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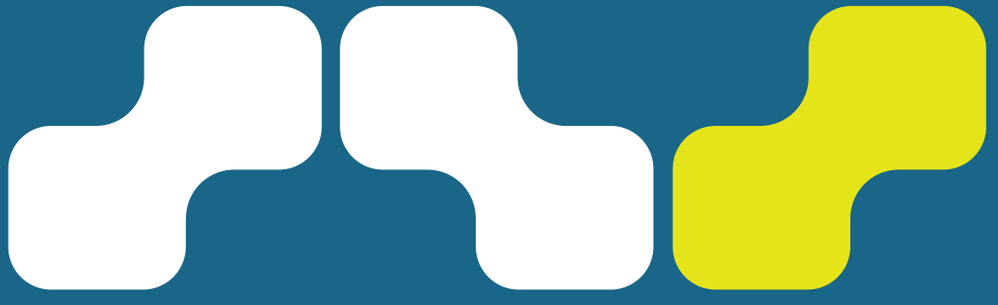

SURVEY & ENGINEERING PROJECTS

● LAND SURVEYING ● ENGINEERING SURVEYING ● BUILDING SURVEYING

● LASER SCANNING ● SITE ENGINEERING ● UTILITY SURVEYING

St Julie's Catholic High School

Woolton

Liverpool

BS5837:2012

Tree Survey and Implications Assessment

November 2014

Report on behalf of Kier Group, by EBS

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Issued and Reviewed by

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Document Revisions:

1.0 Tree Survey and Report 11/2014

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1. Introduction

1.1 Purpose of Report

This report provides an impact analysis of proposed development on trees with guidance on appropriate management and protective measures. Its primary purpose is for the planning authority to review the tree information in support of outline planning submission. This report is based on my site observations and the information provided

1.2 Ecological Constraints

The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act 2000, provides statutory protection for the species that inhabit trees.

Tree Survey was conducted in line with regulations set out in BS5837:2012 – Trees in relation to design, demolition and construction.

1.3 Qualifications and Experience

This report is based on my site observations and the information provided, interpreted in the context of my experience. My Qualifications are a BSc (Hons) in Wildlife Conservation and I am a full member of CIEEM. I have over 8 years' experience in Arboriculture both in the private sector and local authority. During that time I have ran EBS working with environmental organisations in the UK and forestry projects in Costa Rica. Other work has included arboricultural assessments during golf course design phases, as well as assessments for private estates and individual landowners.

2. Site Evaluation

2.1 Site Visit

The site was visited 31st October and 24th November 2014. All observations were taken from ground level and confined to what was visible.

2.2 Site Description

The site is approximately 3.5 hectares of land within the boundary of St Julie's Catholic High School, situated in the village of Woolton approximately 6 miles south east of Liverpool. The village was granted conservation area status in 1969 and the development site has tree protection order status.

The site is an irregular parcel of land bordered by Woolton Manor and Woods. Over a number of years the original footprint of the school has been extended and there are many annexes. The majority of the trees are to the front of the school near the main entrance and a section of amenity grassland. An adjoining section of Woolton Woods has been surveyed also to assess potential impact of the development.

2.3 Collection of Data

An inspection of the individual trees around and abutting the site (where possible) and outside the site affected by the site, was carried out. All dominant boundary and adjacent trees were recorded as advocated by BS5837:2012, primarily as guidance for boundary protection.

2.4 Interpretation of Data

The Root Protection Area (RPA) for the individual trees was calculated using the process laid down in section 4.6 of BS5837:2012, the same principle has been used to provide a minimum RPA for the boundaries surrounding the site using the RPA's of the dominant boundary trees as guidance. Section 4.6 of BS5837:2012 is a simplistic methodology for establishing the minimum distance for protective barriers and consideration has been given to the influencing factors set out in section 4.6.3 of BS5837: 2012 in setting the RPA's on this site.

2.5 Root Protection Area

The Root Protection Area (RPA) is the area where ground disturbance must be carefully controlled. In principle, no significant disturbance should occur within the RPA of category A or B trees, and high levels of care are needed during any activities authorised within it if the trees are to be successfully retained. Generally consideration needs to be given to the space needed for the trees to be successfully retained after development had finished.

3. Survey Information

3.1 Trees

There were 82 individual trees and 11 groups identified during the survey. The trees comprise mainly mature trees in good or fair condition and there is evidence of active management including crown reduction works. The majority of the trees were within the footprint of the current school boundary. However, due to planning an adjoining section of Woolton Woods to the north of the school was surveyed in order to assess any impacts from building works. The woods are in the ownership of a third party and these are protected by a TPO.

All trees have been summarised using the BS 5837:2012 category ratings and generic measurements have been taken for all trees. Where appropriate trees scheduled for removal have been indicated in the Tree Survey Schedule (Appendix Table 1). A tree constraints plan can be found in the appendix (Figure 1).

4. Arboricultural Implications Assessment

4.1 Summary of the Impact on Trees

The impact of the proposals on the trees has been assessed by the extent of disturbance in the RPA's.

4.1.1 Removal

The current proposals indicate the removal of 3 trees. Each tree ear-marked for removal have been classified as cat C and are not thought to be of particular ecological value. Full details are shown in the Tree Constraints Plan (Appendix Table 1).

4.1.2 Compensation

For trees that are to be lost to development it is suggested that adequate numbers of trees should be planted in place of those loss. If new trees are to be incorporated then it is recommended native species of local provenance be used.

4.2 Proposals to Mitigate Impact

4.2.1 Protection of Retained Trees and Woodland

The successful retention of trees depends on the quality of the protection and the administrative procedures to ensure that the protective measures remain in place whilst there is an unacceptable risk of damage. An effective means of doing this is through the use of an Arboricultural Method Statement that can be specifically referred to in a planning condition. An Outline Arboricultural Method Statement for this site is set out in Section 5.

4.2.2 Summary of Impact on Local Community

Subject to adequate precautions to protect retained trees as specified in the Outline Arboricultural Method Statement included in this report, only minimal impact on the site would occur.

5. Outline Arboricultural Method Statement

5.1 Introduction

The Arboricultural Impact assessment in section 4 identified the impact on trees and how that might affect the local character. The Arboricultural Method Statement sets out the management and protection details that must be implemented to secure successful tree retention. It is based on the assumption that the minimum general standards for development issues are those set out in BS5837:2012. It also draws on the author's expertise and knowledge in interpreting these standards in relation to the specific circumstances of this site.

Plans provided are for information and guidance and should only be used for dealing with tree issues. The location of all protection measures must be clarified prior to construction and clearly marked as such on the ground.

5.2 Protection Barriers

Protective barriers should be fit for purpose, BS5837:2012 section 6.2.2 sets out the default position, however it also states in 6.2.2.3 that 'where the site circumstances and associated risk do not necessitate the default position, an alternative specification should be prepared and agreed by the local planning authority'.

Fencing the whole site will be very expensive and unreasonable, however there has to be a clear demarcation of the line beyond which disturbance of the RPA's will occur. The erection of suitable protective fencing should be carried out where the site abuts the trees and where the proposal or the working of it comes within 10 m of any RPA. This will provide sufficient protection of the RPA's of the various trees RPA's as these fall within these proposed buffer zones. The precise location of the protective fencing must be agreed with the local authority on site before any development work commences.

5.3 Precautions when working within the RPAs

If suitable protection fencing is carried out, working within the RPA's should not be an issue, however if works are undertaken within the RPA they must be carried out with care and the following general guidance followed (not all may be relevant).

5.3.1 General Excavation

All excavation must be carried out by hand causing the minimum disruption of roots. Exposed roots to be removed should be cut 10-20cm behind the final face of excavation. Retained roots must be protected from direct sunlight, drying out and extreme temperatures by an appropriate covering. Roots greater than 25mm should be retained where possible, roots 25 - 100mm should only be cut in exceptional circumstances. Roots over 100mm should only be cut following guidance from the arboricultural consultant.

5.3.2 Removal of Structures

Structure are any man made structure above or below ground and includes roads, tracks and paths. Roots frequently grow adjacent and below buildings and damage can occur through disturbance. Use of hand tools may be required. Debris should be removed across existing hard standing away from the RPA and if appropriate existing below ground features can be left in place as removal will cause excessive root disturbance.

5.3.3 Installation of New Structures

New structures within RPA's are potentially damaging, these should be designed to have the minimum impact on the RPA, this may include above ground construction using piling. New surfaces such as roads, paths and car parks should be constructed to allow water and gas movement, give load spreading to avoid compaction and be constructed with little or no excavation. Provision of new services should only pass through RPA's as a final resort, if this is the case trenchless installation is the preferred method. These are engineering issue that should be guided by tree expertise.

5.3.4 Soft Landscaping

The layout of the site ensures that re-profiling will be kept outside the RPA's with ground levels maintained at original levels, where there is possibility of re-profiling extending over the RPA; this is likely to be on a very small scale and not exceed any more than 15% of the RPA. Where new planting exists within the RPA's this should be carried out with care and ideally mulch rather than grass should be placed around the base of retained trees to reduce the risk of mowing damage, because of the layout of the site this will be limited but needs to be considered.

5.4 Site Storage, Cement mixing and Washing points

All site storage areas, cement mixing and washing points for equipment and vehicles must be outside the RPA's. Where there is a risk of polluted water run off precautions must be in place to contain any spillages.

5.5 Tree and Shrub Planting (if relevant)

Any proposed Tree and shrub planting on completion should be carried out using the appropriate planting techniques for the size of plant being planted. Appropriate protection measures should be put in place to protect the plants during establishment; consideration should be given to potential threats from domestic stock, wild mammals and mechanical damage. Maintenance of all stock should be carried to ensure successful establishment, this will require replacement of losses and should continue for up to 5 years or until successful establishment is confirmed by the local authority.

5.6 Tree Protection Supervision

Tree protection cannot be reliably implemented without arboricultural input. This input varies depending on the site and resources available. An arboricultural consultant should be instructed to oversee any protective measures and management proposals outlined in this Method Statement.

It is recommended that arboricultural input is taken during the preparation period before work starts to ensure that any detail changes in the application are considered in relation to trees. A pre commencement meeting should take place with both the arboricultural consultant and local council representative in attendance prior to commencement of works to ensure all protection measures are in place. The arboricultural consultant should visit the site during development at an interval agreed at the pre commencement meeting; this should be flexible so as to allow supervision of sensitive works.

5.7 Site Management

It is the developer's responsibility to ensure that the details of any agreed Method Statement and any subsequent amendments are fully understood by all site personal. A copy of the report should be available on site at all times.

Appendix

Table 1: BS5837 Data

TREESURVEYSCHEDULE

Client:	Kier Group	**Site:**	St Julie's High School		
Date of Survey:	31/10/14	**Surveyor:**	B.Gaudie, J.Ashworth	**Tagged:**	No

Tree ID	Common Name	Latin Name	Maturity	Height (m)	Stem Dia. (mm)	Spread				Crown	Category	Life Expectancy (years)	Structural Condition	Phys. Condition	Comment
						N	E	S	W						
1	Pine	*Pinus Spp.*	Semi-Mature	8	250	4	4	4	4	3	B	+20	Fair	Fair	
2	Sycamore	*Acer pseudoplatanus*	Mature	20	800	8	6	7	3	2	B	+20	Fair	Fair	
3	Silver Birch	*Betula pendula*	Semi-Mature	8	220	3	3	3	3	2	C	+20	Fair	Fair	
4	Common Beech	*Fagus sylvatica*	Mature	20	720	5	3	6	3	6	B	+20	Fair	Fair	
5	Sycamore	*Acer pseudoplatanus*	Semi-Mature	8	400	4	3	2	4	2	C	+20	Fair	Fair	
6	Sycamore	*Acer pseudoplatanus*	Mature	20	850	6	6	4	3	2	C	+20	Fair	Fair	
7	Common Beech	*Fagus sylvatica*	Mature	20	700	3	9	6	4	6	B	+20	Fair	Fair	Leans east. Roots may become restricted.
8	Sycamore	*Acer pseudoplatanus*	Mature	15	820	8	10	6	6	2	C	+20	Fair	Fair	
9	Common Beech	*Fagus sylvatica*	Mature	25	1000	8	6	8	10	10	B	+20	Fair	Fair	
10	Sycamore	*Acer pseudoplatanus*	Semi-Mature	15	500	4	4	4	4	3	C	+20	Fair	Fair	
11	Sycamore	*Acer pseudoplatanus*	Semi-Mature	15	520	4	0	4	2	3	C	+20	Fair	Fair	
12	Common Beech	*Fagus sylvatica*	Mature	25	1000	8	6	6	8	15	B	+20	Fair	Fair	
13	Common Beech	*Fagus sylvatica*	Semi-Mature	12	600	3	8	8	3	4	B	+20	Fair	Fair	
14	Holly*	*Ilex Spp.*	Mature	8	1000	3	3	4	4	2	C	+20	Fair	Fair	
15	Holly*	*Ilex Spp.*	Mature	8	1000	3	3	3	7	2	C	+20	Fair	Fair	
16	Horse Chestnut	*Aesculus hippocastanum*	Mature	15	800	2	2	6	6	10	C	+20	Fair	Fair	Restricted. Some deadwood
17	Rowan	*Sorbus acuparia*	Semi-Mature	5	200	2	2	2	2	3	C	+20	Fair	Fair	
18*	Holly	*Ilex Spp.*	Mature	15	1000	4	4	4	4	3	C	+20	Fair	Fair	Leans to east. Crevices may provide suitable bat habitat.

Tree ID	Common Name	Latin Name	Maturity	Height (m)	Stem Dia. (mm)	Spread				Crown	Category	Life Expectancy (years)	Structural Condition	Phys. Condition	Comment
						N	E	S	W						
19	Silver Birch	*Betula pendula*	Semi-Mature	12	220	2	1	2	2	4	C	+20	Fair	Fair	
20	Holly	*Ilex Spp.*	Mature	15	500	4	4	4	4	3	C	+20	Fair	Fair	
21	Holly	*Ilex Spp.*	Semi-Mature	10	300	4	4	4	4	3	C	+20	Fair	Fair	
22	Elder	*Sambucas nigra*	Semi-Mature	6	200	3	3	0	1	2	C	+20	Fair	Fair	
23	Elder	*Sambucas nigra*	Semi-Mature	8	300	3	3	0	1	2	C	+20	Fair	Fair	
24	Common Beech	*Fagus sylvatica*	Semi-Mature	15	550	6	4	6	4	3	C	+20	Fair	Fair	Heavy Ivy Growth
25	Horse Chestnut	*Aesculus hippocastanum*	Semi-Mature	8	320	6	6	4	4	3	C	+20	Fair	Fair	
26	Common Beech	*Fagus sylvatica*	Mature	18	600	6	6	6	6	3	C	+20	Fair	Fair	
27	Horse Chestnut	*Aesculus hippocastanum*	Semi-Mature	8	300	4	4	4	4	3	C	+20	Poor	Poor	
28*	Holly	*Ilex Spp.*	Semi-Mature	7	600	2	4	2	4	3	C	+20	Fair	Fair	
29	Horse Chestnut	*Aesculus hippocastanum*	Semi-Mature	6	300	4	4	4	4	2	C	+20	Fair	Fair	
30	Horse Chestnut	*Aesculus hippocastanum*	Semi-Mature	10	450	6	6	4	4	2	C	+20	Fair	Fair	
31	Sycamore	*Acer pseudoplatanus*	Mature	15	450	8	8	8	8	3	C	+20	Fair	Fair	
32	Willow	*Salix Spp.*	Mature	15	600	4	6	6	6	3	C	+20	Fair	Fair	
33	Sycamore	*Acer pseudoplatanus*	Mature	15	600	8	8	8	8	3	C	+20	Fair	Fair	
34	Apple	*Malus Spp.*	Mature	6	300	2	2	2	2	2	C	+20	Fair	Fair	
35	Ash	*Fraxinus excelsior*	Semi-Mature	8	400	2	2	2	2	2	C	-10	Poor	Poor	Restricted, Low Vigour
36*	Sycamore	*Acer pseudoplatanus*	Semi-Mature	6	600	4	4	2	2	2	C	+20	Fair	Fair	
37	Sycamore	*Acer pseudoplatanus*	Mature	15	500	8	8	6	6	4	C	+20	Fair	Fair	

Tree ID	Common Name	Latin Name	Maturity	Height (m)	Stem Dia. (mm)	Spread				Crown	Category	Life Expectancy (years)	Structural Condition	Phys. Condition	Comment
						N	E	S	W						
38	Common Beech	*Fagus sylvatica*	Mature	18	1000	6	6	8	8	6	B	+20	Fair	Fair	
39	Sycamore	*Acer pseudoplatanus*	Mature	15	600	8	2	4	2	6	B	+20	Fair	Fair	
40	Sycamore	*Acer pseudoplatanus*	Mature	15	600	6	6	6	6	3	C	+20	Poor	Poor	
41	Willow	*Salix Spp.*	Mature	8	350	5	5	5	5	4	B	+20	Fair	Fair	
42	Willow	*Salix Spp.*	Mature	8	600	6	6	6	6	2	B	+20	Fair	Fair	Leans to east.
43			Mature	5	220	4	5	3	1	2	B	+20	Fair	Fair	Slight lean to east.
44			Mature	5	240	3	4	3	3	2	B	+20	Fair	Fair	
45			Mature	5	260	2	4	4	2	3	B	+20	Fair	Fair	
46			Mature	5	280	2	5	4	2	3	B	+20	Fair	Fair	
47	Field Maple	*Acer campestre*	Mature	8	480	3	4	3	3	4	C	+20	Fair	Fair	
48	Field Maple	*Acer campestre*	Mature	6	220	3	2	3	3	4	C	10-20	Poor	Poor	Leans to North, Rot present.
49	Sycamore	*Acer pseudoplatanus*	Mature	20	440	6	7	6	6	4	C	+20	Fair	Fair	
50	Sycamore	*Acer pseudoplatanus*	Mature	30	1200	7	8	8	7	6	A	+20	Fair	Fair	
51	Sycamore	*Acer pseudoplatanus*	Mature	8	260	3	3	4	4	4	C	+20	Fair	Fair	
52	Horse Chestnut	*Aesculus hippocastanum*	Mature	25	1020	8	7	7	7	5	A/B	+20	Fair	Fair	
53	Sycamore	*Acer pseudoplatanus*	Mature	12	400	3	4	5	4	4	C	+20	Fair	Fair	Under present plans this tree will be removed to facilitate the development
54	Sycamore	*Acer pseudoplatanus*	Mature	10	330	4	4	3	4	5	C	+20	Fair	Fair	Under present plans this tree will be removed to facilitate the develo
55	Sycamore	*Acer pseudoplatanus*	Mature	10	340	2	3	3	2	4	C	+20	Fair	Fair	Under present plans this tree will be removed to facilitate the development
56	Cherry	*Prunus Spp.*	Semi-Mature	8	600	2	2	0	2	0	C	5-10	Poor	Poor	Constricted by boundary wall
57	Sycamore	*Acer pseudoplatanus*	Semi-Mature	8	150	2	2	0	2	0	C	+20	Fair	Fair	
58	Common Beech	*Fagus sylvatica*	Mature	30	780	7	7	12	9	8	A	+20	Fair	Fair	
59	Field Maple	*Acer campestre*	Mature	28	700	6	5	5	8	6	A	+20	Fair	Fair	

Tree ID	Common Name	Latin Name	Maturity	Height (m)	Stem Dia. (mm)	Spread				Crown	Category	Life Expectancy (years)	Structural Condition	Phys. Condition	Comment
						N	E	S	W						
60	Sycamore	*Acer pseudoplatanus*	Mature	20	470	2	2	3	2	0	B	+20	Fair	Fair	Heavy with ivy
61	Sycamore	*Acer pseudoplatanus*	Mature	30	800	7	8	2	6	3	B	+20	Fair	Fair	
62	Sycamore	*Acer pseudoplatanus*	Mature	30	750	9	10	6	4	3	B	+20	Fair	Fair	
63	Sycamore	*Acer pseudoplatanus*	Mature	30	700	7	8	12	8	6	B	+20	Fair	Fair	
64	Sycamore	*Acer pseudoplatanus*	Mature	28	490	3	7	6	7	6	B	+20	Fair	Fair	
65	Sycamore	*Acer pseudoplatanus*	Mature	20	330	2	2	3	3	3	C	+20	Fair	Fair	Deadwood in crown
66	Sycamore	*Acer pseudoplatanus*	Mature	20	380	2	2	2	2	2	C	+20	Fair	Fair	Deadwood in crown
67	Sycamore	*Acer pseudoplatanus*	Mature	20	760	7	8	7	7	2	C	+20	Fair	Fair	Deadwood in crown
68	Sycamore	*Acer pseudoplatanus*	Mature	24	890	7	7	8	8	4	C	+20	Fair	Fair	Deadwood in crown
69	Sycamore	*Acer pseudoplatanus*	Mature	15	390	2	2	2	2	4	C	+20	Fair	Fair	Deadwood in crown
70	Sycamore	*Acer pseudoplatanus*	Mature	28	690	3	3	3	3	4	C	+20	Fair	Fair	
71	Sycamore	*Acer pseudoplatanus*	Mature	26	570	3	3	3	3	5	C	+20	Fair	Fair	Trunk beginning to hollow
72	Sycamore	*Acer pseudoplatanus*	Mature	26	800	3	3	3	4	3	C	+20	Fair	Fair	Dense covering of ivy
73	Sycamore	*Acer pseudoplatanus*	Mature	25	740	8	9	11	5	2	B	+20	Fair	Fair	
74	Sycamore	*Acer pseudoplatanus*	Mature	25	710	6	5	8	7	3	B	+20	Fair	Fair	
75	Sycamore	*Acer pseudoplatanus*	Mature	25	700	3	6	9	13	3	B	+20	Fair	Fair	
76	Sycamore	*Acer pseudoplatanus*	Mature	22	600	3	4	4	4	3	C	+20	Fair	Fair	Damage to bark at base of tree
77	Sycamore	*Acer pseudoplatanus*	Mature	22	710	8	5	4	6	5	B	+20	Fair	Fair	
78	Sycamore	*Acer pseudoplatanus*	Mature	24	680	5	8	6	5	4	B	+20	Fair	Fair	
79	Holly	*Ilex Spp.*	Mature	8	300	3	7	3	3	0	C	+20	Fair	Fair	
80	Sycamore	*Acer pseudoplatanus*	Mature	22	850	8	8	9	9	4	C	+20	Fair	Fair	
81	Sycamore	*Acer pseudoplatanus*	Mature	20	700	3	5	8	4	4	C	+20	Fair	Fair	
82	Sycamore	*Acer pseudoplatanus*	Mature	10	340	2	2	3	3	4	C	+20	Fair	Fair	

Tree ID	Common Name	Latin Name	Maturity	Height (m)	Stem Dia. (mm)	Spread				Crown	Category	Life Expectancy (years)	Structural Condition	Phys. Condition	Comment
						N	E	S	W						
A	Line of Conifers x15 Lime x1 Silver Birchx1 C.Beech x1		Mature to Semi-Mature	<15							C	+20	Fair	Fair	Abutting boundary along front section of amenity grassland and within the footprint of Woolton Manor
B	Sycamore x3		Mature	15-18	400-500	6	6	6	6	3	B/C	+20	Fair	Fair	
C	Cherry, Beech, S.Birch & Sycamore		Young												No access trees behind fence adjacent to table tennis courts.
D	Holly, Beech & Sycamore x6		Semi-Mature	8-10	400-500										Outside school boundary adjacent to sports courts
E	S.Birch x2, Holly x1		Semi-Mature	6-8											Outside school boundary adjacent to sports courts
F	Sycamores x3		Mature												In gardens of adjoining properties
G	Sycamore, Holly & Ash		Semi-Mature	8-10											In gardens of adjoining properties
H	Sycamore & Holly		Mature												Part of woodland to rear of the site
I	Lime x1, C.Beech x1		Mature	10-18	400-600										Part of woodland adjacent to car park
J	Sycamores & Beech x10		Semi-Mature to Mature												Part of woodland to the rear of the site
K	Sycamores x 15		Semi-Mature to Mature												Dense section of woodland in the north east corner of adjoining land in Woolton Woods

*Denotes multi stemmed tree

Table 2 RPA Data

Tree No	DBH	RPA Radii	RPA Area	RPA Square
	Metre	Metre	M²	Metre x Metre
1	0.25	3	28.27	5.32
2	0.8	9.6	289.53	17.02
3	0.22	2.64	21.90	4.68
4	0.72	8.64	234.52	15.31
5	0.4	4.8	72.38	8.51
6	0.85	10.2	326.85	18.08
7	0.7	8.4	221.67	14.89
8	0.82	9.84	304.19	17.44
9	1	12	452.39	21.27
10	0.5	6	113.10	10.63
11	0.52	6.24	122.33	11.06
12	1	12	452.39	21.27
13	0.6	7.2	162.86	12.76
14*	1	10	314.16	17.72
15*	1	10	314.16	17.72
16	0.8	9.6	289.53	17.02
17	0.2	2.4	18.10	4.25
18*	1	10	314.16	17.72
19	0.22	2.64	21.90	4.68
20	0.5	6	113.10	10.63
21	0.3	3.6	40.72	6.38
22	0.2	2.4	18.10	4.25
23*	0.3	3	28.27	5.32
24	0.55	6.6	136.85	11.70
25	0.32	3.84	46.32	6.81
26	0.6	7.2	162.86	12.76
27	0.3	3.6	40.72	6.38
28*	0.6	6	113.10	10.63
29	0.3	3.6	40.72	6.38
30	0.45	5.4	91.61	9.57
31*	0.45	4.5	63.62	7.98
32	0.6	7.2	162.86	12.76
33	0.6	7.2	162.86	12.76
34	0.3	3.6	40.72	6.38
35	0.4	4.8	72.38	8.51
36*	0.6	6	113.10	10.63
37	0.5	6	113.10	10.63
38	1	12	452.39	21.27
39	0.6	7.2	162.86	12.76
40	0.6	7.2	162.86	12.76
41	0.35	4.2	55.42	7.44
42	0.6	7.2	162.86	12.76

43	0.22	2.64	21.90	4.68
44	0.24	2.88	26.06	5.10
45	0.26	3.12	30.58	5.53
46	0.28	3.36	35.47	5.96
47	0.48	5.76	104.23	10.21
48	0.22	2.64	21.90	4.68
49	0.44	5.28	87.58	9.36
50	1.2	14.4	651.44	25.52
51	0.26	3.12	30.58	5.53
52	1.02	12.24	470.67	21.69
53	0.4	4.8	72.38	8.51
54	0.33	3.96	49.27	7.02
55	0.34	4.08	52.30	7.23
56	0.6	7.2	162.86	12.76
57	0.15	1.8	10.18	3.19
58	0.78	9.36	275.23	16.59
59	0.7	8.4	221.67	14.89
60	0.47	5.64	99.93	10.00
61	0.8	9.6	289.53	17.02
62	0.75	9	254.47	15.95
63	0.7	8.4	221.67	14.89
64	0.49	5.88	108.62	10.42
65	0.33	3.96	49.27	7.02
66	0.38	4.56	65.33	8.08
67	0.76	9.12	261.30	16.16
68	0.89	10.68	358.34	18.93
69	0.39	4.68	68.81	8.30
70	0.69	8.28	215.38	14.68
71	0.57	6.84	146.98	12.12
72	0.8	9.6	289.53	17.02
73	0.74	8.88	247.73	15.74
74	0.71	8.52	228.05	15.10
75	0.7	8.4	221.67	14.89
76	0.6	7.2	162.86	12.76
77	0.71	8.52	228.05	15.10
78	0.68	8.16	209.18	14.46
79	0.3	3.6	40.72	6.38
80	0.85	10.2	326.85	18.08
81	0.7	8.4	221.67	14.89
82	0.34	4.08	52.30	7.23
A	0.25	3	28.27	5.32
B	0.45	5.4	91.61	9.57
C	0.2	2.4	18.10	4.25
D	0.25	3	28.27	5.32
E	0.2	2.4	18.10	4.25
F	0.25	3	28.27	5.32
G	0.25	3	28.27	5.32
H	0.3	3.6	40.72	6.38

I	0.5	6	113.10	10.63
J	0.9	10.8	366.44	19.14
K	0.5	6	113.10	10.63

*Denotes multi stemmed tree

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