



Appendix L8 – Arboricultural Method Statements



ARBORICULTURAL METHOD STATEMENT

Langstone Coastal Defence Scheme, Langstone

- prepared on behalf of Coastal Partners -

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1.0 INTRODUCTION & CLIENTS BRIEF

- 1.1 My clients on this project are - **Coastal Partners.**
- 1.2 They seek to construct new sea defence scheme in Langstone.
- 1.3 There are on site trees which will need to be protected during the construction process.
- 1.4 I have been commissioned to prepare a report to satisfy the arboricultural aspects of this project to meet planning requirements.
- 1.5 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 drawings as originally prepared by **Havant Borough Council & AECOM :-**

- **AECOM – LANG-ACM-SC-F1A-DR-ZZ-011030**
- **AECOM – LANG-ACM-SC-F2-DR-ZZ-011031**
- **AECOM – LANG-ACM-SC-F3-DR-ZZ-011032**
- **AECOM – LANG-ACM-SC-F4-DR-ZZ-011033**
- **AECOM – LANG-ACM-SC-F5-DR-ZZ-011034**

- these plans have all been provided to me for the purposes of my work and I rely totally on their accuracy in terms of tree location and setting out protective fencing.

3.0 TREE SURVEY & ROOT PROTECTION SCHEDULES & IMPACT ASSESSMENT

3.1 I originally visited this site throughout **May 2022 [and repeatedly since then]** to carry out a tree survey exercise in accordance with BS5837:2012 recommendations on those trees which are closest to the areas of proposed redevelopment (see explanatory tree survey notes [at appendix BH1](#)).

Public Footpath from Mill Lane to Langstone Sailing Club :

Trees	Species	Ht m	Diam mm	Brch Sprd m	GC m	LS	Comments	Preliminary Management Recommendations	Rem Con yrs	Cat
Group 6	Mixed Species (Deciduous)	4 to 12	100 to 350	N – E – S – W-	0	Y to EM	Crown shapes dictated by group pressures-merged crowns.	Not under clients control	20-30	C2
Group 7	Ash (<i>Fraxinus</i>) & Sycamore (<i>Acer</i>)	6 to 8	75 to 350	N 3 E 3 S 3 W3	0	Y to SM	Crown shapes dictated by group pressures-merged crowns-tip dieback noted.	Not under clients control	20-30	C2
Group 8	Mixed Species (Deciduous)	4 to 14	100 to 350	N – E – S – W-	0	Y to EM	Crown shapes dictated by group pressures-merged crowns.	Not under clients control	20-30	C2

Old Billy Line Bridlepath and following Dog Walking Field Edges :

Tree No.	Species	Ht m	Diam mm	Brch Sprd m	GC m	LS	Comments	Preliminary Management Recommendations	Rem Cont yrs	Cat
Group 9	Hawthorns (<i>Crataegus</i>)	5 to 7	Av 350	N 4 E 4 S 4 W4	1	M	Crown shapes dictated by group pressures-merged crowns-linear boundary screen of trees.	Not under clients control	>40	B2
6	Hawthorn <i>Crataegus monogyna</i>	8	400 #	N 4 E 4 S 4 W4	2	M	In private ownership-Ivy smothering base, trunk and through crowns-small diameter deadwood-dieback noted along with thinning of the crown.	Not under clients control	20-30	B1
7	Pedunculate Oak <i>Quercus robur</i>	18	1200	N 15 E 15 S 15 W15	2	M	Small and large diameter deadwood noted-good shape and form overall.	Not under clients control	>40	A1

Group 10	Ash (<i>Fraxinus</i>) x 1 of Hawthorn (<i>Crataegus</i>) x 2 of	8	200 400 #	N 4 E 4 S 4 W4	0	M	Unable to access due to dense vegetation-in private ownership-crown shapes dictated by group pressures-low branching habit.	Not under clients control	>40	B2
8	Elderberry <i>Sambucus nigra</i>	6	300 x 2 #	N 4 E 4 S 4 W4	2	M	In private ownership-ivy smothering base, trunk and through crown-multi stemmed at ground level.	Not under clients control	20-30	B1
9	Holly <i>Ilex aquifolium</i>	10	250 250 #	N 4 E 4 S 4 W4	2	M	In private ownership-fair shape and form overall.	Not under clients control	30-40	B1
10	Common Beech <i>Fagus sylvatica</i>	11	300 #	N 4 E 4 S 4 W4	2	Y	In private ownership-fair shape and form overall.	Not under clients control	>40	B1
11	Hawthorn <i>Crataegus monogyna</i>	5	250 #	N 3 E 3 S 3 W3	1	M	In private ownership-crown smothered in a climbing plant.	Not under clients control	30-40	C1
12	Common Ash <i>Fraxinus excelsior</i>	8	160 #	N 3 E 3 S 3 W3	2	Y	Unable to access due to dense vegetation-fair shape and from overall.	Not under clients control	30-40	C1
Hedge 2	Hawthorn (<i>Crataegus</i>) Elderberry (<i>Sambucus</i>) Ash (<i>Fraxinus</i>)	4 to 6	Av 150 x5 #	N 4 E – S 4 W-	0	M	Unable to access due to dense vegetation-multi stemmed at ground level-good shape and form overall for Elder and Hawthorns but Ash are showing signs of Ash Dieback Disease.	Not under clients control	>40	B2
13	Common Ash <i>Fraxinus excelsior</i>	11	150 x4 #	N 5 E 5 S 5 W5	2	SM	In private ownership-Pigeon browsing damage noted in crown.	Not under clients control	20-30	B1
14	Common Ash <i>Fraxinus excelsior</i>	18	900 #	N 8 E 12 S 15 W10	4	M	In private ownership-small and large diameter deadwood present in crown-significant dieback caused by Ash Dieback Disease.	Not under clients control	10-20	C1
Group 11	Sycamores (<i>Acer</i>) x 3 of Ash (<i>Fraxinus</i>) x 3 of	16 to 18	Av 350 x3 #	N 8 E 8 S 8 W8	3	EM	In private ownership-multi stemmed at ground level-crown shapes dictated by group pressures-small diameter deadwood-the Ash are suffering from Pigeon browsing damage.	Not under clients control	>40	B2

Hedge 3	<i>Hawthorn (Crataegus)</i> <i>Elderberry (Sambucus)</i> <i>Myrobalan Plum (Prunus)</i>	4 to 6	Av 150 x5 #	N 4 E - S 4 W-	0	M	Unable to access due to dense vegetation-multi stemmed at ground level-good shape and form overall.	Not under clients control	>40	B2
15	Common Ash <i>Fraxinus excelsior</i>	9	150 x4 #	N 6 E 2 S 4 W4	3	Y	Unable to access due to dense vegetation-multi stemmed at ground level- Pigeon browsing damage noted in crown.	Not under clients control	10- 20	C1
16	Holly <i>Ilex aquifolium</i>	6	170 x4 #	N 4 E 4 S 4 W2	2	SM	Unable to access due to dense vegetation-multi stemmed at ground level-low crown density and dieback noted.	Not under clients control	10- 20	B1
Group 12	Wych Elms <i>Ulmus glabra</i>	8	Av 170 #	N 2.5 E 2.5 S 2.5 W2.5	2	Y	Suckers from old stumps- unable to access due to dense vegetation-dieback noted in some but most are dead or dying from Dutch Elm Disease reinfection.	Not under clients control	<10	U
17	Common Ash <i>Fraxinus excelsior</i>	16	550 #	N 8 E 8 S 5 W8	3	M	In private ownership-small deadwood throughout-Pigeon browsing damage noted.	Not under clients control	20- 30	C1
18	Sycamore <i>Acer pseudoplatanus</i>	18	450 #	N 0 E 8 S 8 W8	3	M	In private ownership-leans south-suppressed to north side.	Not under clients control	30- 40	B1
19	Sycamore <i>Acer pseudoplatanus</i>	22	750 #	N 8 E 8 S 8 W4	5	M	In private ownership-multi stemmed at 5m above ground-leans south-suppressed to west side.	Not under clients control	>40	A1
20	Common Ash <i>Fraxinus excelsior</i>	14	450 #	N 6 E 6 S 6 W6	3	M	In private ownership-small diameter deadwood throughout-low crown density caused by Ash Dieback Disease-also Pigeon browsing damage noted in crown.	Not under clients control	<10	U
21	Hornbeam <i>Carpinus betulus</i>	8	450 #	N 6 E 6 S 6 W6	2	EM	In private ownership-has been crown reduced and reshaped in the past and has good shape and from overall.	Not under clients control	>40	A1
22	Hybrid Poplar <i>Populus euroamericana</i>	26	1200 #	N 12 E 15 S 12 W12	5	M	In private ownership-has been crown reduced and reshaped in the past-small and large diameter deadwood present in crown-tip dieback noted.	Not under clients control	30- 40	B1

23	Pedunculate Oak <i>Quercus robur</i>	10	500 x 2 #	N 7 E 7 S 7 W7	2	EM	In private ownership-unable to get anywhere near the base of the tree because of dense vegetation.	Not under clients control	>40	B1
Group 13	Wych Elms (<i>Ulmus</i>) Myrobalan Plum thicket (<i>Prunus</i>)	5	150 #	N – E – S – W-	0	Y	In private ownership-unable to get anywhere near the base of the trees because of dense vegetation-mostly dead Elms with the others dying leaving only the wild Plum thicket at the northern corner of the garden abutting the field.	Not under clients control	<10	U
Group 14	Grey Poplars (<i>Populus</i>) Hawthorns (<i>Crataegus</i>) Elms (<i>Ulmus</i>)	3 to 12	20 to 180 #	N – E – S – W-	0	Y to SM	Small linear grouping of trees with merged crowns.	Not under clients control	10- 20	C2
Group 15	Oaks (<i>Quercus</i>) Hawthorns (<i>Crataegus</i>)	8 to 10	Av 300 #	N 4 E 4 S 4 W4	0	Y to SM	Small linear grouping of trees with merged crowns.	Not under clients control	10- 20	B2

Following the foreshore north from The Ship PH to Langstone Mill House/Woodland:

Tree No.	Species	Ht m	Diam mm	Brch Sprd m	GC m	LS	Comments	Preliminary Management Recommendations	Rem Cont yrs	Cat
24	Eucalyptus <i>Eucalyptus spp.</i>	12	350 #	N 2.5 E 4 S 5 W4	3	SM	In private ownership-crown weighted south.	Not under clients control	20- 30	C1
25	Holm Oak <i>Quercus ilex</i>	10	500 #	N 5 E 5 S 6 W6	3	EM	In private ownership-contorted trunk-crown weighted southwest-fair shape and form.	Not under clients control	30- 40	B1
26	Tamarisk <i>Tamarix pentandra</i>	3.5	240 #	N 0.5 E 1.5 S 1.5 W1	1	EM	In private ownership-significant decay in the main trunk-poor quality tree with a limited life expectancy.	Not under clients control	<10	U
27	Pittosporum <i>Pittosporum tenuifolium</i>	3.5	200 #	N 1 E 1 S 1 W1	1	SM	In private ownership-previously heavily reduced and reshaped.	Not under clients control	10- 20	C1
Group 16	Mixed Evergreen Shrubs Tamarisk (<i>Tamarix</i>) Bay Laurel (<i>Prunus</i>)	2.5	Av 250	N 1.5 E 1.5 S 1.5 W1.5	1	SM	In private ownership-crown shapes dictated by group pressures-merged crowns.	Not under clients control	10- 20	C2

28	Purple Crab <i>Malus x purpurea</i>	4	450 #	N 2.5 E 2.5 S 2.5 W2.5	1.5	M	In private ownership-Ivy smothering base, trunk and crown.	Not under clients control	20-30	B1
Group 17	Figs x 2 (<i>Ficus</i>) Cabbage Palm x 3 (<i>Cordyline</i>) + Mixed Shrubs	3.5	Av 180 x6 Av 200 #	N 2 E 2 S 2 W2	1	SM	In private ownership-previously heavily reduced and reshaped.	Not under clients control	10-20	C2
Group 18	Holm Oaks x 2 <i>Quercus ilex</i>	14	800 #	N 5 E 5 S 5 W5	4	M	In private ownership-previously heavily reduced and reshaped.	Not under clients control	>40	B2
29	Monterey Pine <i>Pinus radiata</i>	10	600 #	N 7 E 7 S 7 W7	1.5	EM	In private ownership-small diameter deadwood throughout-low branching habit-fair shape and form overall.	Not under clients control	>40	B1
Wood 1	Grey Poplar (<i>Populus</i>) Crack Willow (<i>Salix</i>) Alder (<i>Alnus</i>) Field Maple (<i>Acer</i>) Wych Elm (<i>Ulmus</i>) Hawthorn (<i>Crataegus</i>) Elderberry (<i>Sambucus</i>) Oak (<i>Quercus</i>) Ash (<i>Fraxinus</i>) Monterey Pine (<i>Pinus</i>)	5 to 20	100 to 550	N – E – S – W-	1.5	Y to M	In private ownership-one large Grey Poplar close to access point at southern end and then a narrow strip of land between footpath and Mill Pond containing mixed Poplar, Willows, Elm (dead or dying), Alder and Field Maples -it opens out the deeper you get in to the woodland and as it widens out there are more mature Poplars, Oaks and Ash with a few Monterey Pines.	Not under clients control	>40	A2

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

Public Footpath from Mill Lane to Langstone Sailing Club :

Tree No.	Tree Species	Cat	Diam mm	BS5837:2012 Table1 Radial Protection Zone m	BS5837:2012 Table D1 Polygon Area m ²
Group 6	Mixed Species (Deciduous)	C2	100 to 350	1.2 4.2	5 55
Group 7	Ash (<i>Fraxinus</i>) & Sycamore (<i>Acer</i>)	C2	75 to 350	0.9 4.2	3 55
Group 8	Mixed Species (Deciduous)	C2	100 to 350	1.2 4.2	5 55

Old Billy Line Bridlepath and following Dog Walking Field Edges :

Tree No.	Tree Species	Cat	Diam mm	BS5837:2012 Table1 Radial Protection Zone m	BS5837:2012 Table D1 Polygon Area m ²
Group 9	Hawthorns (<i>Crataegus</i>)	B2	Av 350	4.2	55
6	Hawthorn <i>Crataegus monogyna</i>	B1	400 #	4.8	72
7	Pedunculate Oak <i>Quercus robur</i>	A1	1200	14.4	652
Group 10	Ash (<i>Fraxinus</i>) x 1 of Hawthorn (<i>Crataegus</i>) x 2 of	B2	200 400 #	2.4 4.8	18 72
8	Elderberry <i>Sambucus nigra</i>	B1	300 x 2 #	5.1	81

9	Holly <i>Ilex aquifolium</i>	B1	250 250 #	4.2	57
10	Common Beech <i>Fagus sylvatica</i>	B1	300 #	3.6	41
11	Hawthorn <i>Crataegus monogyna</i>	C1	250 #	3.0	28
12	Common Ash <i>Fraxinus excelsior</i>	C1	160 #	1.9	12
Hedge 2	Hawthorn (<i>Crataegus</i>) Elderberry (<i>Sambucus</i>) Ash (<i>Fraxinus</i>)	B2	Av 150 x5 #	4.0	51
13	Common Ash <i>Fraxinus excelsior</i>	B1	150 x4 #	3.6	41
14	Common Ash <i>Fraxinus excelsior</i>	C1	900 #	10.8	366
Group 11	Sycamores (<i>Acer</i>) x 3 of Ash (<i>Fraxinus</i>) x 3 of	B2	Av 350 x3 #	7.3	166
Hedge 3	Hawthorn (<i>Crataegus</i>) Elderberry (<i>Sambucus</i>) Myrobalan Plum (<i>Prunus</i>)	B2	Av 150 x5 #	4.0	51
15	Common Ash <i>Fraxinus excelsior</i>	C1	150 x4 #	3.6	41
16	Holly <i>Ilex aquifolium</i>	B1	170 x4 #	4.1	52
Group 12	Wych Elms <i>Ulmus glabra</i>	U	Av 170 #	2.0	13
17	Common Ash <i>Fraxinus excelsior</i>	C1	550 #	6.6	137

18	Sycamore <i>Acer pseudoplatanus</i>	B1	450 #	5.4	92
19	Sycamore <i>Acer pseudoplatanus</i>	A1	750 #	9.0	255
20	Common Ash <i>Fraxinus excelsior</i>	U	450 #	5.4	92
21	Hornbeam <i>Carpinus betulus</i>	A1	450 #	5.4	92
22	Hybrid Poplar <i>Populus euroamericana</i>	B1	1200 #	14.4	652
23	Pedunculate Oak <i>Quercus robur</i>	B1	500 x 2 #	8.5	226
Group 13	Wych Elms (<i>Ulmus</i>) Myrobalan Plum thicket (<i>Prunus</i>)	U	150 #	1.8	10
Group 14	Grey Poplars (<i>Populus</i>) Hawthorns (<i>Crataegus</i>) Elms (<i>Ulmus</i>)	C2	20 to 180 #	0.2 2.2	0.5 15
Group 15	Oaks (<i>Quercus</i>) Hawthorns (<i>Crataegus</i>)	B2	Av 300 #	3.6	41

Following the foreshore north from The Ship PH to Langstone Mill House/Woodland:

Tree No.	Tree Species	Cat	Diam mm	BS5837:2012 Table1 Radial Protection Zone m	BS5837:2012 Table D1 Polygon Area m ²
24	Eucalyptus <i>Eucalyptus spp.</i>	C1	350 #	4.2	55
25	Holm Oak <i>Quercus ilex</i>	B1	500 #	6.0	113

26	Tamarisk <i>Tamarix pentandra</i>	U	240 #	2.9	26
27	Pittosporum <i>Pittosporum tenuifolium</i>	C1	200 #	2.4	18
Group 16	Mixed Evergreen Shrubs Tamarisk (<i>Tamarix</i>) Bay Laurel (<i>Prunus</i>)	C2	Av 250	3.0	28
28	Purple Crab <i>Malus x purpurea</i>	B1	450 #	5.4	92
Group 17	Figs x 2 (<i>Ficus</i>) Cabbage Palm x 3 (<i>Cordyline</i>) + Mixed Shrubs	C2	Av 180 x6 #	5.3	88
			Av 200 #	2.4	18
Group 18	Holm Oaks x 2 <i>Quercus ilex</i>	B2	800 #	9.6	290
29	Monterey Pine <i>Pinus radiata</i>	B1	600 #	7.2	163
Wood 1	Grey Poplar (<i>Populus</i>) Crack Willow (<i>Salix</i>) Alder (<i>Alnus</i>) Field Maple (<i>Acer</i>) Wych Elm (<i>Ulmus</i>) Hawthorn (<i>Crataegus</i>) Elderberry (<i>Sambucus</i>) Oak (<i>Quercus</i>) Ash (<i>Fraxinus</i>) Monterey Pine (<i>Pinus</i>)	A2	100 to 550	1.2 6.6	5 137

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: **NO-RSAM** = Remove for sound arboricultural management reasons **NO-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

Public Footpath from Mill Lane to Langstone Sailing Club :

Trees	Species	Cat	Stem Diam mm	BS5837:2012 Radial Protection Area m	BS5837:2012 Table D1 Root Protect. Area m ²	Distance from Site Features (see key above)	Can Trees Be Retained
6.1	Ash	B	350	4.2	55	1m to closest point of construction works – would need to be removed to facilitate redevelopment proposals	NO- coppice at gl
6.2	Elm	dead	-	-	-	-	NO-RSAM
6.3	Elms x2	dead	-	-	-	-	NO-RSAM
6.4	Hawthorn	B	300	3.6	41	5m to closest point of construction works	YES
6.5	Ash	B	250 180	3.7	43	UF of construction works	NO-coppice at gl
6.6	Plums/Elder	C	Av 150	1.8	10	UF of construction works	NO-coppice at gl x 2 trees
6.7	Ash x5	C	Av 170	2.0	13	3.5m to closest point of construction works	YES
6.8	Sycamore	B	350 x3	7.3	166	5m to closest point of construction works	YES
6.9	Sycamore	B	240	2.9	26	UF of construction works	NO-RTFD
6.10	Haw/Plum/Apple	C	Av 170	2.0	13	1m to closest point of construction works	NO-coppice at gl
6.11	Sycamore	B	350	4.2	55	4.5m to closest point of construction works	YES
6.12	Elder	dead	-	-	-	-	NO-RSAM
6.13	Hawthorn	B	100	1.2	5	UF of construction works	NO-coppice at gl

Trees	Species	Cat	Stem Diam mm	BS5837:2012 Radial Protection Area m	BS5837:2012 Table D1 Root Protect. Area m ²	Distance from Site Features (see key above)	Can Trees Be Retained
6.14	Hawthorn	B	240	2.9	26	UF of construction works	NO-coppice at gl
6.15	Plum	B	350	4.2	55	At edge of construction works	NO-coppice at gl
6.16	Elms x2	dead	-	-	-	-	NO-RSAM
6.17	Sycamores x2	B	300	3.6	41	6m to closest point of construction works	YES
6.18	Elder	C	200	2.4	18	2.4m to closest point of construction works	YES
6.19	Elder/Syc saplings	C	Av 100	1.2	5	1.2m to closest point of construction works	YES
6.20	Hawthorn	C	150	1.8	10	1m to closest point of construction works	NO-coppice at gl
6.21	Hawthorn	C	150	1.8	10	1m to closest point of construction works	NO-coppice at gl
6.22	Plums x4	C	150	1.8	10	3m to 5m to closest point of construction works	YES
6.23	Oak	B	250	3.0	28	3m to closest point of construction works	YES
6.24	Elder/Syc saplings	C	Av 100	1.2	5	1.2m to closest point of construction works	YES
7.1	Ash	C	350	4.2	55	Work will be taking place within the RPA to the north and south sides of this tree but with careful arb expert monitored 'hand digging' I feel that it is worth trying to keep it – particularly given that 7.2;7.3;7.5 & 7.6 will be lost here.	YES (1)
7.2	Sycamore	C	75	0.9	3	UF of construction works	NO-RTFD
7.3	Hawthorn	B	180 x3	3.7	44	UF of construction works	NO-RTFD
7.4	Sycamore	C	300	3.6	41	Work will be taking place within the RPA to the north and south sides of this tree but with careful arb expert monitored 'hand digging' I feel that it is worth trying to keep it – particularly given that 7.2;7.3;7.5 & 7.6 will be lost here.	YES (1)
7.5	Hawthorn	C	170	2.0	13	UF of construction works	NO-RTFD

Trees	Species	Cat	Stem Diam mm	BS5837:2012 Radial Protection Area m	BS5837:2012 Table D1 Root Protect. Area m ²	Distance from Site Features (see key above)	Can Trees Be Retained
7.6	Sycamore	C	200	2.4	18	UF of construction works	NO-RTFD
8.1	Ash	C	375	4.5	64	1m to upgraded footpath	NO-coppice at gl
8.2	Ash	B	350	4.2	55	1m to upgraded footpath	NO-coppice at gl
8.3	Hazels	C	100 x5	2.7	23	1m to upgraded footpath	NO-coppice at gl
8.4	Ash	C	180	2.2	15	1.5m to construction works	YES (1)
8.5	Sycamore	B	250 200	3.8	46	2m to construction works	YES (1)
8.6	Apples	C	120	1.4	7	0.5m to construction works	NO-coppice at gl
8.7	Sycamore	B	350	4.2	55	3m to construction works	YES (1)
8.8	Ash	C	200 160	3.1	30	3.5m to construction works	YES
8.9	Sycamore	B	300 270 250	5.7	102	4.5m to construction works	YES (1)
8.10	Sycamore	C	280	3.4	35	2.8m to construction works	YES (1)
8.11	Elm	dead	-	-	-	Remove for health and safety reasons	NO-RSAM
8.12	Ash	C	300	3.6	41	At edge of construction works	NO-coppice at gl
8.13	Bay	C	300	3.6	41	2.5m to construction works	NO-coppice at gl
8.14	Hawthorn	dead	-	-	-	Remove for health and safety reasons	NO-RSAM
8.15	Hawthorn	B	180 180	3.1	29	1.5m to construction works	NO-coppice at gl
8.16	Hawthorn	C	170	2.0	13	3.5m to construction works	YES
8.17	Hawthorn	B	180	2.2	15	2m to construction works	YES (1)

Trees	Species	Cat	Stem Diam mm	BS5837:2012 Radial Protection Area m	BS5837:2012 Table D1 Root Protect. Area m ²	Distance from Site Features (see key above)	Can Trees Be Retained
8.18	Sycamore	C	240	2.9	26	2m to construction works	YES (1)
8.19	Ash	C	300	3.6	41	At edge of construction works	NO-coppice at gl
8.20	Sycamore	C	150	1.8	10	1.2m to construction works	NO-coppice at gl
8.21	Sycamore	B	350	4.2	55	2m to construction works	NO-coppice at gl
8.22	Sycamore	U	200	2.4	18	1.5m to construction works	NO-coppice at gl
8.23	Sycamore	C	200	2.4	18	2m to construction works	YES (1)
8.24	Ash	C	280	3.4	35	At edge of construction works	NO-coppice at gl
8.25	Sycamore	C	200 160	3.1	30	2.7m to construction works	YES (1)
8.26	Sycamores	C	200	2.4	18	3m to construction works	YES
8.27	Sycamore	C	200	2.4	18	2m to construction works	YES (1)
8.28	Sycamore	C	180	2.2	15	3.5m to construction works	YES
8.29	Sycamore	C	300	3.6	41	2m to construction works	YES (1)
8.30	Hawthorn	C	150 100	2.2	15	At edge of construction works	NO-coppice at gl
8.31	Sycamore	C	170 170	2.9	26	0.5m to construction works	NO-coppice at gl
8.32	Sycamore	C	200 200	3.4	36	0.5m to construction works	NO-coppice at gl
8.33	Hawthorn	B	180 140	2.7	24	UF of construction	NO-coppice at gl
8.34	Sycamore	B	250	3.0	28	At edge of construction works	NO-coppice at gl
8.35	Corsican Pine	B	300 200	4.3	59	5.5m to construction works	YES
8.36	Sycamore	C	75	0.9	3	UF of construction	NO-RTFD

Old Billy Line Bridlepath and following Dog Walking Field Edges :

Trees	Species	Cat	Stem Diam mm	BS5837:2012 Radial Protection Area m	BS5837:2012 Table D1 Root Protect. Area m ²	Distance from Site Features (see key above)	Can Trees Be Retained
Group 9	Hawthorns (<i>Crataegus</i>)	B2	Av 350	4.2	55	Av 6m + to site access / construction works	YES
Grp 9 a)	Ash	C1	300	3.6	41	UF of new widened construction access to the field/site	NO-RTFD
Grp 9 b)	Ash	C1	300	3.6	41	UF of new widened construction access to the field/site	NO-RTFD
Grp 9 c)	Hawthorn	B1	250	3.0	28	UF of new widened construction access to the field/site	NO-RTFD
Grp 9 d)	Norway Maple	B1	350	4.2	55	UF of new widened construction access to the field/site	NO-RTFD
6	Hawthorn <i>Crataegus monogyna</i>	B1	400 #	4.8	72	11m to construction vehicle corridor	YES
7	Pedunculate Oak <i>Quercus robur</i>	A1	1200	14.4	652	18m+ to construction vehicle corridor	YES
Group 10	Ash (<i>Fraxinus</i>) x 1 of	B2	200	2.4	18	4.8m at closest point to construction vehicle corridor	YES
	Hawthorn (<i>Crataegus</i>) x 2 of		400 #	4.8	72		
8	Elderberry <i>Sambucus nigra</i>	B1	300 x 2 #	5.1	81	7m to construction compound	YES
9	Holly <i>Ilex aquifolium</i>	B1	250 250 #	4.2	57	5m to construction compound	YES
10	Common Beech <i>Fagus sylvatica</i>	B1	300 #	3.6	41	12m+ to construction compound	YES
11	Hawthorn <i>Crataegus monogyna</i>	C1	250 #	3.0	28	5m to construction compound	YES

Trees	Species	Cat	Stem Diam mm	BS5837:2012 Radial Protection Area m	BS5837:2012 Table D1 Root Protect. Area m ²	Distance from Site Features (see key above)	Can Trees Be Retained
12	Common Ash <i>Fraxinus excelsior</i>	C1	160 #	1.9	12	5m to construction compound	YES
Hedge 2	Hawthorn (<i>Crataegus</i>) Elderberry (<i>Sambucus</i>) Ash (<i>Fraxinus</i>)	B2	Av 150 x5 #	4.0	51	5m to construction compound (except for widened access point between fields)	YES NO-RTFD
13	Common Ash <i>Fraxinus excelsior</i>	B1	150 x4 #	3.6	41	16m to construction compound	YES
14	Common Ash <i>Fraxinus excelsior</i>	C1	900 #	10.8	366	16m to construction compound	YES
Group 11	Sycamores (<i>Acer</i>) x 3 of Ash (<i>Fraxinus</i>) x 3 of	B2	Av 350 x3 #	7.3	166	Avg 14m to construction compound	YES
Hedge 3	Hawthorn (<i>Crataegus</i>) Elderberry (<i>Sambucus</i>) Myrobalan Plum (<i>Prunus</i>)	B2	Av 150 x5 #	4.0	51	4.5m to construction compound (except for widened access point between fields) [Plus in SE corner to facilitate soil bund works]	YES NO-RTFD NO-RTFD
15	Common Ash <i>Fraxinus excelsior</i>	C1	150 x4 #	3.6	41	4m to construction compound	YES
16	Holly <i>Ilex aquifolium</i>	B1	170 x4 #	4.1	52	4m to construction compound	YES
Group 12	Wych Elms <i>Ulmus glabra</i>	U	Av 170 #	2.0	13	UF of development works	NO-RTFD
17	Common Ash <i>Fraxinus excelsior</i>	C1	550 #	6.6	137	Unaffected by development works	YES
18	Sycamore <i>Acer pseudoplatanus</i>	B1	450 #	5.4	92	Unaffected by development works	YES
19	Sycamore <i>Acer pseudoplatanus</i>	A1	750 #	9.0	255	Unaffected by development works	YES

Trees	Species	Cat	Stem Diam mm	BS5837:2012 Radial Protection Area m	BS5837:2012 Table D1 Root Protect. Area m ²	Distance from Site Features (see key above)	Can Trees Be Retained
20	Common Ash <i>Fraxinus excelsior</i>	U	450 #	5.4	92	Unaffected by development works	YES
21	Hornbeam <i>Carpinus betulus</i>	A1	450 #	5.4	92	Unaffected by development works	YES
22	Hybrid Poplar <i>Populus euroamericana</i>	B1	1200 #	14.4	652	Unaffected by development works	YES
23	Pedunculate Oak <i>Quercus robur</i>	B1	500 x 2 #	8.5	226	Unaffected by development works	YES
Group 13	Wych Elms (<i>Ulmus</i>) Myrobalan Plum thicket (<i>Prunus</i>)	U	150 #	1.8	10	UF of development works	NO-RTFD
Group 14	Grey Poplars (<i>Populus</i>) Hawthorns (<i>Crataegus</i>) Elms (<i>Ulmus</i>)	C2	20 to 180 #	0.2 2.2	0.5 15	Avg 8m+ to construction compound	YES
Group 15	Oaks (<i>Quercus</i>) Hawthorns (<i>Crataegus</i>)	B2	Av 300 #	3.6	41	Avg 8m+ to construction compound	YES

Following the foreshore north from The Ship PH to Langstone Mill House/Woodland:

Trees	Species	Cat	Stem Diam mm	BS5837:2012 Radial Protection Area m	BS5837:2012 Table D1 Root Protect. Area m ²	Distance from Site Features (see key above)	Can Trees Be Retained
24	Eucalyptus <i>Eucalyptus spp.</i>	C1	350 #	4.2	55	Behind a brick boundary wall with at least 1.5m footings depth	YES
25	Holm Oak <i>Quercus ilex</i>	B1	500 #	6.0	113	Behind a brick boundary wall with at least 1.5m footings depth	YES

Trees	Species	Cat	Stem Diam mm	BS5837:2012 Radial Protection Area m	BS5837:2012 Table D1 Root Protect. Area m ²	Distance from Site Features (see key above)	Can Trees Be Retained
26	Tamarisk <i>Tamarix pentandra</i>	U	240 #	2.9	26	Behind a brick boundary wall with at least 1.5m footings depth	YES
27	Pittosporum <i>Pittosporum tenuifolium</i>	C1	200 #	2.4	18	Behind a brick boundary wall with at least 1.5m footings depth	YES
Group 16	Mixed Evergreen Shrubs Tamarisk (<i>Tamarix</i>) Bay Laurel (<i>Prunus</i>)	C2	Av 250	3.0	28	Behind a brick boundary wall with at least 1.5m footings depth	YES
28	Purple Crab <i>Malus x purpurea</i>	B1	450 #	5.4	92	Behind a brick boundary wall with at least 1.5m footings depth	YES
Group 17	Figs x 2 (<i>Ficus</i>) Cabbage Palm x 3 (<i>Cordyline</i>) + Mixed Shrubs	C2	Av 180 x6 # Av 200 #	5.3 2.4	88 18	Behind a brick boundary wall with at least 1.5m footings depth	YES
Group 18	Holm Oaks x 2 <i>Quercus ilex</i>	B2	800 #	9.6	290	Behind a brick boundary wall with at least 1.5m footings depth	YES
29	Monterey Pine <i>Pinus radiata</i>	B1	600 #	7.2	163	5.5m to construction works	YES (1)
Woodland 1	Grey Poplar (<i>Populus</i>) Crack Willow (<i>Salix</i>) Alder (<i>Alnus</i>) Field Maple (<i>Acer</i>) Wych Elm (<i>Ulmus</i>) Hawthorn (<i>Crataegus</i>) Elderberry (<i>Sambucus</i>) Oak (<i>Quercus</i>) Ash (<i>Fraxinus</i>) Monterey Pine (<i>Pinus</i>)	A2	100 to 550	1.2 6.6	5 137	A 4m depth of edge planting abutting the public footpath will be lost to development including one mature Hybrid Poplar – the remainder behind this to the east and The Mill Pond will be retained	mostly YES Part NO-RTFD

5.0 RECOMMENDED TREE WORKS

- No works are required to the general tree stock but where specific trees are shown for removal to facilitate the layout they are to be cut down in a controlled manner to avoid damage to other trees and their surroundings. The stumps are to be ground out by machine except where they are shown to be coppiced and these will be cut down to ground level and allowed to re-shoot and contribute to the general shrubbery and low canopy cover in the future.

6.0 METHOD STATEMENT

Generic

- 6.1 All of the recommended tree works should 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 in [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 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 [**Construction Exclusion Zone**] :-

- **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/toilet blocks and any mixing areas are to be located outside of and well clear of retained tree RPA's.

6.5 All Utility Service connections are to be located outside of tree RPA's.

6.6 **Site Specific Mitigation Measures**

Arboricultural Expert Monitored 'Hand Digging' works:-

- Break out hard surfacing with appropriate drills and hand held tools stopping as soon as bare earth is reached.
- Clear away the debris and arisings from the work face.
- Arb Expert to be called in to monitor the 'Hand Digging' works with forks ONLY initially and shovels and spades at a later date at the discretion and direction of the Arb Expert.
- If roots are encountered then they are to be carefully worked around and if they are 25mm or less in diameter and not found 'en masse' then the Arb Expert will sever them at the trench edge with clean and sharp bypass secateurs to allow works to continue.

Ground Protection Measures :-

- Whilst there is no anticipated specific need for these works it may be found that to access an area to work on it (i.e. the Mill Lane footpath link) then ground protection must be laid to give access to hand operated machinery as per BS5837:2012 Section 6.2.3.3 Recommendations.

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.

- 7.1 There would be a requirement for a site visit by the Arboricultural Expert once the Tree Works have been carried out and the Protective Fencing has been erected to check that it is of the desired quality and is 'Fit For Purpose' and also that it has been positioned correctly.
- 7.2 Lines of communication will need to be established with the Site Manager and a Contact Directory compiled and issued to all development team members so that in the event that an incident occurs involving the retained trees that requires urgent advice and guidance from the project Arboricultural Expert this can be easily organised.
- 7.3 The details of the works will be photographed by the Arb Expert and the following reporting procedure will be adopted. This is an example of the format for the **Site Monitoring Schedule** that would be prepared. :-

Schedule Of Site Monitoring & Supervision for – Langstone Flood and Coastal Erosion Scheme, Langstone, Havant

- In accordance with the Arboricultural Method Statement Report - 1241.bjh.May24 & Tree Protection Plan

Date of Inspection	Item	In Attendance	Notes/Observations From Inspection	Details Of Any Follow Up Action Required
tba	Tree Works & Protective Fencing	Project Arb Consultant & Site Construction Manager	• A joint site inspection was conducted and agreement reached.....	•

8.0 CONCLUSIONS

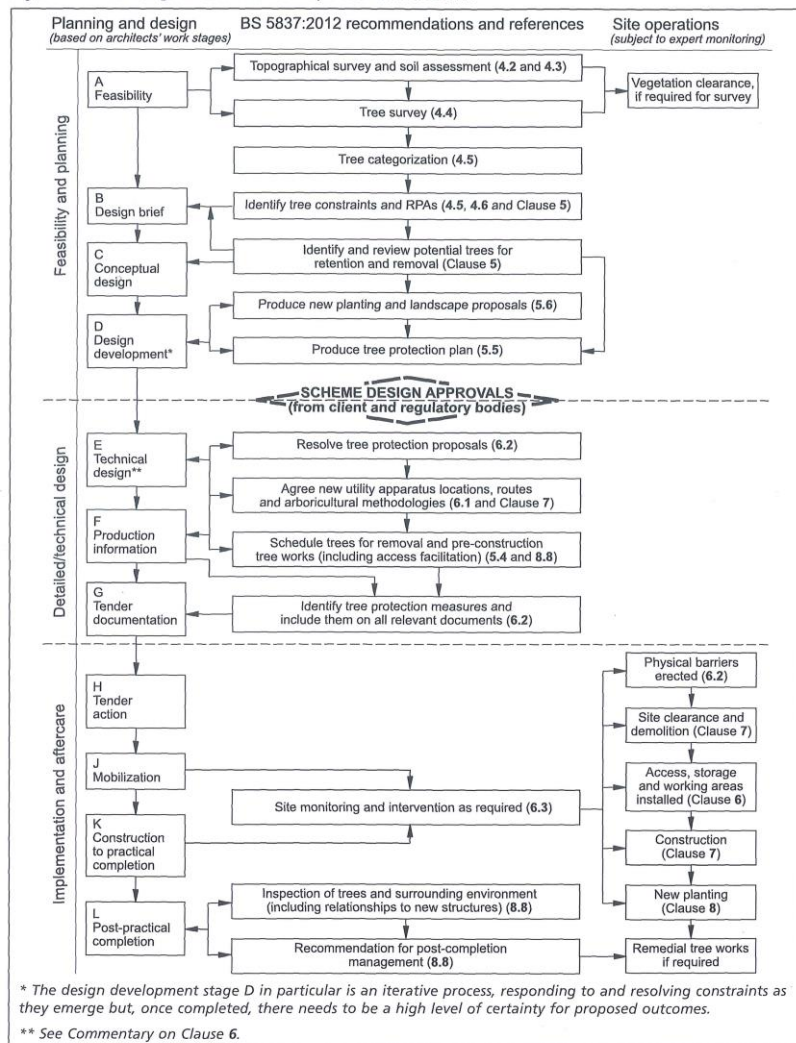
- It is not possible to undertake a major engineering project such as this without incurring tree losses and there will need to be a lot of small trees removed from the section from Mill Lane through to Langstone Sailing Club to facilitate the new raised level footpath and soil bunding. There is a preference for coppicing wherever possible rather than complete removal so that hopefully plant material can grow back and contribute to the general lower canopy vegetation.
- To mitigate the overall tree loss here there will need to be a comprehensive amount of new native tree and shrub planting throughout this corridor to enhance it for the future. This I believe has been allowed for within the Landscape Master Plan for the project.
- Another area of enforced losses will be from Woodland 1 beside the footpath leading from Langstone Mill northwards into the dog walking field. These losses will be caused by the need for a raised and widened footpath link. It should be possible on completion to plant new native tree saplings into this zone to mitigate the initial losses.
- One further area of tree loss will be at the access point leading into the dog walking fields from the southern end of Langstone Avenue that will be used as the Site Compound area for the duration of the contract. On completion this area too can be replanted both with native hedgerow species and also single trees to replace those that are to be lost.
- All remaining on and off site trees can be retained with the minimum of root and crown disturbance in accordance with BS5837:2012 recommendations.
- Provided that the above methodology is strictly adhered to and in the manner set out in this report then I would not foresee any detrimental impact taking place that might undermine the health and stability or visual amenity value of those trees shown for retention on this site.



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 & Protection Plans



Coastal Partners
PROJECT



Bernie Harverson
arboriculture consultant

Langstone Flood and Coastal Erosion Risk Management Scheme

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NOTES

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- DEFENCE LENGTHS EXTENT SHOWN ARE APPROXIMATE. THE EXACT EXTENT OF THE TYPICAL CROSS SECTION IS TO BE CONFIRMED ON SITE WITH THE SUPERVISOR.
- EXISTING PATH LEVELS VARY ALONG DEFENCE LENGTH, AND BEACH LEVEL VARY SPATIALLY AND WITH TIME.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE RISK REGISTER (LANG-ACM-ZZ-ZZ-RK-ZZ-000106) FOR ANY IDENTIFIED POTENTIAL RISKS.
- ALSO REFER TO DRAWINGS:
GENERAL ARRANGEMENT - #031201
MODEL CROSS SECTIONS - #031202 TO #031203
TYPICAL DETAILS - #051204 TO #051206

DRAWING SPECIFIC NOTES:

- SITE CLEARANCE PLANS SHOULD BE READ IN CONJUNCTION WITH THE DESIGN DRAWINGS FOR ANY SPECIFIC REQUIREMENTS FOR THE REMOVAL OF SPECIFIC STRUCTURES AND STREET FURNITURES.
- SITE CLEARANCE PLANS SHOULD BE READ IN CONJUNCTION WITH LANG-ACM-ZZ-F2-DR-ZZ-031202, AND LANG-ACM-ZZ-ZZ-DR-ZZ-031202 FOR BURIED UTILITIES.
- CONTRACTOR SHOULD REMOVE STREET FURNITURES, INCLUDING SIGNAGE, AS NECESSARY TO CONTRACTOR METHODLOGY. IF REMOVAL REQUIRED, IT SHALL BE CAREFULLY REMOVED STORED SAFELY AND EITHER REINSTATED OR DISPOSED OF ON COMPLETION.
- IF REMOVAL NOT REQUIRED, THE CONTRACTOR SHOULD TAKE NECESSARY PRECAUTIONS TO ENSURE CONSTRUCTION WORKS DO NOT DAMAGE THE STREET FURNITURES.
- PRIVATE ASSETS, e.g. GATES, HANDRAILS, FENCINGS, BELONGING TO THE PROPERTY OWNER SHALL BE CAREFULLY REMOVED, STORED, AND REINSTATED IF REQUIRED OR RETURNED TO THE PROPERTY OWNER.
- CONTRACTOR SHALL REMOVE OBSTACLES ALONG THE FORESHORE THAT PREVENT ACCESS AS REQUIRED.
- AREAS OF INVASIVE SPECIES ARE INDICATIVE ONLY. CONTRACTOR TO UNDERTAKE SURVEYS AHEAD OF SITE CLEARANCE WORKS.
- CONTRACTOR TO ESTABLISH SITE BOUNDARIES, DIVERSION ROUTES AND MANAGE PUBLIC INTERFACES WITH THE WORKS.
- REFER TO LOCATION PLAN FOR FULL EXTENTS OF COMPOUNDS AND ACCESS ROUTES.
- WHERE POSSIBLE, THE CONTRACTOR SHOULD AVOID CLEARANCE WORKS IN VICINITY OF ROOT PROTECTION AREAS.

ISSUE/REVISION

P/O	DATE	DESCRIPTION
P01	21/11/23	100% Detailed Design
P02	08/02/24	Construction Issue
C01	08/02/24	Construction Issue
I/R	DATE	DESCRIPTION

ISSUE PURPOSE / SUITABILITY

Detail Design Authorised/Accepted

KEY PLAN

PROJECT NUMBER

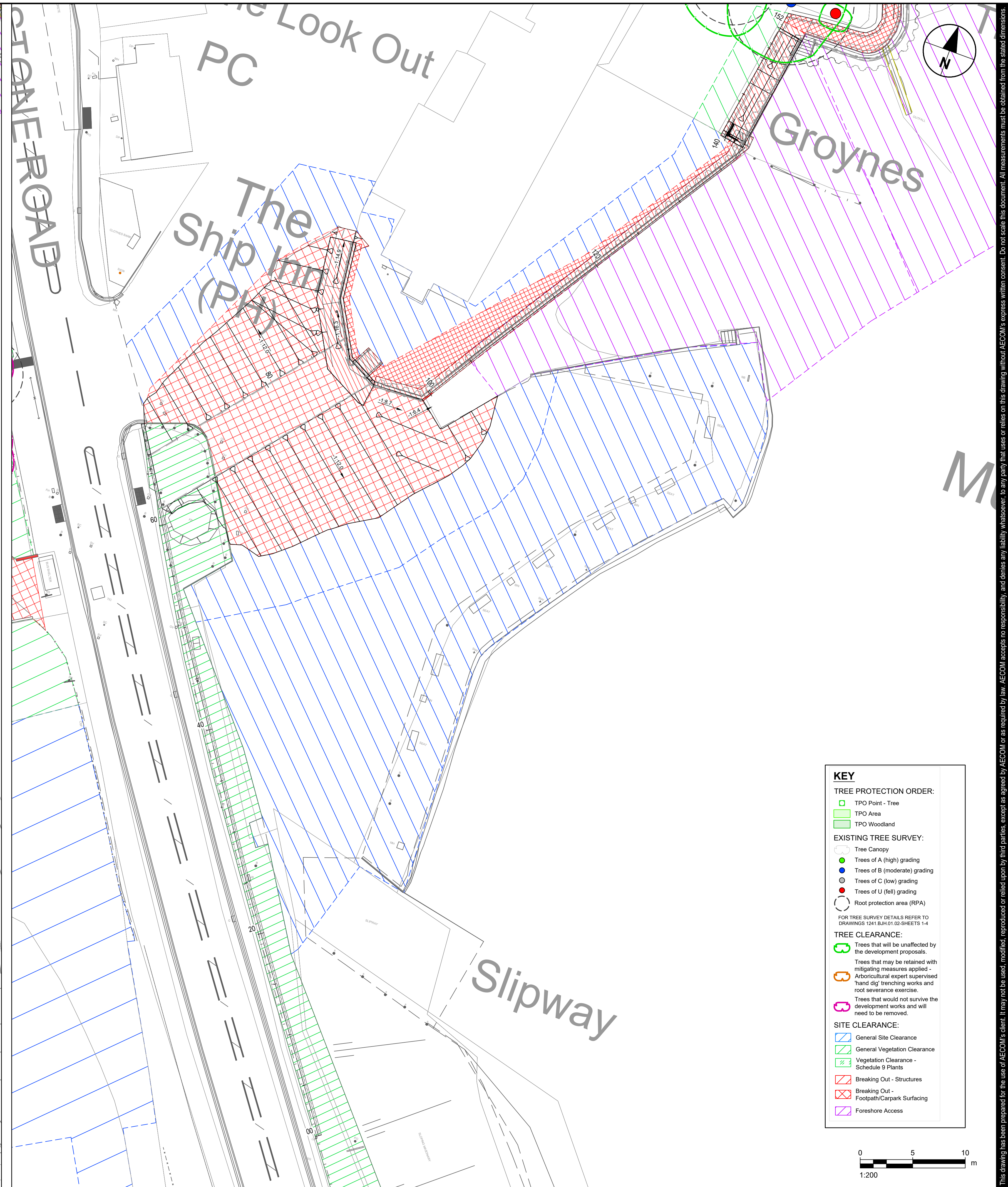
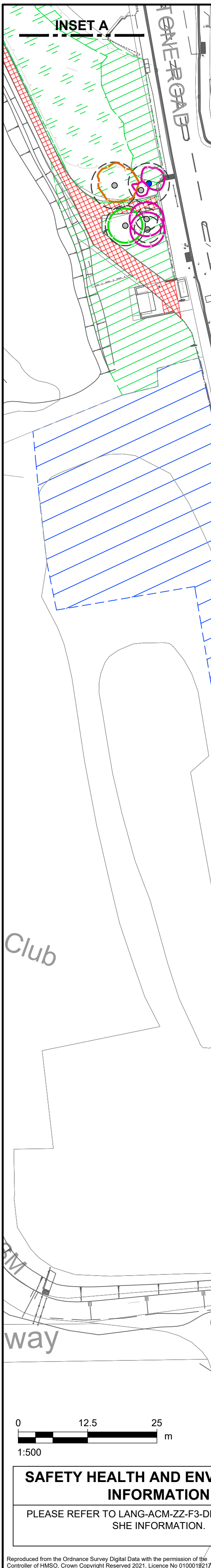
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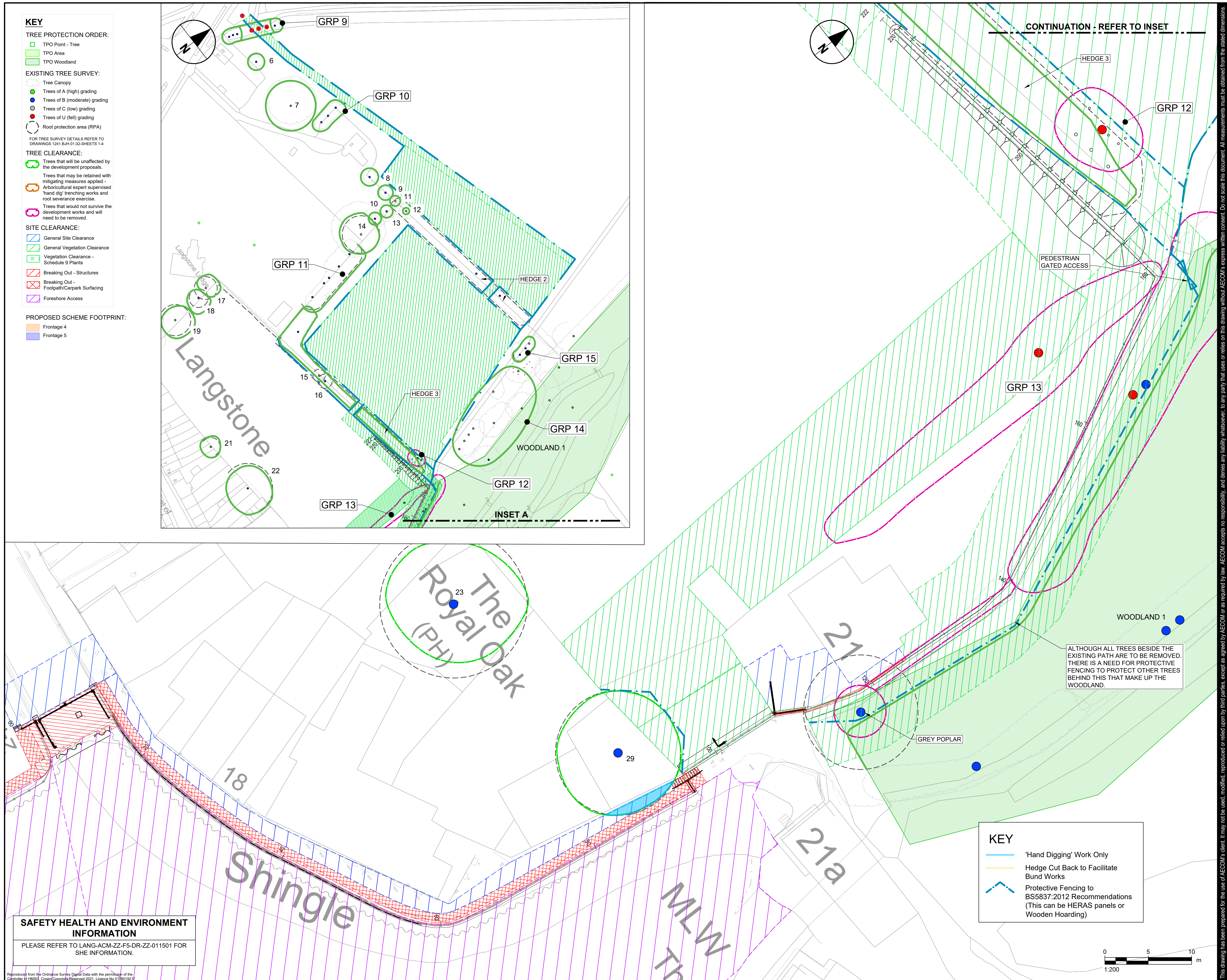
SHEET TITLE

FRONTAGE 2
TREE PROTECTION PLAN

SHEET NUMBER

LANG-ACM-TPP-F2-DR-ZZ-100002







KEY
TREE PROTECTION ORDER:
TPO Point - Tree
TPO Area
TPO Woodland
EXISTING TREE SURVEY:
Tree Canopy
Trees of A (high) grading
Trees of B (moderate) grading
Trees of C (low) grading
Trees of U (fell) grading
Root protection area (RPA)
FOR TREE SURVEY DETAILS REFER TO DRAWINGS 1241.BJH.01.02-SHEETS 1-4
TREE CLEARANCE:
Trees that will be unaffected by the development proposals.
Trees that may be retained with mitigating measures applied - Arboricultural expert supervised 'hand dig' trenching works and root severance exercise.
Trees that would not survive the development works and will need to be removed.
SITE CLEARANCE:
General Site Clearance
General Vegetation Clearance
Vegetation Clearance - Schedule 9 Plants
Breaking Out - Structures
Breaking Out - Footpath/Carpark Surfacing
Foreshore Access
PROPOSED SCHEME FOOTPRINT:
Frontage 4
Frontage 5

KEY
Protective Fencing to BS5837:2012 Recommendations (This can be HERAS panels or Wooden Hoarding)

SAFETY HEALTH AND ENVIRONMENT INFORMATION
PLEASE REFER TO LANG-ACM-ZZ-F5-DR-ZZ-011501 FOR SHE INFORMATION.

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Coastal Partners
PROJECT

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6. ALSO REFER TO DRAWINGS:
GENERAL ARRANGEMENT - #031502 AND #031503
MODEL CROSS SECTIONS - #051504 TO #051506
DRAINAGE DETAILS - ##1051 TO ##1054
DRAWING SPECIFIC NOTES:
8. SITE CLEARANCE PLANS SHOULD BE READ IN CONJUNCTION WITH THE DESIGN DRAWINGS FOR ANY SPECIFIC REQUIREMENTS FOR THE REMOVAL OF SPECIFIC STRUCTURES AND STREET FURNITURES.
9. SITE CLEARANCE PLANS SHOULD BE READ IN CONJUNCTION WITH LANG-ACM-ZZ-F5-DR-ZZ-031502 AND #031503 FOR BURIED UTILITIES.
10. CONTRACTOR SHOULD REMOVE STREET FURNITURES, INCLUDING SIGNAGE, AS NECESSARY TO CONTRACTOR METHODOLOGY. IF REMOVAL REQUIRED, IT SHALL BE CAREFULLY REMOVED, STORED AND REINSTATED ON COMPLETION. IF REMOVAL NOT REQUIRED, THE CONTRACTOR SHOULD TAKE NECESSARY PRECAUTIONS TO ENSURE CONSTRUCTION WORKS DO NOT DAMAGE THE STREET FURNITURES.
11. PRIVATE ASSETS, e.g. GATES, HANDRAILS, FENCINGS, BELONGING TO THE PROPERTY OWNER SHALL BE CAREFULLY REMOVED, STORED, AND REINSTATED IF REQUIRED OR RETURNED TO THE PROPERTY OWNER.
12. CONTRACTOR SHALL REMOVE OBSTACLES ALONG THE FORESHORE THAT PREVENT ACCESS AS REQUIRED.
13. CONTRACTOR TO ESTABLISH SITE BOUNDARIES, DIVERSION ROUTES AND MANAGE PUBLIC INTERFACES WITH THE WORKS.
14. REFER TO LOCATION PLAN FOR FULL EXTENTS OF COMPOUNDS AND ACCESS ROUTES.
15. ALL ACCESS ROUTES ALONG THE FORESHORE SHALL BE KEPT TO A MINIMUM TO REDUCE IMPACT OF COMPACTION ON THE FORESHORE.

ISSUE/REVISION

P01	21/11/23	100% Detailed Design
P02	08/02/24	Construction Issue
C01	08/02/24	Construction Issue
I/R	DATE	DESCRIPTION

ISSUE PURPOSE / SUITABILITY
Detail Design Authorised/Accepted

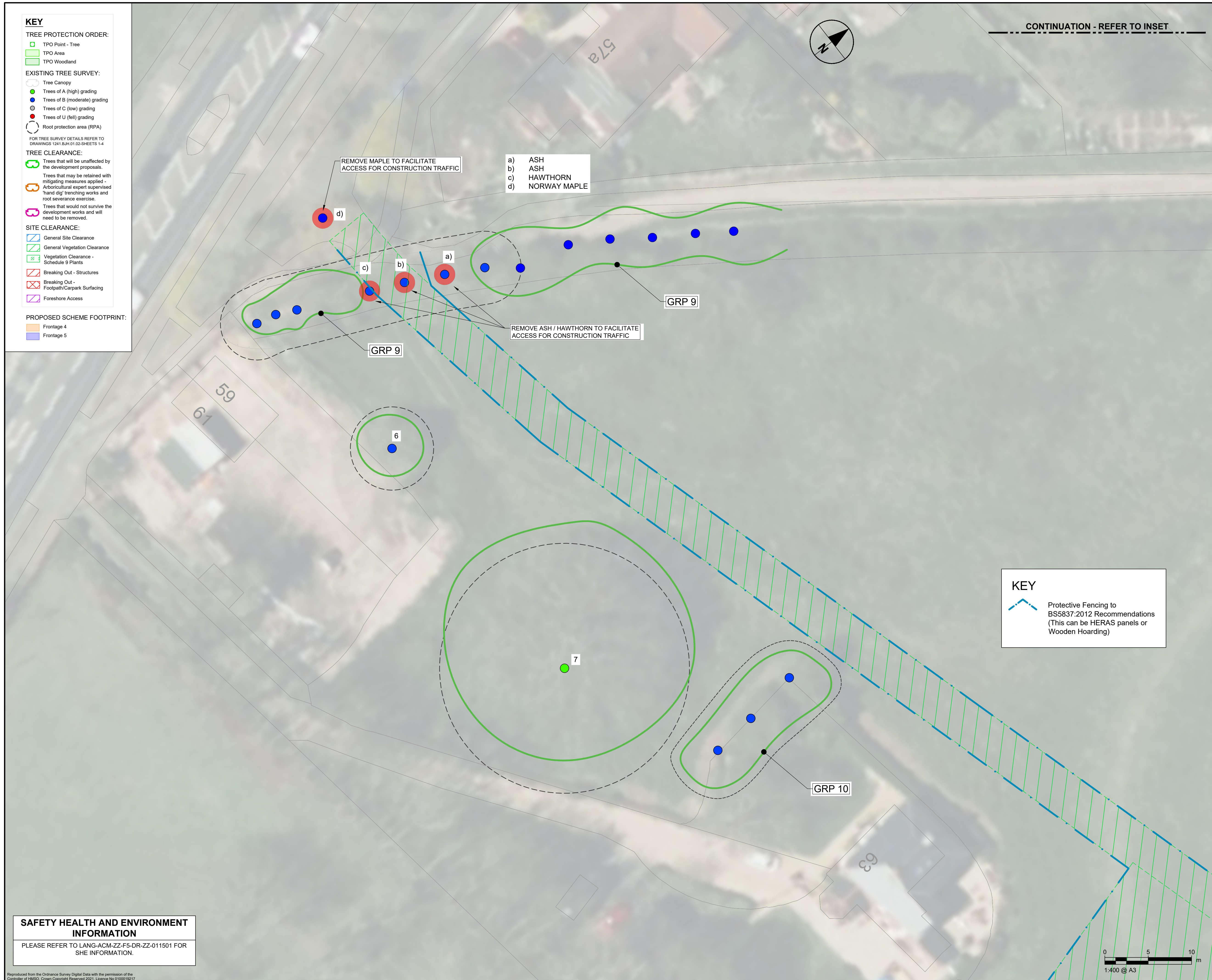
KEY PLAN

PROJECT NUMBER
60656877

SHEET TITLE

TREE PROTECTION PLAN

SHEET NUMBER
LANG-ACM-TTP-F5-DR-ZZ-100007



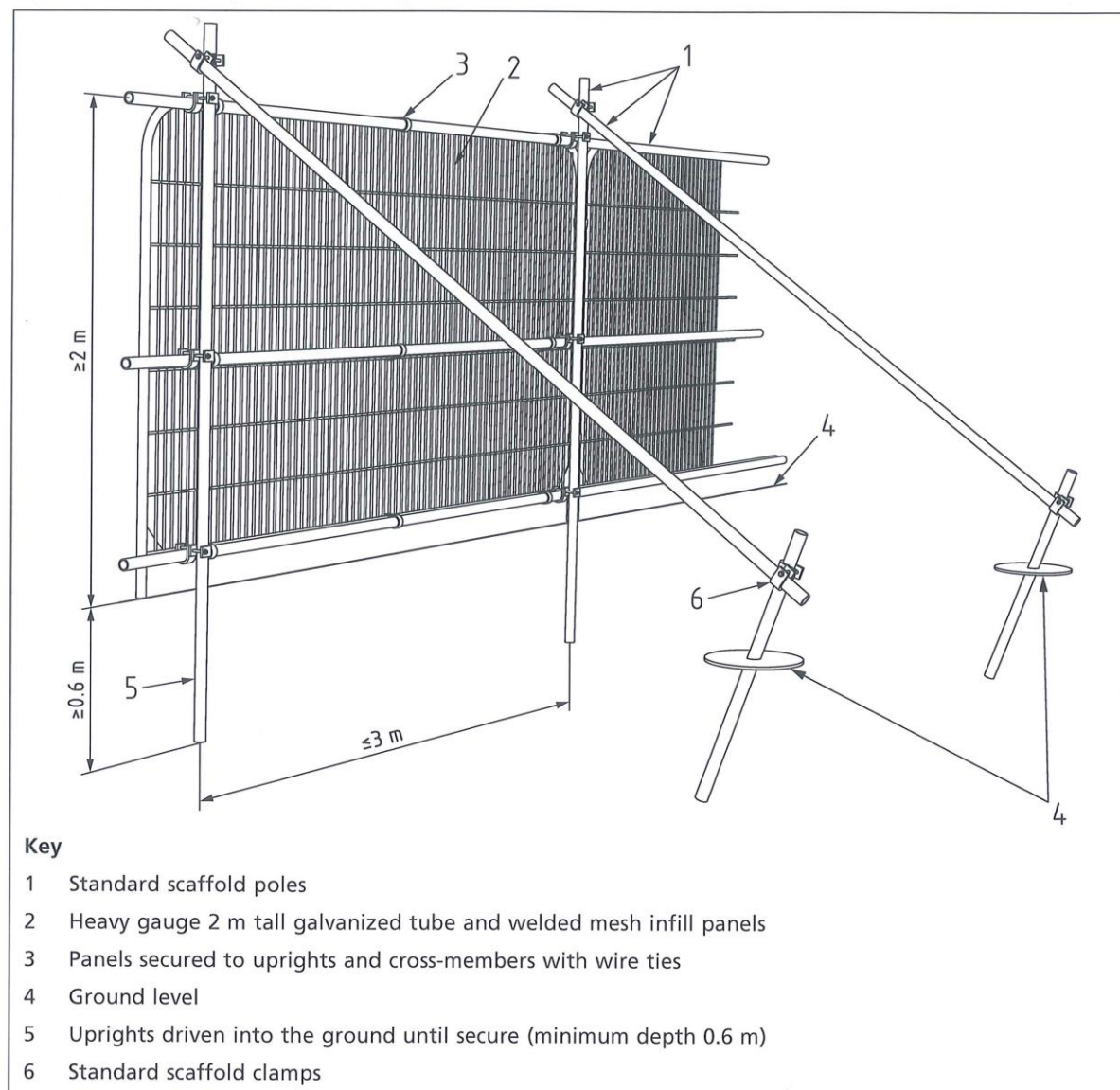


BH 3

BS5837:2012 – Figure 2

BS5837:2012 Section 6.2.3.3

Figure 2 Default specification for protective barrier



BS5837:2012 – Section 6.2.3.3 - New temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil.

Note The ground protection might comprise one of the following:

- a) for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100mm depth of woodchip), laid onto a geotextile membrane;*
- b) for pedestrian –operated plant up to a gross weight of 2t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150mm depth of woodchip), laid onto a geotextile membrane;*
- c) for wheeled or tracked construction traffic exceeding 2t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.*



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 : –

10 Southleigh Grove, Hayling Island, Hampshire PO11 0SH

- I hold the following arboricultural qualification – **National Diploma in Arboriculture (Royal Forestry Society – 1976)**
- I have **fifty three (53)** 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 Surgeons and twelve years with CBA Trees as Managing Director & Senior 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.

10 Southleigh Grove, Hayling Island, Hampshire PO11 0SH

mob: 07875 520881 - email: bernieharverson@gmail.com



ARBORICULTURAL METHOD STATEMENT

Langstone Coastal Defences Scheme

New Construction Compound Access from existing Highway

- prepared on behalf of Coastal Partners –

Section	Subject Heading
1	INTRODUCTION & CLIENTS BRIEF
2	DOCUMENT DISCLOSURE STATEMENT
3	TREE SURVEY & ROOT PROTECTION SCHEDULE
4	IMPACT ASSESSMENT & TREE PROTECTION MEASURES RECOMMENDED
5	RECOMMENDED TREE WORK
6	METHOD STATEMENT
7	MONITORING & SUPERVISION
8	CONCLUSIONS

<u>Appendices</u>	<u>Subject</u>
BH1	Figure 1- Flow Diagram from BS5837 + Tree Survey Notes
BH2	Tree Survey & Protection Plan
BH3	BS5837 – Figure 2 + BS5837 Section 6.2.3.3 + Boxed Hoarding Drawing
BH4	Qualifications & Experience

1.0 INTRODUCTION & CLIENTS BRIEF

- 1.1 I am instructed on this project by **Coastal Partners** who are conducting coastal defence improvement works in the Langstone area.
- 1.2 Following consultations with Hampshire Highways Department the access provision to the temporary compound involves amendments to the current road and footpath layout plus pedestrian crossing points.
- 1.3 There are highway verge trees which will need to be catered for and protected during this process.
- 1.4 I have been commissioned to prepare a report to satisfy the arboricultural aspects of this project to meet planning requirements.
- 1.5 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 drawings as prepared by **Havant Borough Council Civil Engineering & Landscape Team** :-
Planning Drawings Ref :-

- **HBC. 2024_22. PL. 000012. Rev B. 1:200 @ A1. July/August 2024.**
- **Hampshire County Council. Engineering Services. Standard Details. Footways Types 1a,1b,2 and 3-HCC11/C/045. Rev C. March 2020.**

These drawings have been provided to me for the purposes of my work and I rely totally on their accuracy in terms of tree locations applying crown spreads and setting out protective fencing and tree protection measures.

3.0 TREE SURVEY & ROOT PROTECTION SCHEDULES & IMPACT ASSESSMENT

3.1 I visited the site on **10th February 2025** and carried out a full site tree survey exercise in accordance with BS5837:2012 recommendations (see also the explanatory tree survey notes [at appendix BH1](#)).

Tree No.	Species	Ht m	Diam mm	Brch Sprd m	GC m	LS	Comments	Preliminary Management Recommendations	Rem Con yrs	Cat
1	Common Beech <i>Fagus sylvatica</i>	17	400	N 5 E 4 S 4 W 6	3	EM	Bifurcated at 4m-contorted trunk and crown-crown weighted to the west side-low branching habit.	No works required at this time	>40	B1
2	Norway Maple <i>Acer platanoides</i>	15	500	N 3 E 2 S 8 W 8	2.5	EM	Ivy smothering base and trunk-crown weighted to the west side-low branching habit-cables through crown-previously hard pruned back on east side-poor quality tree overall.	Advise prune to restore the crown balance.	30-40	C1
3	Norway Maple <i>Acer platanoides</i>	13	330	N 7 E 2 S 3 W 6	3	EM	Bifurcated at 3m-crown weighted to the west side-low branching habit-cables through crown- poor quality tree overall.	Advise prune to restore the crown balance.	30-40	C1
4	Common Lime <i>Tilia europaea</i>	13	350	N 5 E 4 S 3 W 9	3	EM	Ivy smothering base and trunk-crown weighted to the west side-low branching habit-multi stemmed at 4m-engulfedby Brambles- poor quality tree overall.	No works required at this time	30-40	C1
5	Norway Maple <i>Acer platanoides</i>	13	450	N 8 E 5 S 3 W 6	4	EM	Leans to the northeast side.	No works required at this time	30-40	B1
6	Lombardy Poplar <i>Populus nigra</i> 'Italica'	9	700 650 450	N 5 E 3 S 3 W 3	4	M	Multi stemmed at 1m-Ganoderma fungal heart rot decay brackets attached to trunk on north east side-this is probably why it has been so heavily topped out at 5m- pruned back on north side to clear from garden.	Advise check for internal decay for safety reasons.	10-20	C1
7	Box Elder <i>Acer negundo</i>	8	380	N 3 E 9 S 7 W 7	3	M	Suckers-multi stemmed at 2.5m-small diameter deadwood throughout-open splayed habit to crown-pruned back to clear from garden on north side.	No works required at this time	>40	A1
8	Norway Maple <i>Acer platanoides</i>	8	400	N 4 E 2 S 6 W 5	2	EM	Ivy smothering base and trunk-dieback and deadwood throughout-low crown density-cables through crown-branches engulfing light column-low branching habit-poor quality tree overall.	Advise investigation of possible internal decay.	<10	U
9	Norway Maple <i>Acer platanoides</i>	8	340	N 5 E 5 S 5 W 5	2	EM	Surface rooting and this is pressuring the GPO manhole cover and pole-leans southeast-bifurcated at 2m-low branching habit-cables through crown-branches engulfing pole.	Prune to clear the route of the cables + check GPO box for any damage.	>40	B1

10	Norway Maple <i>Acer platanoides</i>	8	330	N 5 E 4 S 5 W5	2	EM	Dead top and dieback throughout crown-suppressed to east side-low crown density-low branching habit-poor quality tree overall.	Remove all deadwood and dieback for safety reasons.	<10	U
11	Cypress Oak <i>Quercus robur</i> 'Fastigiata'	17	400	N 3 E 5 S 2.5 W3.5	2	EM	Crown weighted to the east side.	No works required at this time	>40	A1
12	Red Oak <i>Quercus rubra</i>	15	480	N 9 E 4 S 7 W9	3	M	Suppressed to east side by Copse-small diameter deadwood throughout-low branching habit.	No works required at this time	>40	B1
13	Sycamore <i>Acer pseudoplatanus</i>	15	480	N 9 E 7 S 3 W9	2.5	M	Ivy smothering base-significant dieback through crown-suppressed to northwest side by tree 12-large diameter deadwood noted-low branching habit-poor quality tree overall.	No works required at this time	30-40	C1
14	Sycamore <i>Acer pseudoplatanus</i>	12	300 180 130	N 4 E 8 S 2 W2	2.5	SM	Ivy smothering base-leans north-multi stemmed at ground level-suppressed to all but the east side-low branching habit-poor quality tree overall.	No works required at this time	30-40	C1
15	Silver Maple <i>Acer saccharinum</i>	17	630	N 10 E 10 S 7 W6	3	M	Multi stemmed at 3m-suppressed to west side by Copse-small and large diameter deadwood throughout-low branching habit.	Remove all deadwood for safety reasons.	>40	A1

3.2 A Tree Root Protection Schedule has been prepared in accordance with BS5837:2012 recommendations (see in [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
1	Common Beech <i>Fagus sylvatica</i>	B1	400	4.8	72
2	Norway Maple <i>Acer platanoides</i>	C1	500	6.0	113
3	Norway Maple <i>Acer platanoides</i>	C1	330	4.0	49
4	Common Lime <i>Tilia europaea</i>	C1	350	4.2	55
5	Norway Maple <i>Acer platanoides</i>	B1	450	5.4	92
6	Lombardy Poplar <i>Populus nigra 'Italica'</i>	C1	700 650 450	12.7 Adjusted to cater for reduced size 6.5	504 132
7	Box Elder <i>Acer negundo</i>	A1	380	4.6	65
8	Norway Maple <i>Acer platanoides</i>	U	400	4.8	72
9	Norway Maple <i>Acer platanoides</i>	B1	340	4.1	52
10	Norway Maple <i>Acer platanoides</i>	U	330	4.0	49
11	Cypress Oak <i>Quercus robur 'Fastigiata'</i>	A1	400	4.8	72
12	Red Oak <i>Quercus rubra</i>	B1	480	5.8	104

13	Sycamore <i>Acer pseudoplatanus</i>	C1	480	5.8	104
14	Sycamore <i>Acer pseudoplatanus</i>	C1	300 180 130	4.5	63
15	Silver Maple <i>Acer saccharinum</i>	A1	630	7.6	180

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 RPZ requirements of BS5837 - the data is presented here in tabular format:-

Tree No	Species	Cat	Stem Diam mm	BS5837:2012 Radial Protection Zone m	BS5837:2012 Table D1 Root Protect. Area m ²	Distance from Site Features (see key above)	Can Tree Be Retained
1	Common Beech <i>Fagus sylvatica</i>	B1	400	4.8	72	4.8m to new kerb edging 7.2m to new Type 1 Footway works	YES (1)
2	Norway Maple <i>Acer platanoides</i>	C1	500	6.0	113	0m to new Type 1 Footway works	YES (1)
3	Norway Maple <i>Acer platanoides</i>	C1	330	4.0	49	1.8m to new Type 1 Footway works	YES (1)
4	Common Lime <i>Tilia europaea</i>	C1	350	4.2	55	3.5m to new Type 1 Footway works.	YES (1)
5	Norway Maple <i>Acer platanoides</i>	B1	450	5.4	92	Under footprint of new road access and footpath amendments.	NO-RTFD
6	Lombardy Poplar <i>Populus nigra</i> 'Italica'	C1	700 650 450	12.7 Adjusted to cater for reduced size 6.5	504 132	6.5m to new blister hazard paving 7m to new Type 1 Footway works	YES
7	Box Elder <i>Acer negundo</i>	A1	380	4.6	65	6.5m to new blister hazard paving 7.2m to new Type 1 Footway works	YES

Tree No	Species	Cat	Stem Diam mm	BS5837:2012 Radial Protection Zone m	BS5837:2012 Table D1 Root Protect. Area m ²	Distance from Site Features (see key above)	Can Tree Be Retained
8	Norway Maple <i>Acer platanoides</i>	U	400	4.8	72	Under footprint of new road access and footpath amendments.	NO-RTFD
9	Norway Maple <i>Acer platanoides</i>	B1	340	4.1	52	3.5m to new Type 1 Footway works 4.5m to new blister tactile paving	YES (1)
10	Norway Maple <i>Acer platanoides</i>	U	330	4.0	49	1.5m to new blister hazard paving 4m to new Type 1 Footway works	YES (1)
11	Cypress Oak <i>Quercus robur</i> 'Fastigiata'	A1	400	4.8	72	4.8m to new Type 1 Footway works	YES (1)
12	Red Oak <i>Quercus rubra</i>	B1	480	5.8	104	1m to new Type 1 Footway works 1m to new new timber edging 5m to new kerb edging	YES (1)
13	Sycamore <i>Acer pseudoplatanus</i>	C1	480	5.8	104	1m to new Type 1 Footway works 1m to new timber edging 5m to new blister hazard paving	YES (1)
14	Sycamore <i>Acer pseudoplatanus</i>	C1	300 180 130	4.5	63	1m to new Type 1 Footway works 1m to new timber edging 4.5m to new blister hazard paving	YES (1)
15	Silver Maple <i>Acer saccharinum</i>	A1	630	7.6	180	7.6m to new Type 1 Footway works 7.8m to new kerb edging 5.9m to new blister hazard paving	YES (1)

4.2 SUMMARY

	YES Can be retained and fully protected in accordance with BS5837 recommendations - see Tree Protection Plan in appendix BH3	YES (1) Can be retained and protected in accordance with BS5837 recommendations (see Tree Protection Plan in appendix BH3) - subject to adherence to the methodology prescribed in this report – see Section 6 for full details.	NO-RTFD Recommended for removal in order to facilitate development proposals	NO-RSAM Recommended for removal on sound arboricultural management grounds [health and safety grounds] regardless of any redevelopment proposals
A	Tree 7	Tree 11 and Tree 15	-	-
B	-	Tree 1; Tree 9 and Tree 12	Tree 5	-
C	Tree 6	Tree 2; Tree 3; Tree 4; Tree 13 and Tree 14	-	-
U	-	-	-	Tree 8 and Tree 10

- 4.3 My clients preference would be to retain all of the street trees listed above but having had Highways considerations imposed on them by Hampshire County Council there will inevitably have to be direct tree losses.
- 4.4 The RPZ's for most trees overlap the highway improvement works to some degree or another, so it will therefore also be necessary to apply mitigation measures to ensure their safe and healthy retention. However, because of levels and road/footpath safety considerations we cannot fully comply with BS5837 recommendations and have a 'No Dig' porous surfacing and sub base detail.
- 4.5 The best we can do is to have Arboricultural Expert supervised 'Hand Digging' works undertaken to limit the damage to tree roots as much as is physically possible and make clean final cuts to those roots that have to be removed to facilitate the works. In the event that a tree subsequently fails and dies it will have to be replaced. It is suggested that a standard planning condition requiring one for one like replacement of any trees that die within five years from completement of development works would be the best way to ensure this.

5.0 RECOMMENDED TREE WORKS

No	Species	Tree Works Recommended
1	Common Beech <i>Fagus sylvatica</i>	No works required at this time
2	Norway Maple <i>Acer platanoides</i>	Advise prune to restore the crown balance.
3	Norway Maple <i>Acer platanoides</i>	Advise prune to restore the crown balance.
4	Common Lime <i>Tilia europaea</i>	No works required at this time
5	Norway Maple <i>Acer platanoides</i>	- Fell to ground level in a controlled manner. - Grub out the stump and primary root runs.
6	Lombardy Poplar <i>Populus nigra 'Italica'</i>	Advise check for internal decay for safety reasons.
7	Box Elder <i>Acer negundo</i>	No works required at this time
8	Norway Maple <i>Acer platanoides</i>	- Fell to ground level in a controlled manner. - Grub out the stump and primary root runs.
9	Norway Maple <i>Acer platanoides</i>	Prune to clear the route of the cables + check GPO box for any damage.
10	Norway Maple <i>Acer platanoides</i>	Remove all deadwood and dieback for safety reasons.
11	Cypress Oak <i>Quercus robur 'Fastigiata'</i>	No works required at this time
12	Red Oak <i>Quercus rubra</i>	No works required at this time

13	Sycamore <i>Acer pseudoplatanus</i>	No works required at this time
14	Sycamore <i>Acer pseudoplatanus</i>	No works required at this time
15	Silver Maple <i>Acer saccharinum</i>	Remove all deadwood for safety reasons.

6.0 METHOD STATEMENT

Generic Measures

- 6.1 Erect the protective fencing; wooden hoarding; boxed trunk protection and also lay ground protection all as specified and shown on the in [appendix BH3](#) prior to any work being started on site. 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 [**Construction Exclusion Zone**]:-

- **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/toilet blocks and any mixing areas are to be located outside of and well clear of retained trees and positioned over impervious surfaces or over special catchment areas such that any leakage will be captured and cannot leak into the soil causing contamination.

6.5 The details of the proposed utility service links have not been made available to me at this time but it should be possible to link in to existing or lay new services without impinging on the RPA's of retained trees. In the unlikely event that some incursion is necessary then a separate Mini-Method Statement can be provided to satisfy a Planning Condition.

Site Specific Measures

6.6 Trees 1; 2; 3; 4; 9; 10; 12; 13 & 14

The RPZ's of all of these trees marginally overlap localised sections of the proposed new layout of road and footpath links as well as pedestrian crossing points - thus mitigation measures will need to be applied to ensure their safe and healthy retention beyond the development phase :-

- Where there is existing hard surfacing, machinery can operate over it but the machines may not operate over open ground unless adequate ground protection measures are first put in place in accordance with BS5837:2012 Section 6.2.3.3 [see extract at appendix BH3].
- Machinery may only be used to lever out or break up hard surfacing detail but once bare earth is exposed ALL machine work must cease and ONLY 'Hand Digging' with forks and pickaxes will be permitted. At this stage an Arboricultural Expert must be in attendance to monitor and supervise works where tree roots are likely to be present and are at risk of damage.
- This work is to be undertaken with extreme care such that any tree roots which are present may be respected and teased out and exposed rather than being scuffed; abraded or ripped or torn back towards the tree [as would be the case if spades were to be used]. These exposed roots are to be left intact at this juncture.
- In accordance with BS5837 recommendations the monitoring Arboricultural Expert will establish a photographic record of each dig where roots are found, cataloguing the works that have been carried out for use in a report to be submitted to the local authority.
- The Arboricultural Expert will then cut roots as necessary with clean bypass secateurs to the minimum depth possible that will allow a sub base and wearing course layer to be laid along with any edging material.

- If roots are exposed a layer of sharp washed sand should be laid over them to protect them from desiccation and frost damage.
- Roots are not under any circumstances to be left exposed overnight – sand and hessian are the basic coverings that must be applied.
- **IF** the Arboricultural Expert assesses that in a specific case the removal of roots would be likely to cause structural instability and failure or be likely to result in serious and significant dieback and decline in the short term then a decision may have to be taken to remove the tree in question and commit to a replacement planting on completion of the highways works.

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.

- 7.1 A Pre-commencement site meeting is to take place between the development teams arboricultural consultant and the site manager and client representative where the protective fencing will be inspected to verify that it is ‘Fit For Purpose’ as shown on the **Tree Protection Plan**.
- 7.2 Lines of communication will be established with the Site Manager and a contact sheet prepared so that in the event that an incident occurs involving the retained trees that requires urgent advice and guidance from the project Arboricultural Expert this can be easily organised.
- 7.3 The details of the PCSM works will be photographed by the Arboricultural Expert and the following reporting procedure will be adopted. This is an example of the format for the **Site Monitoring Schedule** that would be prepared. :-

Schedule Of Site Monitoring & Supervision for – Langstone Highways works, Langstone, Havant

- In accordance with the Arboricultural Method Statement Report - 1401.bjh.Feb25 & Tree Protection Plan

Date of Inspection	Item	In Attendance	Notes/Observations From Inspection	Details Of Any Follow Up Action Required
tba	Pre-Commencement Meeting	Project Arb Consultant & Site Construction Manager	• A joint site inspection was conducted and agreement reached that the protection measures are in place and that everyone understands their responsibilities.....	•
tba	Further Site Monitoring Visits as required. e.g Hand Digging works	Project Arb Consultant & Site Construction Manager [invite Council Tree Officer to attend]	•	•

8.0 CONCLUSIONS

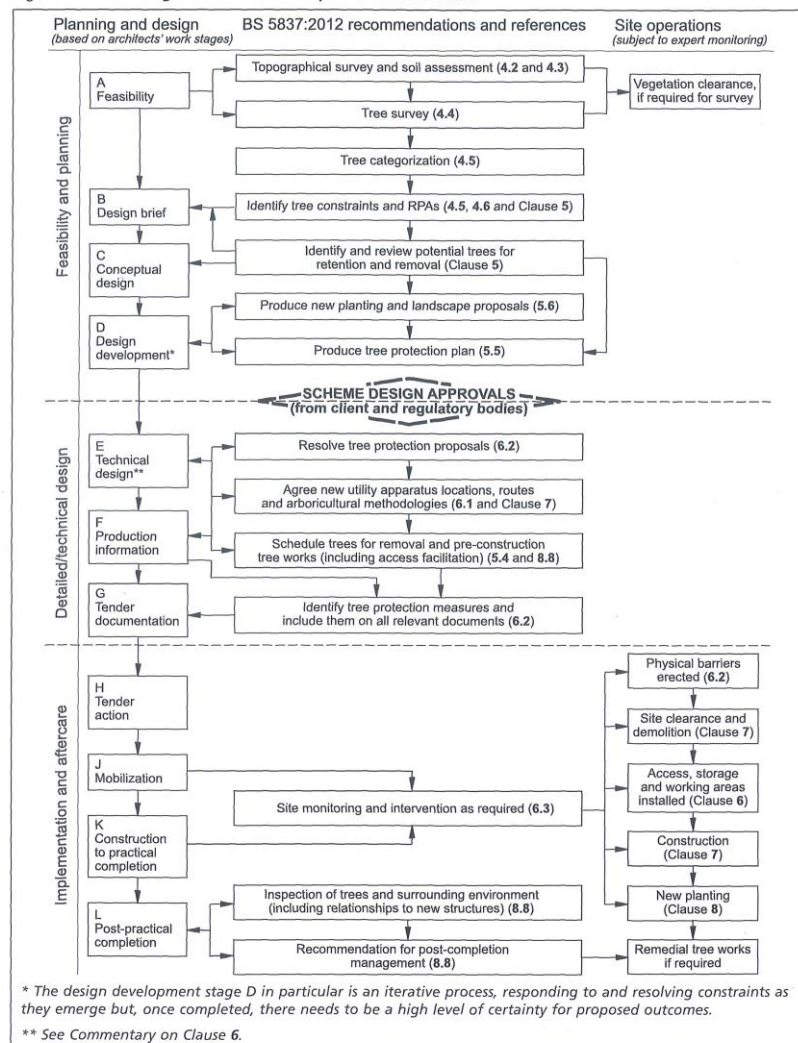
- This development cannot be accomplished without the direct loss of two trees (**T5 Norway Maple** [B] and **T8 Norway Maple** [U]) that will be under the footprint of proposed highways works. One of these trees is of moderate grade and the other is of fell grade. It is suggested that both trees are replaced at appropriate locations nearby with trees of a size and species to be agreed with Havant Borough Council and Hampshire County Council.
- For the remaining surveyed trees appropriate mitigation measures have been specified [at Section 6.6 above] in the hope that the impact on tree roots can be kept to a minimum.
- My clients appreciate that some trees may not respond favourably to the works and root loss and may over time decline and fail – thus they accept and are prepared to commit to a standard five year replacement planting condition being applied. This would ensure that replacement trees are planted for any failures and thus ensure continuity in the landscape.



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

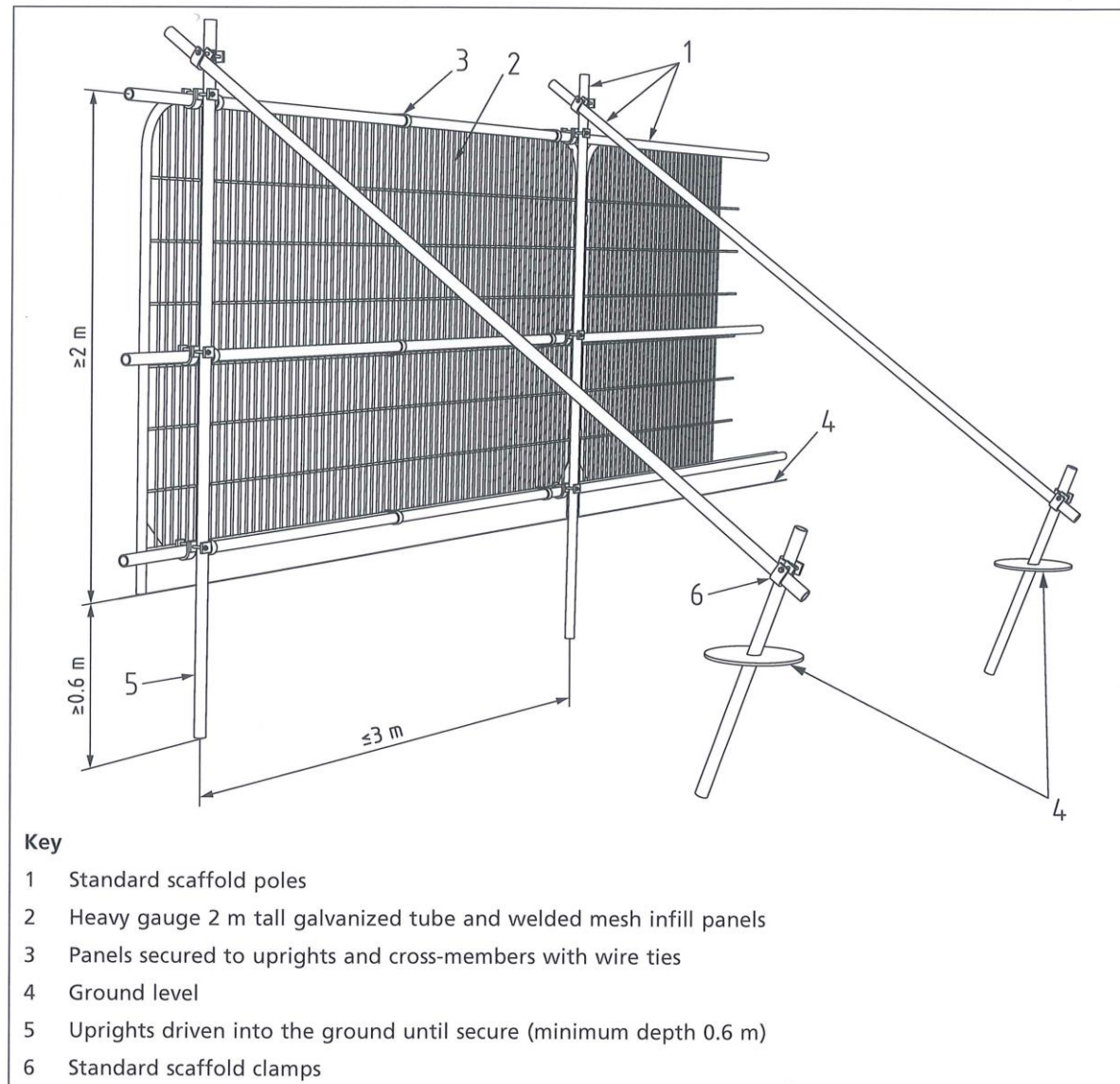
Tree Survey & Protection Plan



BH 3

BS5837:2012 – Figure 2
BS5837:2012 Section 6.2.3.3
Boxed Hoarding Drawing

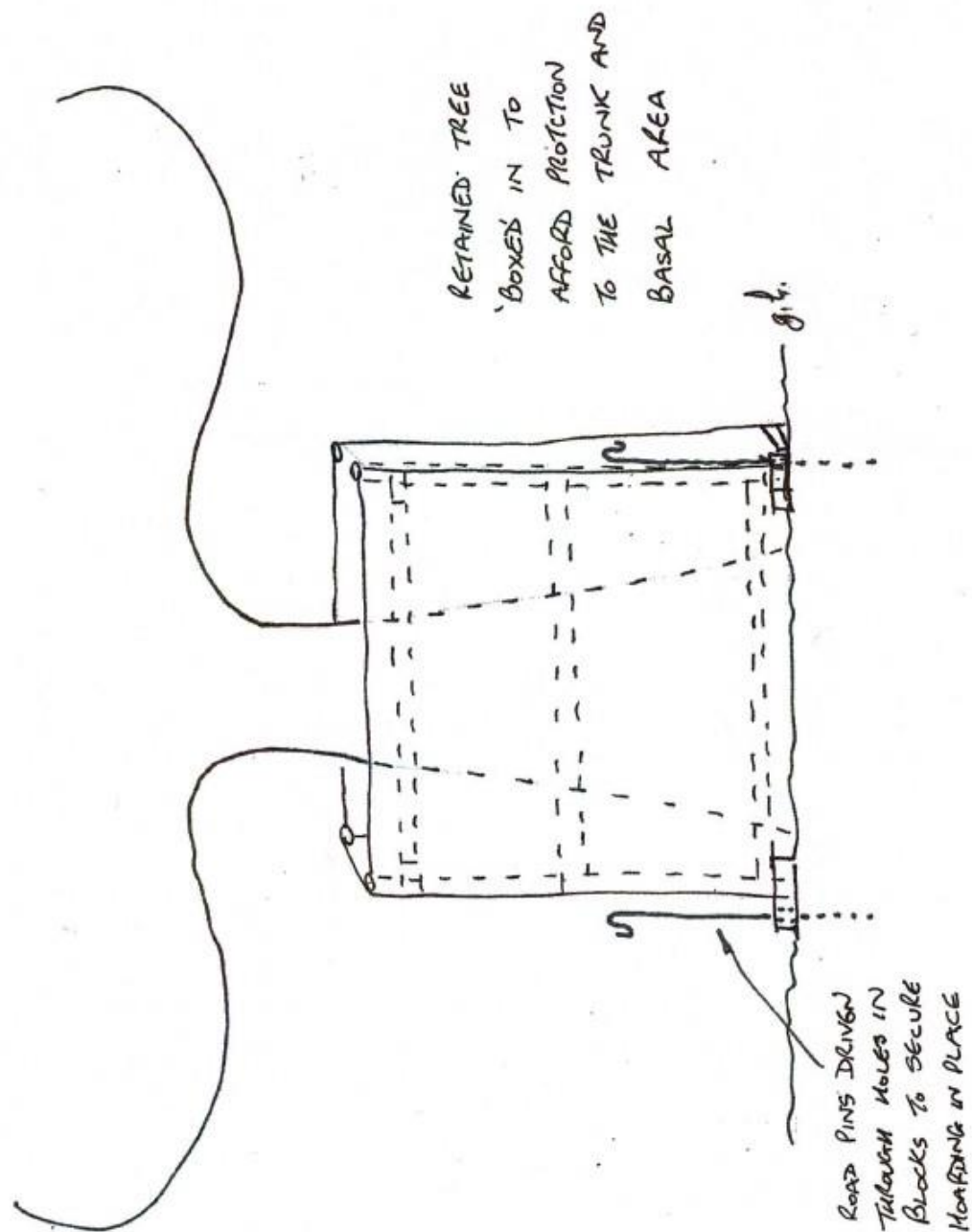
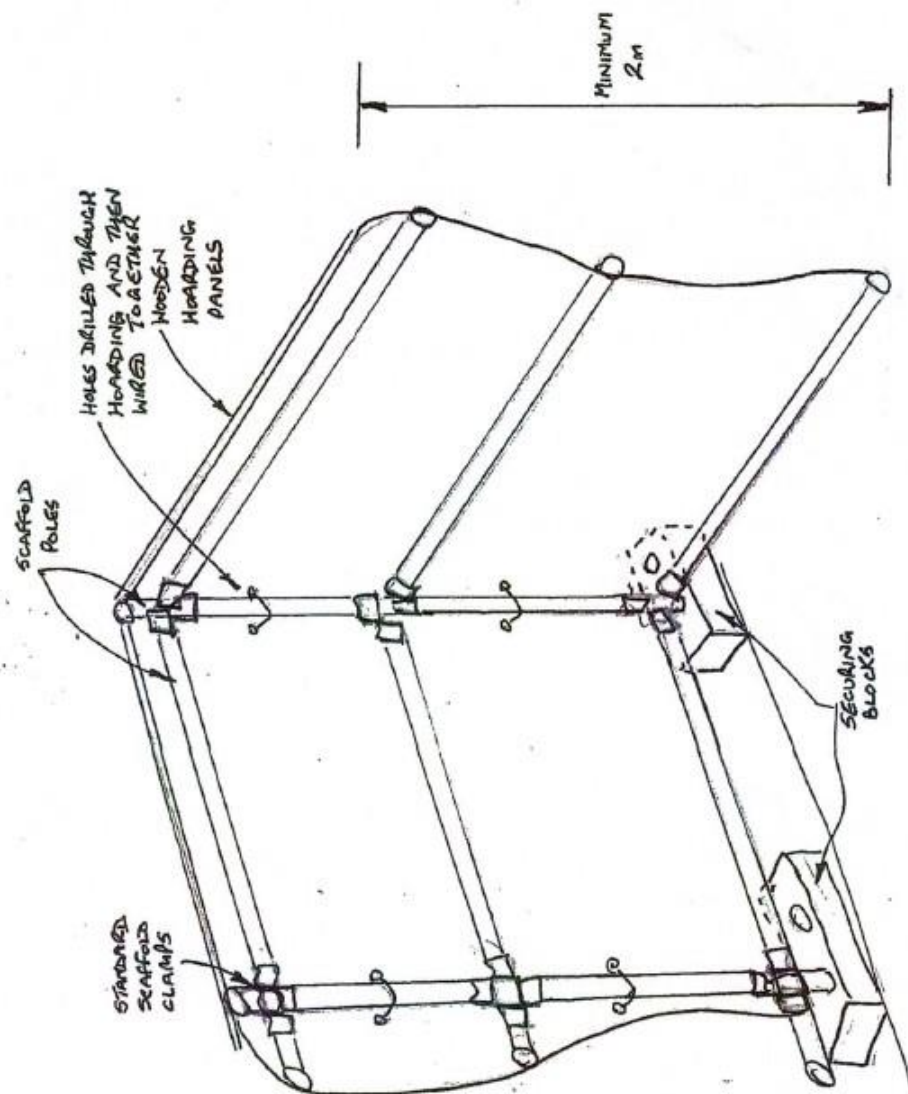
Figure 2 Default specification for protective barrier



BS5837:2012 – Section 6.2.3.3 - New temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil.

Note The ground protection might comprise one of the following:

- a) for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100mm depth of woodchip), laid onto a geotextile membrane;*
- b) for pedestrian –operated plant up to a gross weight of 2t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150mm depth of woodchip), laid onto a geotextile membrane;*
- c) for wheeled or tracked construction traffic exceeding 2t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.*





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 : – **10 Southleigh Grove, Hayling Island, Hampshire PO11 0SH**
- I hold the following arboricultural qualification – **National Diploma in Arboriculture (Royal Forestry Society – 1976)**
- I have **fifty-five (55)** 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 Surgeons and twelve years with CBA Trees as Managing Director & Senior 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.

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