Tree Constraints Table

Tree Management Consulting LLP
21 Burpham Lane
Guildford
Surrey GU4 7LN

Site: Cherry Orchard Way, Rochford
Date: 22-Jul-08
Ref: TMC-08028-RPA

RPA for: A, B & C Category trees.
Stem No: 1 = Single stem 2 = More than one stem
Offset: Distance from the tree with the maximum 20% offset
To tree: Distance from the edge of the RPA to the centre of the trunk
Polygon: For use by TMC only
Units: All distances (circle/square/polygon) in metres

For further explanation see the tree survey schedule

Root Protection Area (RPA)

Tree	Stem		RPA	Circle		Square			Polygon			
No.	Dia	No.	sq.m	Radius	Offset	Sides	To tree	Offset	Side1	Side 2	To tree	Offset
1	53	1	127.1	6.4	5.1	11.3	5.6	4.5	1	127.1	3.0	2.4
4	43	2	58.1	4.3	3.4	7.6	3.8	3.0	1	58.1	3.0	2.4
5	36	2	40.7	3.6	2.9	6.4	3.2	2.6	1	40.7	3.0	2.4
6	30	2	28.3	3.0	2.4	5.3	2.7	2.1	1	28.3	3.0	2.4
7	38	2	45.4	3.8	3.0	6.7	3.4	2.7	1	45.4	3.0	2.4
8	47	2	69.4	4.7	3.8	8.3	4.2	3.3	1	69.4	3.0	2.4
9	36	1	58.6	4.3	3.5	7.7	3.8	3.1	1	58.6	3.0	2.4
10	29	1	38.1	3.5	2.8	6.2	3.1	2.5	1	38.1	3.0	2.4
11	26	1	30.6	3.1	2.5	5.5	2.8	2.2	1	30.6	3.0	2.4
12	23	1	23.9	2.8	2.2	4.9	2.4	2.0	1	23.9	3.0	2.4
13	46	2	66.5	4.6	3.7	8.2	4.1	3.3	1	66.5	3.0	2.4
14	40	2	50.3	4.0	3.2	7.1	3.5	2.8	1	50.3	3.0	2.4
15	23	1	23.9	2.8	2.2	4.9	2.4	2.0	1	23.9	3.0	2.4
17	16	1	11.6	1.9	1.5	3.4	1.7	1.4	1	11.6	3.0	2.4

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Mr L N Baylis
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25 Colbert Avenue
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Our Ref: 08028L1
28 July 2008

Dear Mr Baylis

Tree Condition Survey – Cherry Orchard Way, Rochford

Further to your instructions I surveyed trees at the above site on 22 July 2008. Enclosed is my tree survey schedule and plan which has been colour-coded to indicate the condition of individual trees. The survey was undertaken to the recommendations of British Standard 5837:2005 'Trees in Relation to Construction - Recommendations'

There are no trees in the high category (A – green). The moderate category trees (B - blue) can be retained as individuals or as part of a group. Trees in the low category (C - grey) should not be retained as individual specimens but only as part of a group of, preferably, better quality trees and where they are not a significant constraint on development. All trees in the removal category (R - red) should be removed in any event. Trees in this category will normally be exempt from a Tree Preservation Order.

The root protection area (m^2) (RPA) for individual trees can be calculated using the tree survey data (page 6), and summary of Table 2 and Clause 5 (page 5) of the Standard. This is the minimum area (m^2) that should be left undisturbed around each retained tree. The Standard advises the RPA should be plotted for A, B and C category trees on a tree constraints plan (TCP). The TCP which indicates both the above and below ground constraints can be used as a design tool when preparing the layout. The RPA can be shown either as a circle or square.

The Standard allows some manipulation of the RPA according to the likely tolerance of the tree to root disturbance or damage and other factors (Clause 5.2.4). In the case of individual open grown trees the RPA can be offset by up to 20% in one direction only. The shape of the RPA can also be changed, but not its area, whilst still providing adequate protection for the root system.

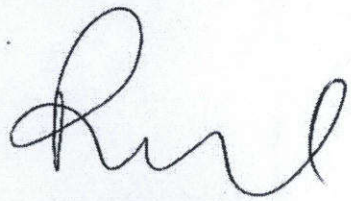
Hard surface areas such as drives, parking spaces, footpaths, bin and cycle stores may be incorporated within the RPA provided they are of no-dig construction and do not cover more than 20% of the RPA with an impermeable surface (Clause 11.8). Buildings may also be sited within the RPA but the foundations must be specifically designed for that purpose (Clause 11.6).

Whilst the TCP provides guidance on the site layout, the Standard recognises that trees are only one of many factors requiring consideration (Clause 6.1). It is therefore accepted that some high (Code A) and moderate (Code B) category trees may need to be removed to achieve a satisfactory layout. The loss of trees can often be mitigated by new planting as part of any landscape proposals.

The RPA should also be applied in the siting of tree protection around any trees to be retained. The Standard advises this should be in the form of barriers and/or ground protection that should be maintained for the period of development (Clause 9). The tree protection barriers should be located at the edge of the RPA or the perimeter of the crown spread, whichever is the greater.

If I can be of further assistance in providing additional advice or documentation please do not hesitate to contact me.

Yours sincerely



R D D Grainger

enc. Tree survey schedule
Tree survey/constraints (TCP) plan
Tree constraints table

cc Peter Lunter – Milieu Architects

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Charter Projects (Developments) Ltd

Tree Survey Schedule

Cherry Orchard Way
Rochford

July 2008

Ref: 08028S

tmc
Arboricultural
Consultants

Instructions

This tree survey has been undertaken to the recommendations of British Standard 5837:2005 'Trees in Relation to Construction – Recommendations'. Unless otherwise instructed the survey includes all significant individual and groups of trees and woodlands. Shrubs, bushes and other vegetation have not been included.

Site: Cherry Orchard Way
Rochford

Client: Charter Projects (Developments) Limited
25 Colbert Avenue
Thorpe Bay
Essex
SS1 3BH

Survey Date: 22 July 2008

Surveyed By: R D D Grainger DipArb(RFS) MICFor FArborA

Our Ref: 08028S

Tree Survey Plan

The tree survey plan indicates the tree number, crown size and shape and has been colour coded to indicate the condition of individual and groups of trees. Where trees are scheduled under a Tree Preservation Order (TPO) the TPO number may be shown on the plan. Additionally, the plan may indicate the root protection area (RPA) for the various trees as recommended in BS5837:2005 (TPC – tree constraints plan)

Where the plan is provided in electronic format (CAD) the following layers are used:

TMC-Tree No	Tree number in survey
TMC-Code A	Category A trees
TMC-Code B	Category B trees
TMC-Code C	Category C trees
TMC-Code R	Category R trees
TMC-TPO	Tree preservation order number
TMC-RPA	Root protection area

Tree Survey Codes

NO Tree number on survey plan

SPECIES Common/English name

HEIGHT Height (metres)
Top Height to top of tree
Crn Mean clearance below crown spread

RAD Crown spread radius (metres)

STEM Trunk diameter (centimetres)
S Single stemmed trees measured at 1.5m above ground level
M Multi stemmed trees measured immediately above the root flare

AGE Age class

Y	Young - Less than one third life expectancy
MI	Middle aged - One to two thirds life expectancy
M	Mature - More than two thirds life expectancy
OM	Over mature - Very limited safe life expectancy
V	Veteran tree

EXP Estimated remaining safe life expectancy (years)
Less than 10
10 – 20
20 – 40
more than 40

CAT Tree Categories and subcategories (1-2-3)

Category A **Green on plan**
Trees of high quality and value:
In such a condition as to be able to make a substantial contribution (a minimum of 40 years)

Trees in this category are the best trees on the site and should be retained where possible.

Subcategories		
1	**2**	**3**
Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups)	Tree, groups or woodlands of significant conservation, historical, commemorative or other values (e.g. veteran trees or wood-pasture)

Category B **Blue on plan**
Trees of moderate quality and value:
In such a condition as to make a significant contribution (a minimum of 20 years)

Trees in this category can be retained as individuals or as groups.

Subcategories		
1	2	3
Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage)	Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features (e.g. trees of moderate quality within an avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality	Trees with clearly identifiable conservation or other cultural benefits

Category C **Grey on plan**
Trees of low quality and value:
Currently in adequate condition to remain until new planting could be established (minimum of 10 years), or young trees with a stem diameter below 150mm.

Trees in this category should not be retained in isolation but only as part of a group of, preferably, better quality (code A or B) trees. They will usually not be retained where they would pose a significant constraint on development.

Subcategories		
1	**2**	**3**
Trees not qualifying in the higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit	Trees with very limited conservation or other cultural benefits
NOTE: Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150mm should be considered for relocation.		

Category R **Red on plan.**
Trees in such a condition that any existing value would be lost within 10 years and which should', in the current context, be removed for reasons of sound arboricultural management.

Trees in this category should be felled in any event.

Criteria
• 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 R category 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 (e.g. Dutch elm disease), or very low quality trees suppressing adjacent trees of better quality.
Note: Habitat reinstatement may be appropriate (e.g. R category trees used as a bat roost: installation of bat box in nearby tree)

COMMENTS General comments on the physiological and structural condition of the tree. In some cases a more detailed inspection may be recommended to determine the tree's safety and suitability for retention. Preliminary management may be recommended. Where trees have been included in a Tree Preservation Order the TPO number may be indicated.

Root Protection Area (RPA)
To avoid damage to the roots or rooting environment of retained trees, the RPA should be plotted around the category A and B trees and, where they are not a significant constraint on development, the category C trees. This is the minimum area (m^2) which should be left undisturbed and protected during development.

Using the tree survey data (STEM) the RPA is calculated as an area equivalent to a circle (m^2):

- for single stemmed trees (S) using a radius 12 times the stem diameter
- for multi-stemmed trees (M) using a radius of 10 times the stem diameter.

The size of the RPA is capped at 707m^2. The shape of the RPA is not mandatory but the area (m^2) cannot be reduced and should take into account the morphology, likely distribution of the trees roots and other influencing factors.

For individual open grown trees, the RPA around the tree may be offset by up to 20% on one side only.

Where instructed, the RPA for appropriate trees is plotted on a tree constraints plan (TCP).

NO	SPECIES	HEIGHT m Top	Crn	RAD m	STEM	cm	AGE	EXP	CAT		COMMENTS / CONDITION
1	Alder	14	1.5	6	S	53	M	10-20	C	1	Leaning, one-sided crown
2	Alder	5	1	2	M	35	M	<10	R	-	Crown die-back, basal damage
3	Willow	8	1.5	6	M	49	M	<10	R	-	Heavily leaning, basal decay
4	Crab apple	6	1.5	4	M	43	M	10-20	C	1	One-sided crown
5	Crab apple	9	2	5	M	36	M	10-20	C	1	One-sided crown
6	Crab apple	9	2	5	M	30	M	10-20	C	1	One-sided crown
7	Rowan	8	2	4	M	38	M	10-20	C	1	
8	Rowan	8	1	4	M	47	M	10-20	C	1	Forked trunk
9	Silver birch	9	0	4	S	36	M	20-40	B	1	
10	Silver birch	10	0	4	S	29	M	20-40	B	1	Heavily leaning
11	Whitebeam	7	1	3	S	23	M	10-20	C	1	Leaning
12	Whitebeam	7	1	3	S	23	M	10-20	C	1	Leaning
13	Manor ash	11	0	6	M	46	M	20-40	B	1	Compression fork, structural defects
14	Norway maple	11	1	4	M	40	MI	20-40	B	1	Forked trunk
15	Oak	8	3	5	S	23	Y	>40	B	1	Two stems
16	Ash	6	1	3.5	M	17	Y	<10	R	-	Distorted trunk, growing through fence onto footway
17	Ash	8	2.5	3	S	16	Y	20-40	C	1	Distorted crown