

# **BS5837:2012 Tree survey at XXX**

**Prepared for xxx**

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## 1.0 Summary

- Following an instruction from xxx, I have conducted an arboricultural survey according to BS5837:2012 at xxx for the purposes of construction planning.
- There are no particular conflicts between the proposed building development and the trees surveyed.
- Root protection areas and the above ground parts of the trees can be protected by erection of a mesh panel protection fence erected along the lines shown in the Tree Protection Plan.
- A full Arboricultural Method Statement for tree protection can be provided, if required.
- The surveyed trees would benefit from sympathetic management but no urgent actions were identified.
- Tree work should be carried out by competent, trained and insured arboriculturists in accordance with BS3998:2010.

## **2.0 Background**

### **2.1 Instruction:**

- I have been instructed by xxx to conduct an arboricultural survey according to BS5837:2012 on the trees surrounding the existing garage at xcxx.
- The initial enquiry was received by e-mail on October 21<sup>st</sup>, 2013 with an instruction to proceed received verbally on October 28<sup>th</sup>.
- Inspection took place on November 15<sup>th</sup>, 2013, between 10:00 and 12:30hrs.

### **2.2 Techniques used:**

- Visual Tree Assessment (VTA; Lonsdale, 1999).
- Desk-based enquiries: TPO / CA status, geological survey, mapping, qualitative heave assessment (Biddle, 1998).

### **2.3 Limitations:**

- The contents are intended for the sole use of the clients and their appointed professional structural engineer and / or architect. It is also understood that the document will be shared with the Local Planning Authority for the purposes of supporting a Planning Application. No liability is accepted for their use by any other parties to advance an argument or claim (including legal or financial) without prior consent.
- No liability is accepted for defects hidden from view by vegetation or other obstacles to access.
- Formal assessment of topography, drainage, service conduits, & soil conditions have not been made and are beyond the scope of this report.
- Specific laboratory investigations of soil properties (plasticity index, moisture content, suction pressure) have not been made and are beyond the scope of this report
- This report considers only the potential for the trees to be affected by the proposed garage. No liability for damage arising from any other source or mechanism is accepted.
- Specific information relating to the foundation construction was not available. All comments are based on the assumption that no subsidence or damage consistent with soil movement has occurred to date. This report will be deemed to be invalid if a history of such damage has not been made known to the surveyor.
- The survey area has been limited to the area adjacent to the existing garage. Trees in adjacent properties were deemed to be irrelevant to the current proposal as described to me by the clients. Generally, trees less than 5m tall have been excluded unless of particular relevance. Other trees at the property may be affected should works or vehicle movements extend outside the area described. If this becomes necessary, a further inspection and report is recommended.
- It is understood that any risks associated with these limitations are accepted by the clients.

### **2.4 Weather conditions:**

Sunny, cold, wind force 2-3.

**2.5 Access conditions:**

Access was unhindered.

**2.6 Validity:**

- Plants are biological organisms and change with time. Assessment remains valid for six months from the date of inspection, or until a major storm is experienced, after which time a new inspection is required.

**2.7 Background information:**

- There are no Tree Preservation Orders or Conservation Area statuses in force at the property or any of the surrounding properties. (East Herts District Council, interactive map, 21/11/2013 09:55).

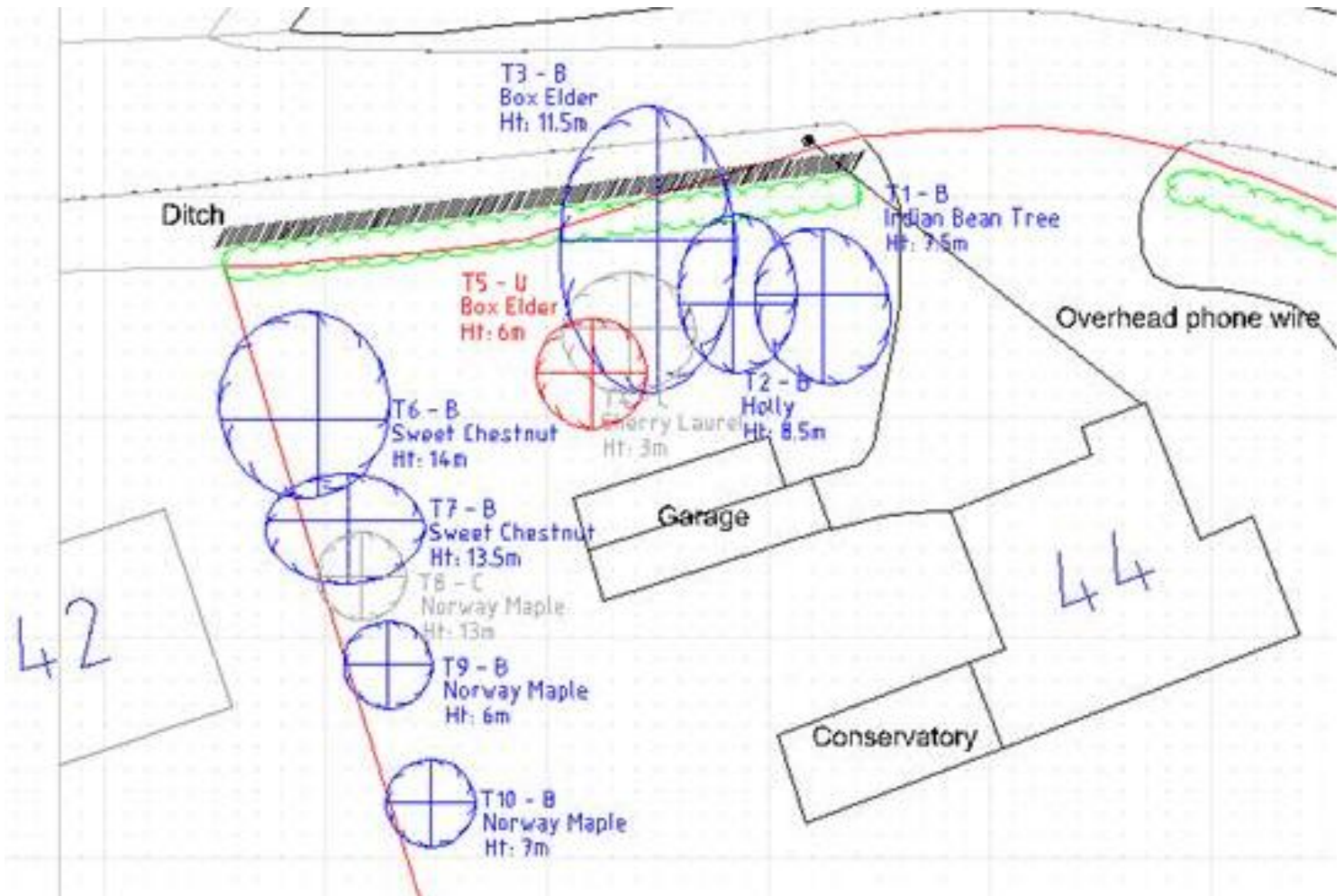
### **3.0 Results:**

#### **3.1 Situation:**

- The property occupies a level site in a rural village setting at an elevation of approximately 70m (Ordnance Survey Explorer Sheet 174). A ditch running in an east-west direction marks the northern boundary.
- Locally, ground undulates and slopes away gently into the valleys of the Rivers Lea (45-50m elevation 1km to the south) and Mimram (45-50m elevation 2km to the north). Ground to the west rises gently to the town of Welwyn Garden City, while that to the east dips gently towards Hertford and the confluence of the two rivers.
- The site therefore stands on a low promontory in a relatively unexposed location.
- Surface deposits are of chalky boulder clay with flints and variable amounts of gravels / sands overlying chalk bedrock (Boreholes TL21/SE32 and TL21/SE35; BGS, 2013).
- Soil type is described as a slightly acid loam of variable clay content, variable drainage characteristics and fertility ranging from low to high (LandIS, 2013).
- It is proposed to build a garage of brick and tile construction to replace the existing wooden structure to the west of the existing house.

3.2 Site plan:

See accompanying CAD drawing.



### 3.3 Tree Assessment:

T	Species	H	D	Spread	Clr	Age	P Cond	S Cond	Rec	ERC	Cat
1	Indian Bean Tree (Catalpa bignonioides)	7.5	340	N 3 E 4 S 4 W 2	1	M	Good	Good	Lift crown to 2.3m	40+	B1
2	Holly (Ilex aquifolia)	8.5	269	N 4 E 3 S 3 W 2	0	EM	Good	Fair	Remove saplings, lift crown to 2.3m, reduce height by 2m	40+	B2
3	Box Elder (Acer negundo)	11.5	410	N 6e E 3 S 7 W 5	2	M	Good	Fair - decay cavity	Reduce crown by 40%, Lift crown to 5.3m over road	20+	B1
4	Cherry Laurel (Prunus laurocerasus)	3	131	N 2.5 E 2.5 S 3 W 3.5	0	M	Good	Good	Trim or cut back hard	20+	C2
5	Box Elder (Acer negundo)	6		N E S W	1.5	M	Poor	Poor - heavily leaning, decayed	Remove	<10	U
6	Sweet Chestnut (Castanea sativa)	14	490	N 5.5 E 3.5 S 3 W 4e	2	M	Good	Good - potentially wind exposed	Reduce crown by 30% & deadwood	40+	B1
7	Sweet Chestnut (Castanea sativa)	13.5	360	N 2 E 4 S 3 W 3e	2	M	Good	Fair - potentially wind exposed	Reduce crown by 30% & deadwood	40+	B1
8	Norway Maple (Acer platanoides)	13	540	N E S W	4	M	Good	Fair - decayed pollard knuckle	Repollard within two years	20+	C1
9	Norway Maple (Acer platanoides)	6	360	N E S W	2	M	Good	Good	None	20+	B1
10	Norway Maple (Acer platanoides)	7	350	N E S W	3	M	Good	Good	None	20+	B1



Key:

T: Tree reference number

H: Height in metres.

D: Trunk diameter at 1.5m above ground in mm. (Or diameter derivative where tree multi-stemmed).

Spread: Crown spread at four cardinal compass points in metres.

Clr: Crown clearance above ground in metres.

Age: M – Mature, EM – Early mature.

P Cond: Physiological condition.

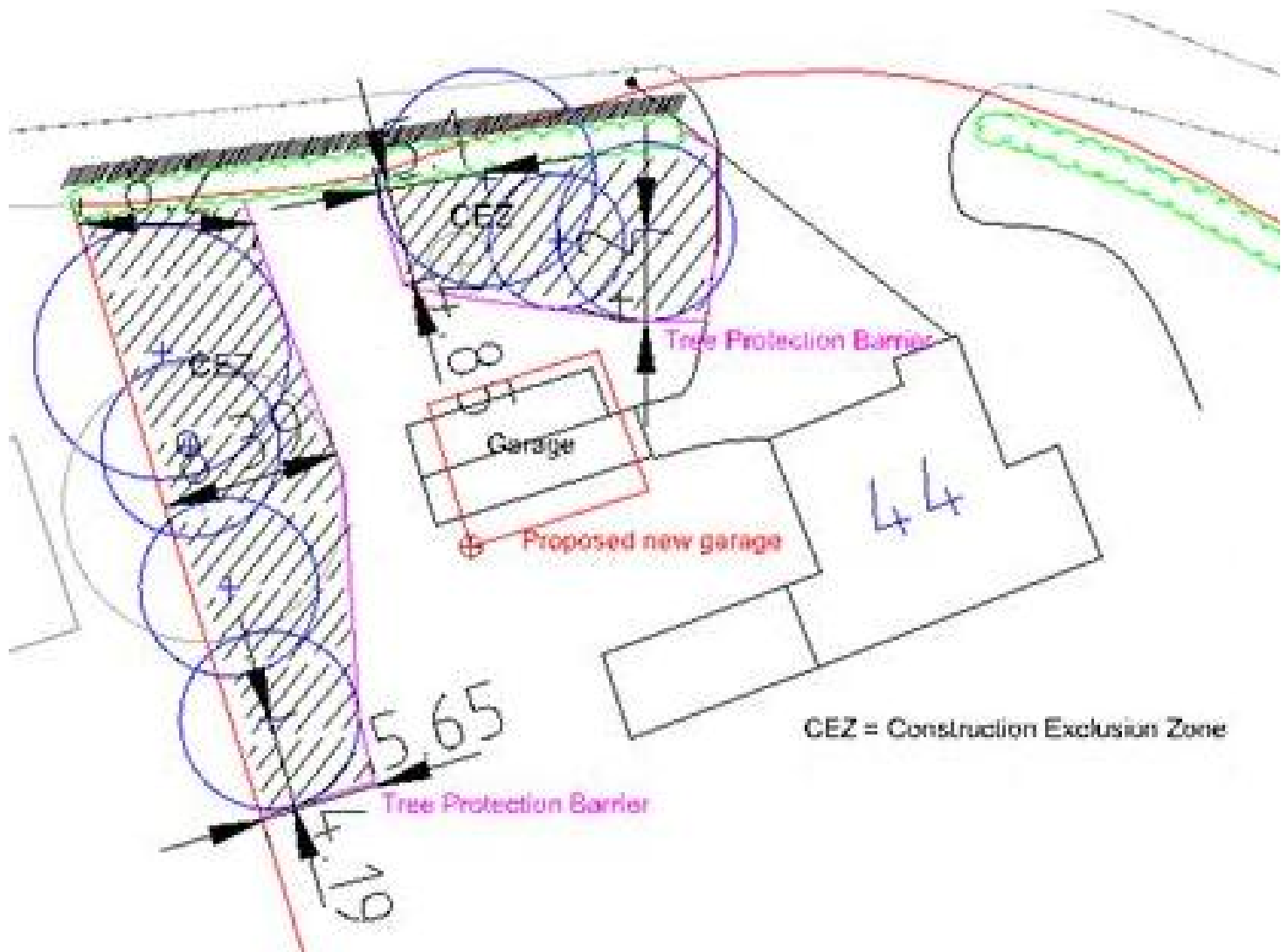
S Cond: Structural condition.

ERC: Estimated remaining contribution in years.

Cat: BS5837:2012 Retention Category

#### 4.0 Conclusions and initial recommendations:

- There are no particular conflicts between the proposed building development and the trees surveyed.
- Root protection areas and the above ground parts of the trees can be protected by erection of a mesh panel protection fence along the lines shown in the Tree Protection Plan (see below). Panels should stand in rubber feet, be clamped together and labelled with all-weather signage reading 'Construction Exclusion Zone – Keep Out'.
- A full Arboricultural Method Statement for tree protection can be provided, if required.



- The surveyed trees would benefit from sympathetic management as follows:
 

1 Indian Bean Tree	Lift crown to 2.3m
2 Holly	Remove saplings, lift crown to 2.3m, reduce height by 2m
3 Box Elder	Reduce crown by 40%, Lift crown to 5.3m over road
4 Cherry Laurel	Trim or cut back hard
5 Box Elder	Remove
6 Sweet Chestnut	Reduce crown by 30% & deadwood
7 Sweet Chestnut	Reduce crown by 30% & deadwood
8 Norway Maple	Repollard within two years
9 Norway Maple	None
10 Norway Maple	None
- Tree work should be carried out by competent, trained and insured arboriculturists in accordance with BS3998:2010.

- Access facilitation pruning.

Access to the development site is proposed to take place along the existing driveway to the north of the house and along a proposed new driveway to the west of the garage. In both cases, vehicles will pass close to a number of trees, tree groups and hedges. Collision between vehicles and tree branches can be avoided by carefully routing vehicles and pruning back branches that remain an obstacle. Clearer definition of the need for such pruning will emerge as plans develop.

- Tree root protection.

Protection measures include careful routing of vehicle tracks, use of temporary roadway surfaces sufficient for the expected vehicle loads, erection of tree protection barriers, and ancillary measures designed to avoid unintentional damage. Mitigation measures can include soil decompaction, application of fertilisers or other soil conditioners, irrigation and so on.

- Shade and seasonal nuisance.

Most of the large trees lie to the north of the development and so will not cast significant shade over the new building.

Large quantities of leaf litter, fruits and seeds and so on can be expected during the autumn and winter. Gutters should be protected and paved surfaces should be designed to minimise slip hazards.

- Heave.

Tree roots can abstract sufficient water to cause volume changes in shrinkable clay soils. Removal of water can lead to a soil moisture deficit, soil shrinkage and subsidence. Where a tree is removed, the opposite effect can occur resulting in soil expansion and creation of an upwards thrust known as heave. Heave effects are relatively localised but intense in nature and can cause significant damage to buildings.

The surveyed trees are sufficiently far from the proposed development that this is not of relevance and no further analysis of soil volume changes has been carried out. However, foundation design should take into account any recently removed trees of which you are aware.

- Ash dieback disease.

Although no ash trees are affected by the proposed development, a number were observed in other areas of the garden.

In 2012, the first cases of ash dieback disease in the UK were discovered. The disease is caused by the fungus *Chalara fraxinaea* and has crossed to the UK from continental Europe by natural means and also by introduction on infected nursery stock. The disease is progressive and results in the death of young trees within 1 year, and of older mature trees in 3-5 years. Although ash is a genetically diverse tree species, around 90% of all trees are believed to be susceptible. The rate of westward spread across the UK is unknown but by extrapolation of experiences in Europe, widespread tree loss can be expected within 10 years.

Management of your ash trees should therefore be considered in this context with a view to eventual replacement.

Further information is available on the Forestry Commission website at:  
<http://www.forestry.gov.uk/chalara>

- **References**

British Geological Survey (2013). <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>. BGS, Keyworth, Nottingham.

British Standards Institute (2005). BS5837:2012 – Trees in Relation to Construction. BSI Publications, London.

British Standards Institute (2010). BS3998:2010 – Standards for Tree Work. BSI Publications, London.

LandIS (Land information system; Soilscape viewer). Cranfield University. <http://www.landis.org.uk/soilscapes2/>

Lonsdale, D. (1999). Principles of Tree Hazard Assessment and Management. The Stationery Office, London.

Ordnance Survey (2012). Epping Forest and Lee Valley. Explorer Sheet 174. 1:25,000. Ordnance Survey, Southampton.