THE WHITEHOUSE RAYLEIGH

ARBORICULTURAL IMPACT ASSESSMENT

Presented to

CHURCHGATE GROUP
CHURCHGATE HOUSE
RECTORY LANE
BATTLESBRIDGE
ESSEX
SS11 7AR

By

Landscape Planning Limited
9 Phoenix Square
Wyncolls Road
Colchester
CO4 9PE

-August 2006-

The Executive Summary

This report was commissioned by the Churchgate Group in order to undertake a survey of trees and hedges situated within the proposed development site and advise on the implications on existing trees.

This report presents the findings of the tree survey as a plan, tree tables and identifies trees to be retained, removed and replaced. It will show how those trees to be retained shall be protected during construction and by specific working methods.

The impact upon the trees should be considered within the wider context of the overall advantages the development will bring. The residential development has been designed in order to provide a new active built frontage on Whitehouse Chase and open up and frame views of the Listed Building, The White House. New trees will be planted to frame but not obscure these views.

Whilst some trees shall be removed to accommodate the proposed development, the most significant tree within the site, the large Sycamore tree, T2, situated on the south-eastern boundary, shall be retained. This tree makes a contribution to the setting of the Listed Building.

The parking layout to the rear of the properties have been arranged to minimise the impact on T2 Sycamore. The small area of parking which is within the Root Protection Area (RPA) can be successfully accommodated by a cell web/geo web cellular confinement system of surface construction

Whilst the Sycamore trees T7 and T9 are visible from Whitehouse Chase and also seen from Eastwood Road, they are only two of a number of trees within the front boundaries of Whitehouse Chase. The dominant species is Oak and these form an informal and irregular distribution along the road and not part of a formal avenue. Whilst there will be the loss of individual trees, general tree cover will still be retained along the south-western part of Whitehouse Chase.

Trees to be retained will be protected by fencing during the course of the construction as shown on Plan 3 and Appendix 5. There shall be no access into the area of protective fencing apart from the installation of the cellular confinement system.

New trees will be planted within the gardens in order to provide long-term tree cover.

The Brief

The scope of this report is as follows:

- Present the findings of the survey of existing trees and hedges within the proposed development site
- Make an assessment on the impact of the proposed development on existing trees.
- Identify trees to be retained, removed and protected.
- Identify measures for the protection of trees to be retained.
- Show proposals for the replanting of trees.

Terms of Reference

- Land survey
- 'Proposed Site Plan' 4032-105 April 2006
- 'Indicative Street Elevations' 4032-103 April 2006
- 'Planning Statement for proposed development at White House Farm, Eastwood Road/White House Chase, Rayleigh, Essex'.
- 'Planning Statement for proposed retirement homes at land adjoining White House, 154 Eastwood Road, Rayleigh, Essex. Whitehouse Chase Frontage'.
- View parts of Tree Preservation Order 5/1957 at Rochford District Council Offices.

Plans

Plan Base 1	Topographical Survey
Plan Base 2	Tree and Hedge Survey
Plan Base 3	Trees to be Retained, Replaced and Protected.

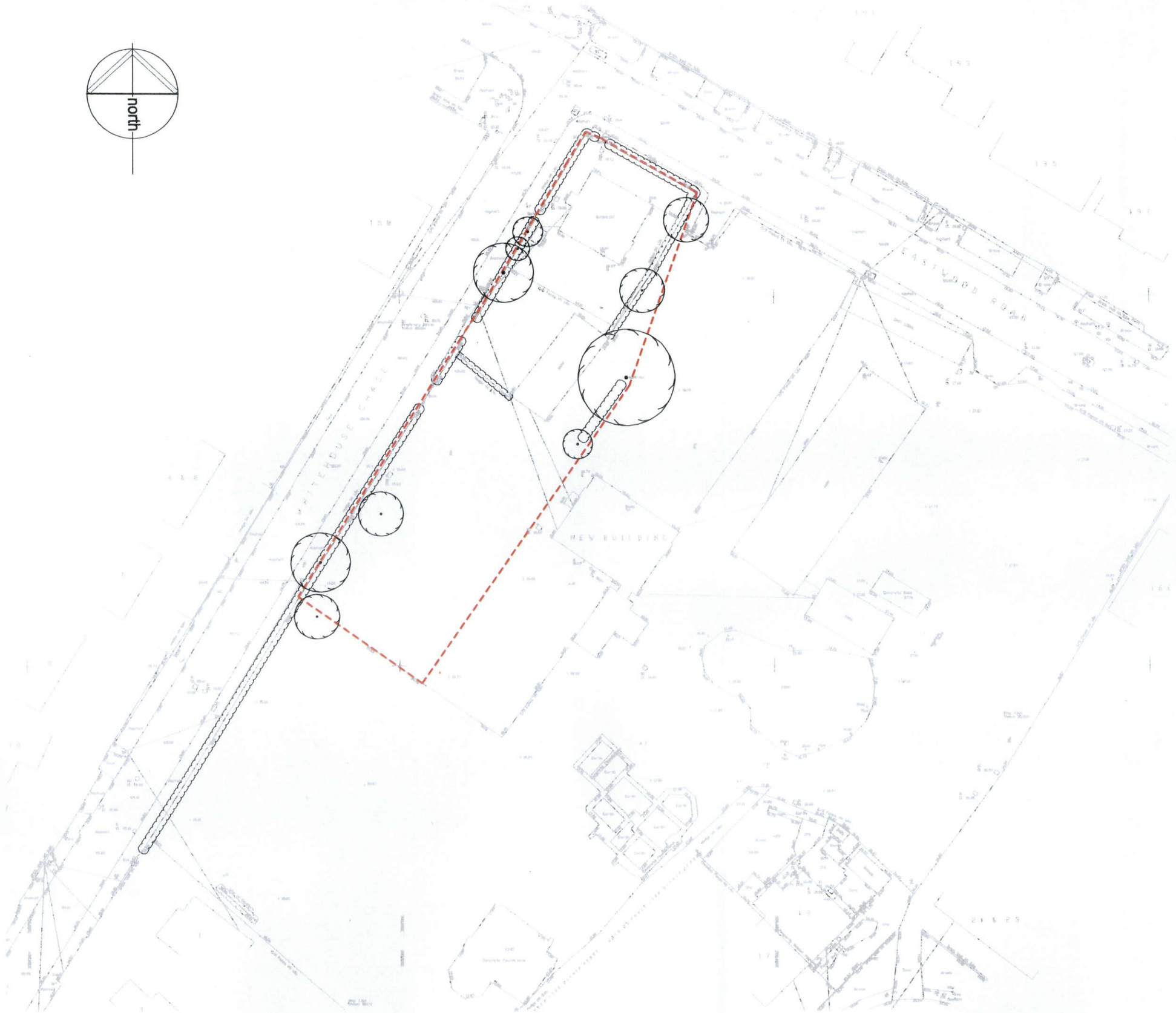
Appendices

Appendix 1	Key to Tree Tables
Appendix 2	Tree Tables
Appendix 3	Tree Work Recommendations
Appendix 4	Programme Constraints
Appendix 5	Tree Protection
Appendix 6	Cellular Confinement

Current Stage in Design

A planning application was submitted but has been withdrawn in order to collect additional information, including that relating to existing trees and the impact of the development on trees.

There is presently a bungalow on site and consent for the conversion of a barn to residential usage.



Notes:
ALL COORDINATES RELATED TO LOCAL GRID LOCATED TO OS NG BY BEST FIT TO DETAIL, EXTRACTED FROM OS DIGITAL DATA.

Legend

Site boundary

No	INFORMATION	By	Date	Chkd

REVISIONS

9 Phoenix Square
Wyncolls Road
Colchester
Essex
CO4 9PE
Tel: 01206 752539

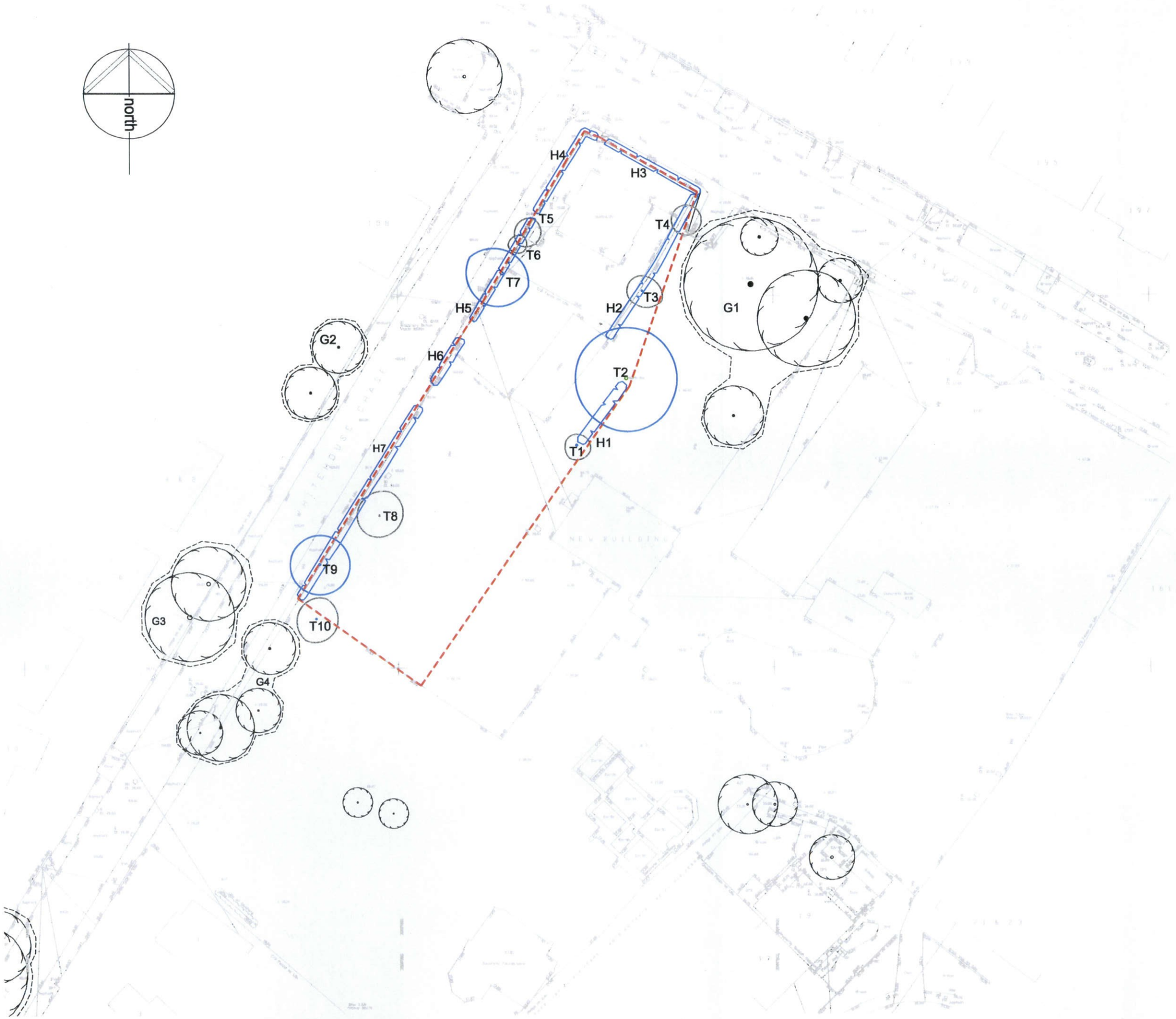
CLIENT:
CHURCHGATE GROUP

LOCATION:
WHITEHOUSE CHASE, RAYLEIGH

DRAWING TITLE:
PLAN BASE 1
TOPOGRAPHIC SURVEY

CAD REF: N:LP South\2006\C7661

SCALE:		DRAWING No:	REV:
1:500 @ A3			
DRAWN BY: DB	DATE: 14/07/2006	C7661/01	A



Notes:
ALL COORDINATES RELATED TO LOCAL GRID LOCATED TO OS NG BY BEST FIT TO DETAIL, EXTRACTED FROM OS DIGITAL DATA.

Legend

- Site boundary
- Existing building
- Existing hedge
- Trees of moderate quality Category B
- Trees of low quality - Category C
- Existing trees outside site boundary

Note: Tree survey adhers to the principals of BS5837:2005 'Trees in relation to Construction - Recommendations'

No	INFORMATION	By	Date	Chkd

REVISIONS

9 Phoenix Square
Wyncolls Road
Colchester
Essex
CO4 9PE
Tel:01206 752539

CLIENT:
CHURCHGATE GROUP

LOCATION:
WHITEHOUSE CHASE, RAYLEIGH

DRAWING TITLE:
PLAN BASE 2
TREE AND HEDGE SURVEY

CAD REF: N:LP South\2006\C 7661

SCALE:	DRAWING No:	REV:
1:500 @ A3	C 7661/02	A

DRAWN BY: DB | DATE: 14/07/2006

north

H4
H3
T5
T4
T6
T7
H5
H2
G1
G2
H6
T2
H7
H1
T1
T8
T9
T10
G3
G4

Notes:
ALL COORDINATES RELATED TO LOCAL GRID LOCATED TO OS NG BY BEST FIT TO DETAIL, EXTRACTED FROM OS DIGITAL DATA.

Legend

- Site boundary
- Trees to be retained
- Trees to be removed
- Offsite trees to be retained
- Replacement tree planting
- Existing hedge to retain
- Existing hedge to remove
- New hedge
- Protective fencing
- Use of cellular confinement system for parking within RPA

No	INFORMATION	By	Date	Chkd

REVISIONS

9 Phoenix Square
Wyncolls Road
Colchester
Essex
CO4 9PE
Tel: 01206 752539

CLIENT:
CHURCHGATE GROUP

LOCATION:
WHITEHOUSE CHASE, RAYLEIGH

DRAWING TITLE:
PLAN BASE 3
TREE RETENTION, REPLACEMENT AND PROTECTION

CAD REF: N:LP South\2006\C 7661

SCALE:		DRAWING No:	REV:
1:500 @ A3		C 7661/03	A
DRAWN BY: DB	DATE: 14/07/2006		

Conclusions

A survey of trees and hedges has been undertaken and data presented on plan and tabular form and categorised in accordance with BS5837:2005 'Trees in relation to construction– Recommendations'.

Trees to be retained, removed and replaced have been identified, these as shown on Plan Base 3

The most significant tree within the site, T2, Sycamore has been retained. This tree makes a positive contribution to the setting of the Listed Building. Measures for the protection of trees during the construction process have been identified and include the construction and maintenance of protective fencing during the demolition and construction phase.

Many of the trees to be removed do not have significant amenity value. Of those to be removed, two are classified as 'young' and provide little amenity value (Hawthorn trees T5 and T6). The Apple tree, T8, has a significant lean to its main stem, a split leader, included union and provides limited amenity value in the longer term. Whilst T3, the Ornamental Apple, is visible from Eastwood Road, it is not an important tree when viewed within the context of the adjacent mature Cedar trees within the grounds of the White House. T10, Norway Maple, is situated in close proximity to T9 and so its long term development would be restricted by this close proximity.

Whilst the Sycamore trees T7 and T9 are visible from Whitehouse Chase and also seen from Eastwood Road, they are only two of a number of trees within the front boundaries of Whitehouse Chase. The dominant species is Oak and are situated in irregular groupings along the road and are not part of a formal avenue. Whilst there will be the loss of individual trees, general tree cover will still be retained along the south-western part of Whitehouse Chase.

An Area Tree Preservation Order cover trees growing within the area at the time that the Order is served. In 1957 only the large Sycamore tree, T2, would definitely have been present at the time of serving. Sycamore trees, T7 and T9 may have been present. None of the other trees would have been present.

Replacement tree planting is shown to demonstrate how long term tree cover will be brought about.

New trees will be planted within the gardens in order to provide long term tree cover. This will include fastigate Oak trees within the front gardens of the properties. This will continue the distribution of Oak trees on Whitehouse Chase, but in a fastigate form which will be more suited to gardens of the proposed residential properties.

To the rear of the properties there is space for the establishment of a new English Oak tree and also ornamental species. New tree planting is also proposed in the rear garden of The White House, situated in order to maintain views towards the Listed Building.

Recommendations

Subject to consent from the Local Planning Authority, carry out the following:

- Carry out due diligence, checks for nesting birds and bats prior to tree works in accordance with the relevant Wildlife and Countryside Legislation
- Undertake tree works in accordance with the Tree Works Recommendations.
- Erect protective fencing in accordance with Plan Base 3 and specification in Appendix 5
- Do not breach the tree protective fencing during the course of the development or contaminate the RPA
- Place services outside the RPA
- Install cellular confinement system in areas where parking areas are within the RPA of T2 Sycamore
- Site supervision by a competent Arboriculturist may be required in accordance with recommendations in the AMS.

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APPENDICES

Appendix 1 - Key to Tree Tables

Age Range	**Y**	Trees from seedling, up to Advanced Nursery Stock size (14/16cm girth)
	SM	More than 10 years post-establishments but capable of being moved using a large tree spade (up to 22/24cm diameter).
	EM	Early indictors of maturity in bark tissue, reproductive tissue, leaf and crown morphology may be present. (Notably, excurrent shoot growth, not readily transplantable and still likely to increase significantly in size).
	M	Strong indicators of maturity in bark tissue, reproductive tissue, leaf and crown morphology will be present. Shoot growth decurrent. (Middle aged phase of growth when the tree has effectively reached up to 90% of its ultimate size for the species & location).
	FM	Bark tissue, reproductive tissue, leaf and crown morphology will all exhibit mature characteristics. Strongly decurrent shoot growth and reduced shoot extension. No specific signs of senescence. (A tree that has now achieved over 90% of its ultimate life for the species and location).
	OM	Trees in senescence. NPO in decline from disease, decay, root death, structural or stability problems resulting primarily from old age. (Senescence is an ageing related category, i.e. a young tree subject to disease and decay because of, for example, an impact injury would not be senescent). Characteristically, senescent trees are likely to be reducing in mass due to the shedding of branches.

Condition	**A**	A tree that is, by form, function and physiology, in optimum condition for the species (this may vary according to previous or existing management regimes, e.g. pollarding). No obvious defects.
	B	A tree with minor defects of no significant biological or hazard significance, which can be managed by application of proper arboricultural practice.
	C	A tree with significant defects that require management intervention to ensure tree health, viability or for safety reasons.
	D	A tree with significant defects that cannot be adequately addressed by management intervention to enable its appropriate and/or safe retention.
	H	An imminently hazardous tree that required management intervention as soon as contractually possible to make the tree safe.

The classifications are broadly in line with the recommendations found within British Standard 5837:2005 'Trees in relation to construction - recommendations'. However, explanations for the terms have been changed to reflect the approach of this company to the practical aspects of categorising trees in the field.

Appendix 2 - Tree Tables

Tree No.	Common Name	Age Range	Condition	Height (m)	Crown Spread (m) NW	SE	NE	SW	Trunk Diameter at 1.5m (mm)	BS 5837 Category	Comments	RPA (AREA m2)
Trees												
T1	Purple Leaved Plum	EM	B	7	1.5	2	1.5	2	200	C	Barely visible from a public place	18.1
T2	Sycamore	M	B	18	6.5	7.5	6	7	700 basal diameter	B	Split leader at 1.4m gravel surface surrounding base of tree and hedge to west. Tree situated near to listed building and visible from Eastwood and Whitehouse Chase	153.9
T3	Ornamental Apple	EM	B/C	6	2	3	2	2	250	C	Ivy on stem and branches to 4.5m, browning foliage. Previous crown reduction. Tree glimpsed from Eastwood Rd	28.28
T4	Ornamental Apple	EM	B/C	6	2	2	2	2	240	C	Ivy on stem and branches to 4m. Browning foliage. Crown lifted to 3m. Tree visible from Eastwood Road, but not prominent due to presence of other trees to the southeast	26.06
T5	Hawthorn	Y	B	4.5	1.5	2	2	2	120	C	Young tree within hedge. Visible but not prominent from Whitehouse Chase	6.52
T6	Hawthorn	Y	B	4.5	1.2	1	2	0.5	100	C	Young tree within hedge. Suppressed to the west by T7. Visible but not prominent from Whitehouse Chase	4.52
T7	Sycamore	EM	B	11	4.8	4	3	4.7	500	B	Significant, ivy to stem and branches to 7m. Visible from Whitehouse Chase and glimpsed from Eastwood Road	113.11
T8	Apple	EM	C	6	3	3	3.5	3	320	C	Split leader at 1.2m and included union beneath. Some deadwood, stem leans to east at approximately 25° from vertical. Only upper canopy is glimpsed from Whitehouse Chase.	46.3
T9	Sycamore	EM	B	12	4	4	4	4	600*	B	Stem diameter not accessible. Ivy to 6m. Tree visible as part of a group from Whitehouse Chase and glimpsed in distance from Eastwood Road	162.88
T10	Norway Maple	EM	B	11	2.5	3	3	3.2	200	C	Minor bark damage to the base of northern part of stem. Suppressed by T9. Tree visible as part of a group from Whitehouse Chase	18.1

Note: * indicates diameter was estimated

Appendix 2 - Tree Tables

Tree No.	Common Name	Age Range	Condition	Height (m)	Crown Spread (m) NW	SE	NE	SW	Trunk Diameter at 1.5m (mm)	BS 5837 Category	Comments	RPA (AREA m2)
Hedgerow												
H1	Privet (with Elder	EM	C	2.2								
H2	Privet (with Elder and Maple)	EM	C	2.2								
H3	Privet (with Lilac, Norway Maple and Bramble)	EM	C	1.6							Clipped to the northeast and southwest	
H4	Privet (with Ivy, Elder, Bramble, Blackthorn, Ribes and Norway Maple)	EM	C	1.4							Clipped to the northwest and southeast	
H5	Privet and Hawthorne (with Ivy and Bramble)	EM	C	1.9-2.5							Clipped to the northwest side	
H6	Privet, Hawthorn, Yew and Sycamore	EM	C	2.8							Clipped to the northwest side	
H7	Hawthorn (with Ivy, Bramble, Privet, Sycamore and Elm	EM	C	2.8-3.5							Emerging Elm to 4.5m and clipped to the northwest	
Groups of Trees Offsite												
G1	3 x Cedar, 1 x Pine 1 x Thuja										Group is prominent from Eastwood Road	
G2	2 x Oak										Trees are visible from Whitehouse Chase and Eastwood Road	
G3	1 x Oak 1 x Sycamore										Trees are visible from Whitehouse Chase and glimpsed Eastwood Road	
G4	2 x Oaks										Trees are visible from Whitehouse Chase	
G5	Oaks										Trees are visible from Whitehouse Chase and northeast of group are glimpsed from Eastwood Road	

Appendix 3 - Programme Constraints

Theme	Item	Programme Constraint	Recommendation	Timetable for Resolution
Nesting birds	Nesting birds are protected under the Wildlife and Countryside Act 1981. It is an offence to cause disturbance to nesting birds during the nesting season.	Works to trees, vegetation and structures with nesting birds should be undertaken when birds are not nesting.	Either undertake tree works outside of the nesting season (generally March to Mid August) or carry out nesting bird survey to ascertain the presence/ absence of nesting birds. Do not commence works if nesting birds are present.	If demolition or construction is proposed between March and September, undertake a nesting bird survey prior to commencement.
Bat roosts	Bats are protected under the Wildlife and Countryside Act 1981. It is an offence to cause disturbance to a bat at any time.	No demolition or construction shall be undertaken if a bat roost is present.	Undertake a survey of trees for signs of a bat roosts prior to felling. Should external signs be visible, an echolocation survey shall be required. Licence application will be required is a bat roost is present.	Prior to tree works / demolition.
Protection of trees to be retained	The Local Planning Authority requires details of how retained trees shall be protected to ensure tree protection throughout the development process.	The LPA will seek to approve tree protection and working methods adjacent trees to be retained prior to granting a planning consent.	Erect protective fencing and signage in accordance with the plan and specification within this report. Do not breach the protective fencing, store materials or carry out any excavation within the protected area throughout the course of the development.	Prior to the commencement of demolition and construction and maintain throughout the course of the development.

Appendix 4 - Tree Work Recommendations

Tree number	Tree Name	Tree Works
T1	Purple leaved plum	Fell
T4	Ornamental Apple	Fell
T5	Hawthorn	Fell
T6	Hawthorn	Fell
T7	Sycamore	Fell
T8	Apple	Fell
T9	Sycamore	Fell
T10	Norway Maple	Fell
H1-7	Privet and Hawthorn hedge	Remove

Appendix 5 - Protective Fencing

Figure 1. Design of Heras Type Tree Protection Fence

- Specifications: Fence shall be 2m high x 3m long.
- As Heras type fencing can be easily moved, it must also be staked into the ground and secured, in order to provide semi-permanent protection using 1.8m driven tanalised softwood stakes (or driven scaffold poles) and secured by tying wire (or 'u'bolts')
- The fencing will be further identified by 'Tree Protection' warning signs.

Location: Fencing shall be positioned as shown on the tree protection plan.

Figure 2. 'Tree Protection' Warning Signs

TREE PROTECTION AREA

KEEP OUT !

(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A TREE PRESERVATION ORDER.
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY LEAD TO CRIMINAL PROSECUTION

ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

CONTACT:

TELEPHONE:

Appendix 6 - Cellular Confinement System

CellWeb

Tree Root Protection System

GEOSYNTHETICS

fig. 1

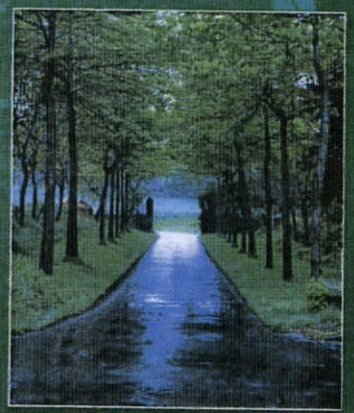


fig. 2

Problems associated with the construction of new developments around mature or any existing trees is well documented. BS5837 (1991) and later APN1 (1996) offer guidelines to those concerned with the protection of trees during the construction process.

The provision of car parking facilities and access roads around trees can lead to problems culminating in the premature loss of the tree itself unless preventative measures are taken to protect the tree roots during and after construction. *(fig. 1)*

Vehicular traffic above tree roots creates compaction of unconfined sub-soils causing oxygen depletion and even a loss of vital nutrients. Creating an impermeable surface above tree roots by installing a compacted sub base for load support also adds to these problems.

The solution is CellWeb, a three dimensional Cellular Confinement System that provides a load transfer blanket significantly reducing vertical loads on unprotected tree roots. *(fig. 2)*

Please contact:

Geosynthetics Limited
Fleming Road,
Harrowbrook Ind. Estate,
Hinckley, LE10 3DU.

Telephone: 01455 617139
Facsimile: 01455 617140 Email: sales@geosyn.co.uk

CellWeb

GEOSYNTHETICS

The CellWeb System uniquely prevents rutting action of sub-soils by confining infill material within the hoop structure of the panel, increasing the infills shear strength. The use of a CellWeb System increases the load capacity of granular infill by up to 50% reducing the overall construction depth required. Perforated cell walls permit through drainage and also provides frictional interlock of the infill again increasing the shear strength of the system.

A non woven geotextile filtration/separation membrane is used beneath the system to prevent migration of materials and also to aid with drainage vertically through the system.

The CellWeb panels are infilled with a clean angular gravel which provides load support and permits air and moisture transfer to the roots ensuring the long term preservation of the tree root structure. *(fig. 5)*

Surfacing materials are at the discretion of the client, however for specific advice please contact our sales office.

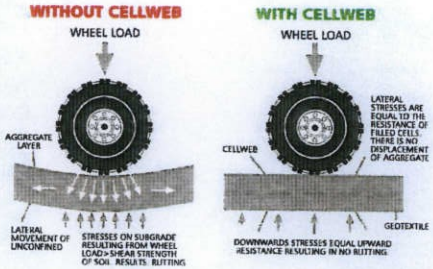
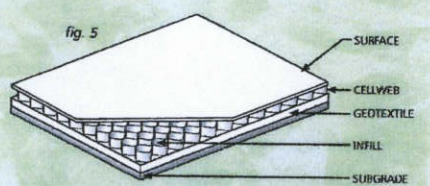


fig. 3 fig. 4

Benefits of using CellWeb

- Reduction in construction depth.
- Prevent compaction of sub-soils.
- Prevent oxygen/nutrient depletion.
- Environmentally friendly option.
- Fast and economic installation.
- Technical support available.

fig. 5



CellWeb is available in four cell depths; 75mm, 100mm, 150mm and 200mm.

The cell depth required is dependant upon specific site conditions. For specification details or project specific design assistance please contact our sales office.

Please contact:

Geosynthetics Limited
Fleming Road,
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