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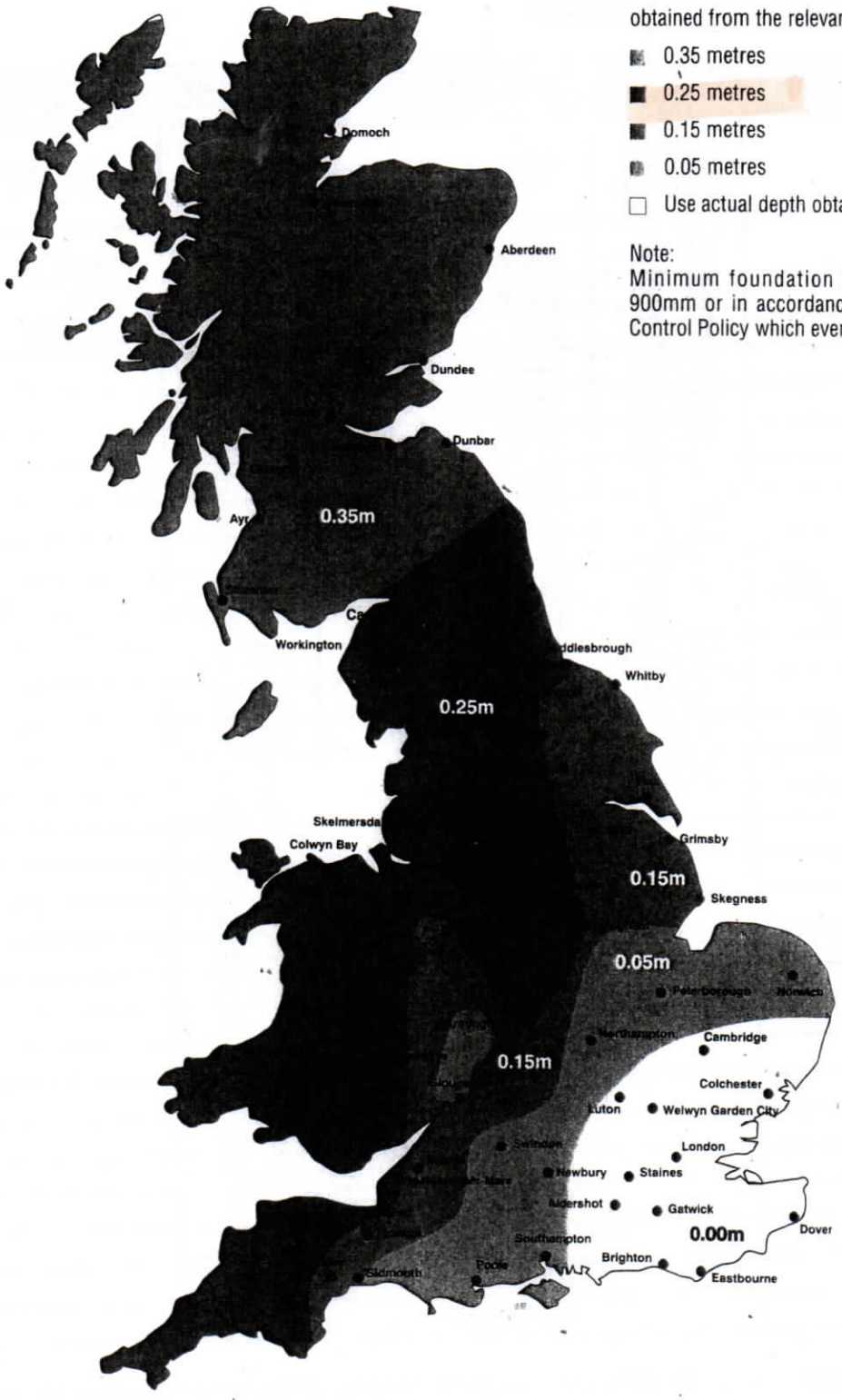
BUILDERS' GUIDANCE NOTES

BGN 3A

Foundations - Proximity of Trees in Clay Soils



Figures indicated the reduction in metres which can be applied to the foundation depths obtained from the relevant table 2.

- 0.35 metres
- 0.25 metres
- 0.15 metres
- 0.05 metres
- ☐ Use actual depth obtained from table 2

Note:
Minimum foundation depth will be either 900mm or in accordance with Local Building Control Policy which ever is the greater.

Figure 6 Climatic Factors - Foundation Reduction Values

BUILDERS' GUIDANCE NOTES

BGN 3A

Foundations - Proximity of Trees in Clay Soils

Mature heights of trees and moisture demand

BROAD LEAVED TREES

HIGH WATER DEMAND		MODERATE WATER DEMAND		LOW WATER DEMAND	
TREE TYPE	MATURE HEIGHT (M)	TREE TYPE	MATURE HEIGHT (M)	TREE TYPE	MATURE HEIGHT (M)
Elm English	24 - 30	Alder	18 - 22	Beech	20-28
Elm Wheatly	22 - 30	Apple	8 - 10	Birch	15-25
Elm Wych	20 - 30	Ash	22 - 30	Magnolia	8-12
Eucalyptus	17 - 25	Bay Laurel	10 -14		
Oak English	20 - 25	Blackthorn	8 - 15		
Oak Holm	18 - 25	Cherry Domestic	14 - 16		
Oak Red	24 - 26	Cherry Japanese	10 - 15		
Oak Turkey	24 - 30	Cherry Laurel	8 - 15		
Poplar Aspen	20 - 25	Cherry Wild	16 - 25		
Poplar Hybrid black	27 - 30	False Acacia	18 - 25		
Poplar Lombardy	25 - 30	Hawthorn	9 - 14		
Poplar White	18 - 20	Hazel	10 - 12		
Willow Crack	23 - 25	Hornbeam	16 - 20		
Willow Weeping	16 - 20	Horse Chestnut	20 - 26		
Willow White	22 -24	Judas Tree	7 - 10		
		Laburnum	10 -12		
		Laurel	12 - 14		
		Lime	22 - 30		
		Maple Japanese	8 - 12		
		Maple Norway	20 - 26		
		Mountain Ash	12 - 16		
		Mulberry	12 - 14		
		Pear	10 - 12		
		Plane	25 - 30		
		Plum	11 - 14		
		Sweet Chestnut	18 - 28		
		Sycamore	20 - 28		
		Tree of Heaven	18 - 25		
		Walnut	18 - 24		
		Whitebeam	12 - 16		

Notes: In the majority of urban area developments the lower of the two mature heights specified can be adopted in determining the recommended depth of foundation required. (H. within the D/H ratio, refer to tables 1 and 2).

BUILDERS' GUIDANCE NOTES

Foundations - Proximity of Trees in Clay Soils

BGN 3A

Table 1 Calculation of D/H Ratio

Distance (D) away from foundations (metres) / Mature Height (H) of Tree (metres)	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36
30	0.07	0.13	0.20	0.27	0.33	0.40	0.47	0.53	0.60	0.67	0.73	0.80	0.87	0.93	1.00	1.07	1.13	1.20
29	0.07	0.14	0.21	0.28	0.34	0.41	0.48	0.55	0.62	0.69	0.76	0.83	0.90	0.97	1.03	1.10	1.17	1.24
28	0.07	0.14	0.21	0.29	0.36	0.43	0.50	0.57	0.64	0.71	0.79	0.86	0.93	1.00	1.07	1.14	1.21	1.29
27	0.07	0.15	0.22	0.30	0.37	0.44	0.52	0.59	0.67	0.74	0.81	0.89	0.96	1.04	1.11	1.19	1.26	1.33
26	0.08	0.15	0.23	0.31	0.38	0.46	0.54	0.62	0.69	0.77	0.85	0.92	1.00	1.08	1.15	1.23	1.31	1.38
25	0.08	0.16	0.24	0.32	0.40	0.48	0.56	0.64	0.72	0.80	0.88	0.96	1.04	1.12	1.20	1.28	1.36	1.44
24	0.08	0.17	0.25	0.33	0.42	0.50	0.58	0.67	0.75	0.83	0.92	1.00	1.08	1.17	1.25	1.33	1.42	1.50
23	0.09	0.17	0.26	0.35	0.43	0.52	0.61	0.70	0.78	0.87	0.96	1.04	1.13	1.22	1.30	1.39	1.48	1.57
22	0.09	0.18	0.27	0.36	0.45	0.55	0.64	0.73	0.82	0.91	1.00	1.09	1.18	1.27	1.36	1.45	1.55	1.64
21	0.10	0.19	0.29	0.38	0.48	0.57	0.67	0.76	0.86	0.95	1.05	1.14	1.24	1.33	1.43	1.52	1.62	1.71
20	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80
19	0.11	0.21	0.32	0.42	0.53	0.63	0.74	0.84	0.95	1.05	1.16	1.26	1.37	1.47	1.58	1.68	1.79	1.89
18	0.11	0.22	0.33	0.44	0.56	0.67	0.78	0.89	1.00	1.11	1.22	1.33	1.44	1.56	1.67	1.78	1.89	2.00
17	0.12	0.24	0.35	0.47	0.59	0.71	0.82	0.94	1.06	1.18	1.29	1.41	1.53	1.65	1.76	1.88	2.00	
16	0.13	0.25	0.38	0.50	0.63	0.75	0.88	1.00	1.13	1.25	1.38	1.50	1.63	1.75	1.88	2.00		
15	0.13	0.27	0.40	0.53	0.67	0.80	0.93	1.07	1.20	1.33	1.47	1.60	1.73	1.87	2.00			
14	0.14	0.29	0.43	0.57	0.71	0.86	1.00	1.14	1.29	1.43	1.57	1.71	1.86	2.00				
13	0.15	0.31	0.46	0.62	0.77	0.92	1.08	1.23	1.38	1.54	1.69	1.85	2.00					
12	0.17	0.33	0.50	0.67	0.83	1.00	1.17	1.33	1.50	1.67	1.83	2.00						
11	0.18	0.36	0.55	0.73	0.91	1.09	1.27	1.45	1.64	1.82	2.00							
10	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60	1.80	2.00								
9	0.22	0.44	0.67	0.89	1.11	1.33	1.56	1.78	2.00									
8	0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00										
7	0.29	0.57	0.86	1.14	1.43	1.71	2.00											
6	0.33	0.67	1.00	1.33	1.67	2.00												
5	0.40	0.80	1.20	1.60	2.00													

Table 1 Calculation of D/H Ratio

FOUNDATION DEPTHS

TREES WITH HIGH MOISTURE DEMAND

SHRINKAGE POTENTIAL OF CLAY	P.I. %	TREE TYPE	D/H	DISTANCE FROM TREE / HEIGHT OF TREE (Table 1)																						
				<0.1	0.10	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	1.00	1.05	1.10	1.15	>1.20
HIGH	>40	BROADLEAF		NR	3.00	3.00	3.00	3.00	2.90	2.75	2.65	2.50	2.40	2.30	2.15	2.05	1.95	1.90	1.80	1.70	1.55	1.40	1.30	1.20	1.05	0.90
		CONIFEROUS		NR	2.80	2.80	2.50	2.25	2.00	1.80	1.60	1.35	1.15	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
MEDIUM	20-40	BROADLEAF		NR	2.60	2.60	2.60	2.60	2.45	2.30	2.15	2.00	1.95	1.85	1.80	1.70	1.65	1.55	1.50	1.40	1.30	1.20	1.15	1.10	1.00	0.90
		CONIFEROUS		NR	2.40	2.40	2.20	2.00	1.80	1.60	1.45	1.30	1.10	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
LOW	<20	BROADLEAF		NR	2.30	2.30	2.30	2.30	2.05	1.90	1.65	1.50	1.45	1.40	1.38	1.35	1.30	1.25	1.20	1.15	1.10	1.05	1.00	0.95	0.90	0.90
		CONIFEROUS		NR	2.00	2.00	1.85	1.70	1.60	1.45	1.35	1.20	1.05	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
				FOUNDATION DEPTH (m) BELOW GL WHERE TREES ARE PRESENT (See Note 1)																						

TABLE 2A

1·3m − 0·25m
= 1·050 m depth.

FOUNDATION DEPTHS

TREES WITH MODERATE MOISTURE DEMAND

SHRINKAGE POTENTIAL OF CLAY	P.I. %	TREE TYPE	D/H	DISTANCE FROM TREE / HEIGHT OF TREE (Table 1)																						
				<0.1	0.10	0.20	0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	1.00	1.05	1.10	1.15	>1.20
HIGH	>40	BROADLEAF		NR	2.00	2.00	2.00	2.00	1.85	1.70	1.55	1.45	1.35	1.20	1.05	0.90											
		CONIFEROUS		NR	1.75	1.75	1.45	1.20	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90											
MEDIUM	20-40	BROADLEAF		NR	1.60	1.60	1.60	1.60	1.55	1.45	1.40	1.30	1.20	1.10	1.00	0.90											
		CONIFEROUS		NR	1.45	1.45	1.25	1.10	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90											
LOW	<20	BROADLEAF		NR	1.30	1.30	1.30	1.30	1.25	1.20	1.15	1.10	1.05	1.00	0.95	0.90											
		CONIFEROUS		NR	1.20	1.20	1.10	1.00	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90											
				FOUNDATION DEPTH (m) BELOW GL WHERE TREES ARE PRESENT (See Note 1)																						

MINIMUM FOUNDATION DEPTH IS ACCEPTABLE

TABLE 2B