <i>Quercus robur</i>	9	500 #	N 8 E 8 S 8 W 6	4	Y	Unable to access base of tree due to the fact that it is off-site-ivy smothering throughout and dominating tree-small diameter deadwood	Advise owner has the ivy severed	>40	B1
Grp 10	Cherries <i>Prunus avium</i> x 2 of	5	350 #	N 5 E 3 S 5 W 3	2	SM	Unable to access base of tree due to the fact that it is off-site-ivy smothering throughout and dominating tree-poor quality tree-flail pruned on east side	No works are deemed necessary at this time	10-20	C2
13	Hawthorn <i>Crataegus monogyna</i>	5	300	N 4 E 4 S 4 W 4	2	EM	Multi-stemmed at 1.6m above ground -good shape and form overall	No works are deemed necessary at this time	>40	A1
Hedge 1	Elm suckers (<i>Ulmus</i>) Ash saplings (<i>Fraxinus</i>) Oak saplings (<i>Quercus</i>) Brambles	3 to 6	50 to 150	N 2 E – S 2 W –	0	Y	Crown shapes dictated by group pressures-merged crowns-dieback in places and some dead trees-poor quality overall with gaps in the line-Brambles are smothering out the lower crowns	Remove Brambles and remove dead trees and dieback	20-30	C2

3.2 A Tree Root Protection Schedule has been prepared in accordance with BS5837:2012 recommendations (see Plans BJH 01 & 02 at [appendix BH2](#))

Tree No.	Tree Species	Cat	Diam mm	BS5837:2012 Table D1 Radial Protect. Zone m	BS5837:2012 Table D1 Root Protect. Area m ²	Is An Offset Required To Cater For Existing Rooting Pattern Restrictions
Shelt 1	Cherry (<i>Prunus</i>) Alder (<i>Alnus</i>) Field Maple (<i>Acer</i>) Hazel (<i>Corylus</i>) Oak (<i>Quercus</i>) Hawthorn (<i>Crataegus</i>) Hornbeam (<i>Carpinus</i>) Grey Poplar (<i>Populus</i>)	A2	100 to 200	1.2 2.4	5 18	NO – competition within the grouping but free rooting to the outer faces
1	Pedunculate Oak (<i>Quercus robur</i>)	A1	1100 #	13.2	547	NO – there are constraints all around this tree which cancel each other out
Grp 1	Field Maples (<i>Acer</i>) Hawthorns (<i>Crataegus</i>)	B2	70 to 100	0.9 1.2	3 5	NO – fairly free rooting to all directions
2	Turkey Oak <i>Quercus cerris</i>	A1	1300	15	707	NO – competition between the two tree but free rooting to all other directions
3	Turkey Oak <i>Quercus cerris</i>	A1	1200	14.4	652	NO – competition between the two tree but free rooting to all other directions
Grp 2	Grey Poplar (<i>Populus</i>) Alder (<i>Alnus</i>) Birch (<i>Betulus</i>) Field Maple (<i>Acer</i>) Hazel (<i>Corylus</i>) Sycamore (<i>Acer</i>)	B2	70 to 200	0.9 2.4	3 18	NO – fairly free rooting to all directions
Grp 3	Field Maple (<i>Acer</i>) Hawthorns (<i>Crataegus</i>) Grey Poplar (<i>Populus</i>)	B2	100 to 150	1.2 1.8	5 10	NO – fairly free rooting to all directions
Grp 4	English Yew (<i>Taxus</i>) Hybrid Poplars (<i>Populus</i>) Sycamores (<i>Acer</i>)	B2	500 to 800 #	6.0 9.6	113 290	NO – fairly free rooting to all directions

Grp 5	Hybrid Poplars (<i>Populus</i>) Monterey Cypress (<i>Cupressus</i>)	C2	av 500	6.0	113	NO – fairly free rooting to all directions
Grp 6	Leyland Cypress (<i>Cupressocyparis</i>) & Cherry (<i>Prunus</i>)	C2	100 200 x 3	1.2 4.2	5 54	NO – fairly free rooting to all directions
4	Common Lime <i>Tilia europaea</i>	B1	180 x 10	6.8	147	NO – fairly free rooting to all directions
5	Horse Chestnut <i>Aesculus hippocastanum</i>	A1	800 #	9.6	290	NO – fairly free rooting to all directions
6	Common Ash <i>Fraxinus excelsior</i>	C1	600 #	7.2	163	NO – fairly free rooting to all directions
Shelt 2	Ash (<i>Fraxinus</i>) Willow (<i>Salix</i>) Privet (<i>Ligustrum</i>) Laurel (<i>Prunus</i>)	C2	av 200	2.4	18	NO – fairly free rooting to all directions
Grp 7	Common Ash <i>Fraxinus excelsior</i> x 3 of	C2	av 500	6.0	113	NO – fairly free rooting to all directions
7	Pedunculate Oak <i>Quercus robur</i>	A1	1100	13.2	547	NO – fairly free rooting to all directions
Copse 1	Elm(<i>Ulmus</i>) Ash (<i>Fraxinus</i>) Corsican Pine (<i>Pinus</i>) Field Maple (<i>Acer</i>) Hawthorn (<i>Crataegus</i>)	C2	100 to 400	1.2 4.8	5 72	NO – fairly free rooting to all directions
8	Common Ash <i>Fraxinus excelsior</i>	C1	500 #	6.0	113	NO – fairly free rooting to all directions
Grp 8	Common Ash <i>Fraxinus excelsior</i> x 2 of	B2	350 350 #	5.9	111	NO – fairly free rooting to all directions

9	Pedunculate Oak <i>Quercus robur</i>	B1	500 #	6.0	113	NO – fairly free rooting to all directions
Grp 9	Common Ash <i>Fraxinus excelsior</i>	C2	350 #	4.2	55	NO – fairly free rooting to all directions
10	Pedunculate Oak <i>Quercus robur</i>	A1	1200 #	14.4	652	NO – fairly free rooting to all directions
11	Pedunculate Oak <i>Quercus robur</i>	B1	450 #	5.4	92	NO – fairly free rooting to all directions
12	Pedunculate Oak <i>Quercus robur</i>	B1	500 #	6.0	113	NO – fairly free rooting to all directions
Grp 10	Cherries <i>Prunus avium</i> x 2 of	C2	350 #	4.2	55	NO – fairly free rooting to all directions
13	Hawthorn <i>Crataegus monogyna</i>	A1	300	3.6	41	NO – fairly free rooting to all directions
Hedge 1	Elm suckers (<i>Ulmus</i>) Ash saplings (<i>Fraxinus</i>) Oak saplings (<i>Quercus</i>) Brambles	C2	50 to 150	0.5 1.8	2 10	NO – fairly free rooting to all directions

4.0 IMPACT ASSESSMENT & TREE PROTECTION MEASURES RECOMMENDED

4.1 The finalised planning layout drawing has been provided to me and an assessment made as to the viability of retaining trees as part of this layout in order that they meet the RPA requirements of BS5837 - the data is presented here in tabular format:-

Key: **RSAM** = Remove for sound arboricultural management reasons **RTFD** = Remove to facilitate development **UF** = under footprint of proposed development

YES = Yes can be retained and fully protected

YES (1) = Yes can be retained subject to mitigation measures being applied

Tree No	Species	Cat	Stem Diam mm	BS5837:2012 Radial Protection Area m	BS5837:2012 Polygon Area m ²	Distance from Site Features (see key above)	Can Tree Be Retained
Shelt 1	Cherry (<i>Prunus</i>) Alder (<i>Alnus</i>) Field Maple (<i>Acer</i>) Hazel (<i>Corylus</i>) Oak (<i>Quercus</i>) Hawthorn (<i>Crataegus</i>) Hornbeam (<i>Carpinus</i>) Grey Poplar (<i>Populus</i>)	A2	100 to 200	1.2 2.4	5 18	The full width of this feature is around 20m and this will be reduced down to 10m to 12m throughout its length	Half NO -RTFD Half YES
1	Pedunculate Oak (<i>Quercus robur</i>)	A1	1100 #	13.2	547	14.8m to new road	YES
Grp 1	Field Maples (<i>Acer</i>) Hawthorns (<i>Crataegus</i>)	B2	70 to 100	0.9 1.2	3 5	2m + to new road	YES
2	Turkey Oak <i>Quercus cerris</i>	A1	1300	15	707	15m + to any hard surfacing 0m to soft landscaped areas under canopy 6m to Play Area	YES (1)
3	Turkey Oak <i>Quercus cerris</i>	A1	1200	14.4	652	15m + to any hard surfacing 0m to soft landscaped areas under canopy 10m to Play Area	YES (1)
Grp 2	Grey Poplar (<i>Populus</i>) Alder (<i>Alnus</i>) Birch (<i>Betulus</i>) Field Maple (<i>Acer</i>) Hazel (<i>Corylus</i>) Sycamore (<i>Acer</i>)	B2	70 to 200	0.9 2.4	3 18	2.5m + to new road 5m + to new parking bays 5m + to soft landscaping	YES

Tree No	Species	Cat	Stem Diam mm	BS5837:2012 Radial Protection Area m	BS5837:2012 Polygon Area m ²	Distance from Site Features (see key above)	Can Tree Be Retained
Grp 3	Field Maple (<i>Acer</i>) Hawthorns (<i>Crataegus</i>) Grey Poplar (<i>Populus</i>)	B2	100 to 150	1.2 1.8	5 10	2m to existing footpath 1.8m to new footpath	YES
Grp 4	English Yew (<i>Taxus</i>) Hybrid Poplars (<i>Populus</i>) Sycamores (<i>Acer</i>)	B2	500 to 800 #	6.0 9.6	113 290	Avge 4m to existing footpath Avge 3m to new footpath	YES (1)
Grp 5	Hybrid Poplars (<i>Populus</i>) Monterey Cypress (<i>Cupressus</i>)	C2	av 500	6.0	113	Avge 4m to existing footpath Avge 3m to new footpath 5m to soft landscaping	YES (1)
Grp 6	Leyland Cypress (<i>Cupressocyparis</i>) & Cherry (<i>Prunus</i>)	C2	100 200 x 3	1.2 4.2	5 54	2m to soft landscaping 4m to new parking bays	YES
4	Common Lime <i>Tilia europaea</i>	B1	180 x 10	6.8	147	5m to new parking bays	YES (1)
5	Horse Chestnut <i>Aesculus hippocastanum</i>	A1	800 #	9.6	290	3m to new close boarded fencing 14m to new parking bays 3m to soft landscaping	YES (1)
6	Common Ash <i>Fraxinus excelsior</i>	C1	600 #	7.2	163	7.5m to new close boarded fencing 3m to soft landscaping	YES (1)
Shelt 2	Ash (<i>Fraxinus</i>) Willow (<i>Salix</i>) Privet (<i>Ligustrum</i>) Laurel (<i>Prunus</i>)	C2	av 200	2.4	18	Sundry saplings and vegetation will be cut back to the boundary line just leaving the major trees intact	Some NO-RTFD Most YES
Grp 7	Common Ash <i>Fraxinus excelsior</i> x 3 of	C2	av 500	6.0	113	0m to soft landscaping	YES (1)

Tree No	Species	Cat	Stem Diam mm	BS5837:2012 Radial Protection Area m	BS5837:2012 Polygon Area m ²	Distance from Site Features (see key above)	Can Tree Be Retained
7	Pedunculate Oak <i>Quercus robur</i>	A1	1100	13.2	547	13.2m to new footpath and road 0m to soft landscaping	YES (1)
Copse 1	Elm(<i>Ulmus</i>) Ash (<i>Fraxinus</i>) Corsican Pine (<i>Pinus</i>) Field Maple (<i>Acer</i>) Hawthorn (<i>Crataegus</i>)	C2	100 to 400	1.2 4.8	5 72	Sundry saplings and vegetation in the central areas will be removed to make way for the Attenuation Pond – remainder of periphery trees will be retained	Some NO-RTFD Most YES
8	Common Ash <i>Fraxinus excelsior</i>	C1	500 #	6.0	113	6m to new parking bays 0m to soft landscaping 5.5m to new close boarded fencing	YES (1)
Grp 8	Common Ash <i>Fraxinus excelsior</i> x 2 of	B2	350 350 #	5.9	111	0m to new close boarded fencing 5m to new parking bays	YES (1)
9	Pedunculate Oak <i>Quercus robur</i>	B1	500 #	6.0	113	0m to new soft landscaped meadow planting	YES (1)
Grp 9	Common Ash <i>Fraxinus excelsior</i>	C2	350 #	4.2	55	0m to new soft landscaped meadow planting	YES (1)
10	Pedunculate Oak <i>Quercus robur</i>	A1	1200 #	14.4	652	0m to new soft landscaped meadow planting 15.5m to new footpath and road	YES (1)
11	Pedunculate Oak <i>Quercus robur</i>	B1	450 #	5.4	92	8.5m to new footpath and road 0m to new soft landscaped meadow planting	YES (1)
12	Pedunculate Oak <i>Quercus robur</i>	B1	500 #	6.0	113	8.5m to new footpath and road 0m to new soft landscaped meadow planting	YES (1)

Tree No	Species	Cat	Stem Diam mm	BS5837:2012 Radial Protection Area m	BS5837:2012 Polygon Area m ²	Distance from Site Features (see key above)	Can Tree Be Retained
Grp 10	Cherries <i>Prunus avium</i> x 2 of	C2	350 #	4.2	55	6.5m to new footpath and road 0m to new soft landscaped meadow planting	YES (1)
13	Hawthorn <i>Crataegus monogyna</i>	A1	300	3.6	41	UF of new road access point and visibility splay	NO -RTFD
Hedge 1	Elm suckers (<i>Ulmus</i>) Ash saplings (<i>Fraxinus</i>) Oak saplings (<i>Quercus</i>) Brambles	C2	50 to 150	0.5 1.8	2 10	End section will need to be removed to allow for new road access point and visibility splay	Some NO-RTFD Most YES

4.2 YES

There are **1** tree and **5** groups and **1** hedge (most of) and **1** Copse (most of) and **2** Shelterbelts (most of) in this category on this project which can be retained and fully protected in accordance with BS5837 recommendations (see **Tree Protection Plan BJH.03/04** at [appendix BH4](#) and full listing in schedule at 4.1 above) :-

Trees: **1 Oak (A)**

Groups : **Grp 1 Mixed Species (B); Grp 2 Mixed Species (B); Grp 3 Mixed Species (B); Grp 4 Mixed Species (B); Grp 6 Mixed Species (B)**

Hedges : **Hedge 1 Mixed Species-most of (C)**

Copses : **Copse 1 Mixed Species-most of (C)**

Shelterbelts : **Shelt 1 Mixed Species-half of (A); Shelt 2 Mixed Species-most of (C)**

4.3 YES (1)

There are **11** trees and **5** groups in this category on this project where work will be taking place within RPA's as listed at 4.1 above and as shown on the **Tree Protection Plan BJH 03/04** and thus require mitigation measures to be applied in order to provide adequate levels of root protection and ensure their safe and healthy survival :-

Trees: **2 Turkey Oak (A); 3 Turkey Oak (A); 4 Lime (B); 5 Horse Chestnut (A); 6 Ash (C); 7 Oak (A); 8 Ash (C); 9 Oak (B); 10 Oak (A); 11 Oak (B) & 12 Oak (B)**

Groups : Grp 5 Mixed Species (C); Grp 7 Ash (C); Grp 8 Ash (B); Grp 9 Ash (C) & Grp 10 Cherries (C)

N.B. Mitigation measures are detailed for these trees under the Section 6 Method Statement.

4.4 NO – RTFD

There are **1** tree and **1** hedge (some of) and **1** Copse (some of) and **2** Shelterbelts (scrubby edges of one and half of the other) within this category on this project which are recommended for removal in order to facilitate development proposals.

4.5 NO-RSAM

There are **0** trees within this category on this project which are recommended for removal for health and safety reasons regardless of any redevelopment proposals.

5.0 PRE-DEVELOPMENT TREE WORKS

N.B. – ONLY trees requiring attention or facilitation pruning will be listed here and all other trees will remain untouched

No	Species	Tree Works Recommended
2	Turkey Oak	- Remove storm damage and repair wounds - Remove all major dead branches - In view of the defects noted from ground level a Climbing Inspection is recommended to verify the safety of the crown + a PICUS Tomograph decay detection test of the main trunk
3	Turkey Oak	- Remove storm damage and repair wounds - Remove all major dead branches - In view of the defects noted from ground level a Climbing Inspection is recommended to verify the safety of the crown + a PICUS Tomograph decay detection test of the main trunk
7	Pedunculate Oak	- Remove storm damage and tidy wounds - Remove all deadwood
8	Common Ash	Remove ONLY deadwood and stubs that overhang the site- for safety reasons
10	Pedunculate Oak	Remove ONLY deadwood and stubs that overhang the site- for safety reasons
Hedge 1	Mixed Species	Remove Brambles and remove dead trees and dieback

6.0 METHOD STATEMENT

Generic :-

- 6.1 All of the specified tree works are to be undertaken by an approved and experienced tree contractor prior to any construction contractors commencing works on site.
- 6.2 Erect the protective fencing as specified and shown on the **Tree Protection Plan BJH 03/04** at [appendix BH3](#). Barriers are to be 'Fit For Purpose' to exclude construction activity and must be maintained to ensure that they remain rigid and complete and in the original setting out positions. These checks will need to be incorporated into a schedule of site monitoring visits to be agreed with the clients subject to phased development operations and subsequently copies of these site visit reports will need to be copied in to the Council.
- 6.3 A copy of the Tree Protection Plan is to be pinned up in the offices/mess hut on site for all site staff to see. The area within the fenced off exclusion zone is to be regarded as **sacrosanct** and the fencing shall not be taken down or relocated at any time without the prior written approval of the monitoring arboriculturist or local authority tree officer, unless this has already been agreed as part of the planning application consent process and is detailed in writing and shown on a plan.

The following prohibitions shall apply within the area enclosed by the Tree Protection Fencing :-

- **No** mechanical digging or scraping once the initial ground cover vegetation has been cleared and the site fenced off.
- **No** storage of plant, equipment or materials
- **No** vehicular or plant access
- **No** fire lighting
- **No** handling, discharge or spillage of any chemical substance, including cement washings
- **No** action likely to cause localised water-logging
- **No** change in ground levels

- 6.4 All site works storage areas and compounds/welfare units and any mixing areas are to be located outside of and well clear of retained tree RPA's.
- 6.5 It will be very important for any vehicle drivers to have undergone a pre-contract induction session where the trees to be retained are to be highlighted and the need for care and attention when working nearby with wide loads; tall loads; plant with swinging booms, jibs and counterweights (including drilling rigs) or slewing hydraulic arms to avoid contact with trunks or crowns.

Site Specific :-**6.6 Tree 1-Turkey Oak & Tree 2-Turkey Oak**

- This site has been under agricultural cultivation for many years and over that time the ground has been ploughed to within 1m of the trunks of these trees and thus there will be no significant rooting encountered in the first 500mm or so of soil.
- It is proposed to carry out soft landscaping works under the canopy of these trees and also have a small Childrens Play area constructed – both of which should have minimal effect on the trees being shallow depth excavations but as a precautionary measure only ‘Hand Digging’ will be permitted within the RPA’s.

6.7 Group 4-Mixed Species & Group 5-Mixed Species

- Both of these groups have off site maturing trees in them with RPA’s that overlap the existing footpath.
- The footpath is to be upgraded with a shallow dig cellular confinement system such as CellWeb or GeoCell (150mmdepth).
- There is an existing consolidated path which will be broken out with ‘Hand Tools Only’ down to the depth of the underside of the sub-base layer and a porous Geotextile membrane laid across the zone and then a washed sand layer onto which the CellWeb will be laid - voids are then to be filled with washed aggregate. The edges of the CellWeb will be contained by means of treated pegged board edging materials.
- This will provide a solid but porous surface that will not have an adverse effect on the health and vitality of the trees.

6.8 Tree 4-Lime

- This site has been under agricultural cultivation for many years and over that time the ground has been ploughed to within 3m of the trunk of this tree and thus there will be no significant rooting encountered in the first 500mm or so of soil.
- The new parking bays begin at 5m from the tree centre which is within the prescribed RPA so as a precautionary measure a ‘Hand Dug’ slit trench will be excavated along the back line of the bays and any roots of 25mm or less that are exposed will be cleanly severed by the monitoring arb expert using bypass secateurs.

6.9 Tree 5-Horse Chestnut; Tree 6-Ash; Group 7 Ash; Tree 7-Oak; Tree 8-Ash; Group 8-Ash; Tree 9-Oak; Group 9-Ash; Tree 10-Oak; Tree 11-Oak; Tree 12-Oak & Group 10 Cherries.

- This site has been under agricultural cultivation for many years and over that time the ground has been ploughed to within 3m of the trunk of this tree and thus there will be no significant rooting encountered in the first 500mm or so of soil.

- Both soft landscaping works and the erection of a close boarded fence will take place within the RPA of these trees.
- The existing grass and weeds and sundry vegetation may be skimmed off using machinery but after this any excavation works must be carried out with 'Hand Tools Only'.
- With regards to the Close Boarded Fencing - probe the locations [with hand held spike or auger] to receive support posts to make sure that there is no contact with a major root – if there is then the post hole location must be moved to one side to avoid it.
- Excavate individual post hole locations with hand tools ONLY and tease out and sever any roots (less than 25mm diameter) that may be encountered with sharp secateurs - rather than using the blunt edge of a spade.
- EITHER Lay thick polythene into the excavated post hole to protect the surrounding soil from contamination from the concrete which will be poured in around the wooden fence post OR fill the hole around the post with large stones and then tamp this down to seal the post in position.

7.0 SITE MONITORING & SUPERVISION

- BS5837 recommends that wherever trees on or adjacent to a site have been identified on the tree protection plan as requiring special protection measures, there should be an auditable system of arboricultural site monitoring. This should extend to direct arboricultural monitoring whenever demolition/construction and development activity is to take place within or adjacent to any RPA.

It is suggested that the following phased approach should be observed:-

- 7.1 Once the recommended tree works have been completed by professional tree specialists the main contractor is to erect the Construction Phase Protective Fencing and then organise a Pre-commencement site meeting between the development teams arboricultural consultant and the site manager and client representative where the full extent of arboricultural supervision/monitoring can be agreed for the project and the requirements of the AIA report and Tree Protection Plan BJH.03/04 discussed.
- 7.2 The location of the Protective Fencing and any Ground Protection Measures can be verified [and any adjustments to same requested] and the suitability of the materials used can also be verified [i.e. are they 'fit for purpose']. The site may now be released to the Site Manager and a letter issued by the Arboricultural Consultant to the Council verifying satisfactory completion of the initial site set-up Tree Protection measures – accompanied by details of how the requirements for an ongoing auditable system of arboricultural site monitoring are to be met on this project.

7.3 It is anticipated that there will be a need to have the following works monitored by an Arboricultural expert :-

a) Slit Trench Excavation

8.0 CONCLUSIONS

- The direct losses to development on this project are :-
 - **Tree 13 Hawthorn** and the end of **Hedge 1** will be removed to facilitate the new access point and visibility splay.
 - The Elm saplings in **Copse 1** will be removed to facilitate the Attenuation Pond but all major trees will be retained.
 - The overlap from **Shelterbelt 2** will need to be cleared back to the fence line but most of this is saplings and brambles and weeds with all major off site trees in the Shelterbelt being retained.
 - **Shelterbelt 1** is some 20m deep and comprised of young trees planted at the time that the adjacent residential development was completed – this will need to be reduced by half this depth down to 10m width to accommodate the layout proposed and allow for drainage ditches.

In my opinion these losses are minimal and can be more than compensated for by the high levels of new planting proposed within the Terra Firma Landscape Master Plan.

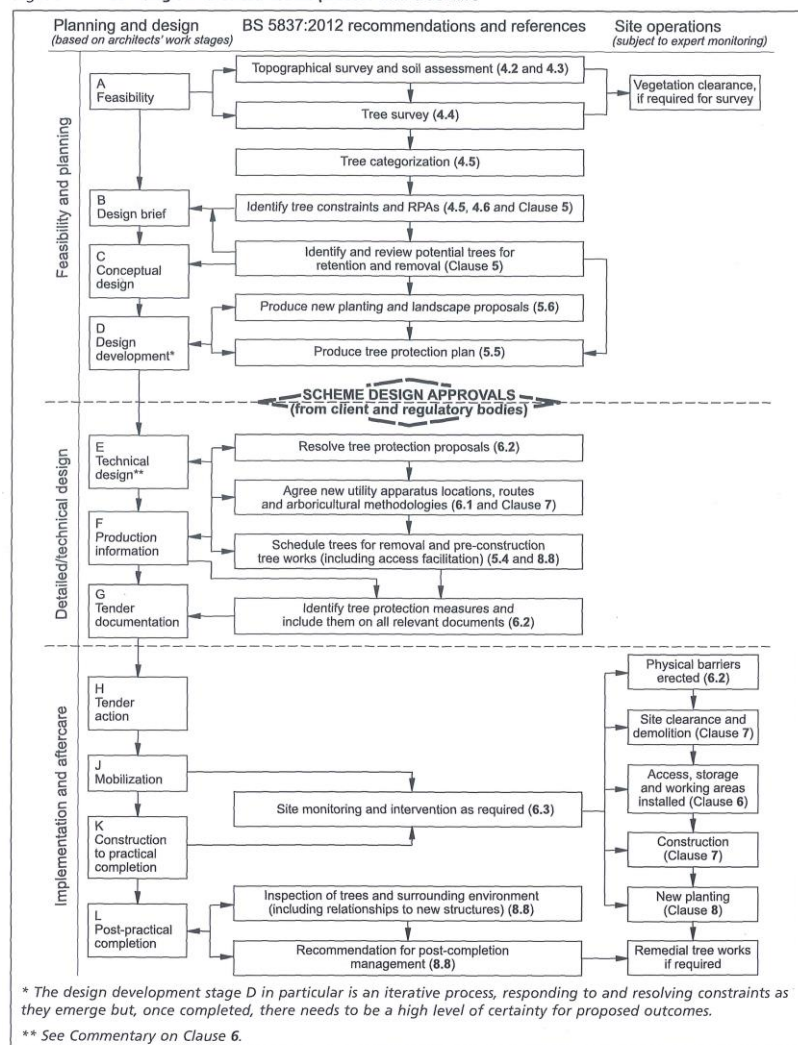
- The majority of the mitigation measures required on this project relate to the soft landscaping techniques within tree RPA's and also the erection of close boarded fencing neither of which pose a major threat to tree health.
- Provided that the above methodology is strictly adhered to in the phased manner advocated (along with any agreed requirement for site supervision/monitoring) I would not foresee any detrimental impact taking place that might undermine the health and stability or visual amenity value of the trees shown for retention both on and off this site.
- This layout is therefore fully supportable from an arboricultural perspective.



BH 1

Figure 1 - Flow Diagram
& Tree Survey Notes

Figure 1 The design and construction process and tree care



TREE SURVEY NOTES

These Tree Survey Notes have been prepared in accordance with the recommendations of **British Standard 5837:2012** and they define the criteria for pre –development tree surveys.

- Each tree/group/hedge/shelterbelt/woodland has been allocated a unique number (**No.**), where specifically requested and appropriate fees are agreed small durable numbered metal tags can be applied to each tree/group surveyed.
- The tree species (**Species**) is provided in both English and Latin name formats.
- Height assessments (**Ht**) are estimated in metres. This will be adequate for the majority of cases, but where accurate heights become a critical issue it may be necessary to return to site, as a separately commissioned exercise, to collect accurate measurements with the aid of optical instruments.
- Trunk/stem diameters (**Diam**) are measured in millimetres at 1.5m above ground level – where the tree is inaccessible the diameter is estimated as indicated by suffix #
- Radial crown spread assessments (**Brch Sprd**) are estimated in metres from the centre of the trunk/group to each of the four primary points of the compass (**N**-north; **E**-east; **S**-south and **W**-west) in order to achieve a representation of the crown shape which will be shown on the accompanying tree survey plan. These provide a general guide as to the main bulk outline of a tree/groups crown but are not tape measured dimensions. These would only be undertaken as part of a separately commissioned exercise, where precise dimensions are critical to the project at hand.
- Both the canopy ground clearance (**GC**) and the height & compass direction of the lowest major branch (**LMB**) are estimated and shown in metres
- An assessment of a tree/groups ‘life stage’ (**LS**) is made in terms of its site specific maturity as part of the surrounding landscape, taking into account its overall shape and form in that setting, and is recorded thus :-
Y - Young tree/group; **SM** - Semi-Mature tree/group; **EM** - Early-Mature tree/group;
M – Mature tree/group; **OM** - Over – mature tree/group
- Data on the structural condition (**Condition Comments**) of the tree/group is provided to give its visual appearance and any significant health and safety issues.
- Details of any recommended tree works required at the time of survey is given under the heading – **Preliminary Management Recommendations**.
- An estimate of a tree/groups remaining contribution in years (**RC**) is made and is recorded thus :-
0-5; 5-10; 10-20; 20-30; 30-40 or **>40** years.

- The category grading (**Cat**) for each tree/group is assessed according to the criteria provided within **BS5837:2012**. The assessment is made of the tree/group in its current condition and within the environment encountered bearing in mind its suitability for retention as part of any future proposed

development; although the exact layout detail of any specific scheme will not be known at the time of surveying. The trees have been classified into one of four categories and colour coded as BS5837 recommends :- **U** (dark red); **A** (light green); **B** (mid-blue) and **C** (grey). Please note that suffixed numerical sub-categories are also applied for guidance only and do not carry any cumulative or increased value for the tree/group. This colour coding scheme will be applied to all drawings provided.

Table 1 – Cascade chart for tree quality assessment

Category and definition	Criteria			Colour 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 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 (i.e. where, for whatever reason the loss of companion shelter cannot be mitigated by pruning) - Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline - Trees infected with pathogens of significance to the health and/or safety of other trees nearby, 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.			Dark Red
Trees to be considered for retention				
	Criteria – Subcategories			
	1	2	3	
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)	Light Green
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in the 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	Mid 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 150mm	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



BH 2

Tree Survey & Root Protection Plans

BJH 01/02

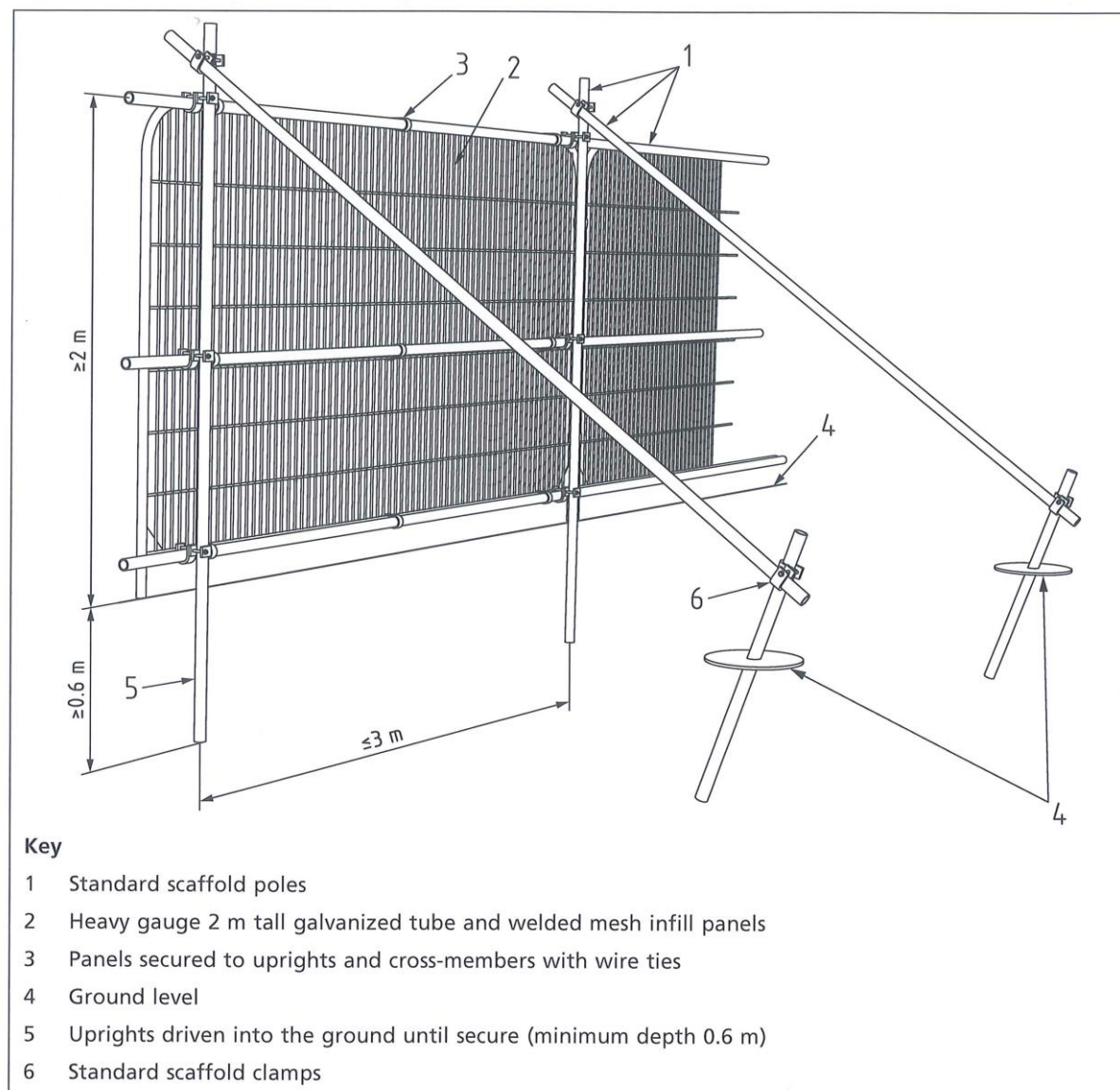


BH 3

Tree Retention & Protection Plan BJH 03/04

+ BS5837:2012 – Figure 2
+ Porous Footpath Construction Methodology

Figure 2 Default specification for protective barrier





BH 4

Qualifications & Experience



QUALIFICATIONS AND EXPERIENCE

- My name is Bernie Harverson and I am a self employed independent arboricultural consultant in private practice. I take instructions primarily in the South of England but also on occasions work nationwide and abroad and have offices at : –
3 Foxcombe Cottages, South Harting, West Sussex GU31 5PL and also at Cedar Court, 5 College Street, Petersfield
- I hold the following arboricultural qualification - **Master of Arboriculture** (Royal Forestry Society – 1976)
- I have over **forty** years of practical and managerial experience in the arboricultural industry including periods in both the public and private sectors.
- My Local Government sector experience comprises one year as a tree surgeon with Brighton Parks and nine years spent in Arboricultural Officer posts with both Westminster City Council and Portsmouth City Council
- My past practical experience in the private sector includes two years at Tilhill Forest Nursery and over ten years for various companies as a Climbing Arborist/Tree Surgeon.
- Managerial work in the private sector includes two years as manager of Beechings tree surgery company and twelve years with CBA Trees as an Arboricultural Consultant.
- As an independent self employed Arboricultural Consultant I now provide a comprehensive range of services including :-
tree surveys, appraisals, assessments and inspections with particular reference to planning and development and tree safety audits with a service offered as a climber to undertake full climbing inspections to better understand the condition of a given tree before prescribing a management strategy.
- I also undertake litigation work appearing as an Expert Witness in Court Actions and at Planning Appeals, Hearings and Public Local Inquiries.

Bernie Harverson M.Arb.

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