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Preliminary Arboricultural Impact Assessment and Arboricultural Method Statement

for

Land at Chelmsford Road, Hartford End, Chelmsford CM3 1JZ.

24/07/2023

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Dip Arb L3

TechArborA

Executive Summary

On 14/07/2023 an arboricultural survey was carried out and this report has been prepared accordingly to accompany a planning application and the tree information which can be assessed, evaluate the implications, and provide adequate protection to the trees on site.

Information within the report pursues to be in accordance with BS 5837:2012, Trees in relation to design, demolition, and construction. The purpose of the report being to assess the information regarding the proposed development of the new dwellings.

There are seven standard trees, three areas, and four hedges that are of focus in the report. All trees have been assessed to be of fair quality. This is per the categories set in BS 5837:2012.

One tree and a section of one hedge require removal to permit development.

If the recommendations set out in the report are adhered to, the development should not cause complications in arboricultural terms.

Contents

1.0 Introduction

1.1 Directive

On the 11/07/2023, Stockplace Investments Ltd instructed me conduct an arboricultural survey with complementing Arboricultural Impact Assessment and Tree Protection Plan (TPP) for the development and construction process for the Land at Chelmsford Road, Hartford End.

This report has been produced in accordance with the principles set in *BS 5837:2012 Trees in relation to design, demolition and construction- Recommendations* and *BS3998:2010 Tree work- Recommendations*. The following information is provided to accompany the planning application:

- Details of significant trees on the site affected by construction activity with corresponding categorisation
- A plan produced to show tree survey information and Root Protection Areas (RPA- see appendix 2)
- A tree protection plan which should be followed during works and development
- A suitable arboricultural impact assessment
- A tree works schedule in accordance with development

1.2 The Proposals

Construction of 50 new dwellings and public open spaces within the curtilage of the site.

1.3 Report Purpose

The purpose of this report is to show the Local Planning Authority (LPA) the tree information which can be assessed in conjunction with the planning application.

The report covers trees directly on the site and any that could possibly be affected by the development. The main concerns of the report are the impact development could have on trees and how the trees could affect development. An arboricultural impact assessment has been made based on any works close to the trees but RPAs have been calculated along with methods of work in these circumstances. A revised tree protection plan may need to be produced at the technical design stage after consent has been given.

The report covers seven trees, three area, and four hedges on site. These trees have been identified as the most likely to be affected by proposals and

construction activity. This report and the TPP should be used for arboricultural issues only.

1.4 Legal Constraints

Uttlesford District Council have an online mapping system showing constraints at a site and at the time of writing this report the site does not fall within a Conservation Area and no trees on site are protected by a Tree Preservation Order.

1.5 Tree Work Recommendations

The tree schedule following the survey can be found in Appendix 3. Three items require intervention irrespective of development within six months. Full works are detailed in the tree schedule.

1.6 Other Information

- Important documents provided
  - Existing site plan- Survey Solutions 50803IPLS-01.
  - Proposed site plan- SPD Studio SPD306_300_01_
- Contacts and references
  - Mr Paul Denney- Stockplace Investments Ltd.- 01371 821 750 – [redacted]
  - Uttlesford District Council- Trees Officer

- Methodology of the survey
  This can be found in Appendix 1.

2.0 Site Visit

2.1 Visit

The visit to the site was undertaken on 14/07/2023 by Jessica Denney. Weather on the day was dull.

2.2 Description

Land at Chelmsford Road, Hartford End is currently used as arable land with the majority of trees situated on the boundary of the site.

Trees on site are mostly semi mature, however many mature trees surround the site but are located in adjacent properties. The site is not frequently used by people and vehicles.

It is important that maintenance to boundary trees is undertaken regularly for public safety.

2.3 Survey

A total of seven trees, three areas, and four hedges were surveyed as part of the inspection. These have been numbered T1-T7, A1-A3, and H1-H4. The trees have been plotted using an existing site plan with tree locations. A topographical survey was provided however this did not cover all of the tree locations and some trees were plotted with the aid of aerial imagery.

A detailed assessment of each tree and appropriate recommended works can be found in appendix 3.

It is recommended that trees are surveyed at least on a yearly basis to assess any changes which could harm the public or property.

3.0 Arboricultural Impact Assessment

3.1 Proposal

It is intended to undertake development of 50 new dwellings within the curtilage of the site.

3.2 Access

Site access will not affect the theoretical RPA of trees to be retained. Therefore, it will not be necessary to install temporary ground protection based on arboricultural implications.

3.3 Tree Removal

One tree and a section of a hedge require removal to permit development. T1 and a section of H2 conflict with the construction of a new site access. These items are of fair quality.

3.4 Intrusion to Root Protection Areas

3.41 Construction of foundations for the new dwellings do not encroach within the RPAs of any trees to be retained. This means that it will not be necessary to consult a structural engineer for any foundations relating to arboricultural works.

3.42 Installation of hard surfacing does not affect the RPA of trees to be retained. Therefore, at this stage it is not necessary that a civil engineer is consulted to assess full implications and construction techniques in relation to arboricultural aspects.

3.5 Demolition

The removal of hard surfacing does not affect trees to be retained. However, any demolition on site should only take place once necessary fencing and ground protection is in place.

3.6 Retained Trees Protection

Details of tree protection can be found in Appendices 6 and 7. Barriers and guards should be erected before the commencement of works and demolition. They should stay in place for as long as development takes.

Large tree guards should be placed around the retained trees to ensure no damage is caused from development or vehicles. Parking spaces should be

allocated well away from the standard trees. More details can be found in the arboricultural method statement.

Barriers around the trees must be fit for purpose and safe for the public. This should be in accordance with BS 5837:2012 unless the LPA decides to issue a different method or specification.

Details of fencing can be seen detailed on the accompanying Arboricultural Impact Assessment drawing.

Above ground protection may be necessary where fencing is not suitable. This will protect RPAs from construction activity. Further details can be seen in Appendix 6.

3.7 Levels and Services

It is understood that changes to levels will not occur within the RPA or crown spread of any trees to be retained.

3.8 Site Compound

The site provides adequate space for storage of materials and a site compound outside the RPA and crown spreads of trees to be retained.

3.9 Site Monitoring, Management, and Remedial Works

Scheduled work that could potentially harm the RPA of a tree should be strictly supervised and any findings should be reported to the client and LPA accordingly. This can be seen in 6.3 of BS 5837:2012. The development should be regularly monitored by a competent Arboriculturalist at critical stages of development.

Arboricultural Method Statement

4.1 Introduction

Following planning consent, a detailed method statement may be required. This will be completed at the design stage. This section shows where works could affect trees requiring special methods or materials and how to reduce impact to trees. This section also details how trees can be protected during the development and after.

4.2 Site Preparation

a. Tree protection is a priority. This should be done before works commence. Tree protection barriers and ground protection should be put in place. Any ground vegetation and debris should be cleared. Hand tools should only be used for this.

b. Access to the site should be established including vehicular access and parking. This should be done away from any RPA boundaries.

c. Any chemicals and equipment washes should be outside the RPA boundaries and above ground level.

d. Ground protection must be established to prevent soil compaction.

4.3 Tree Surgery

If trees are removed according to recommendations, the stumps must be removed using machinery that minimises any damage to roots.
Chemical application and poisoning should be undertaken by professionals and competent people in accordance with instructions set by the manufacturer.

4.4 Remedial Works

Should further issues arise regarding retained trees and development, the main Arboriculturalist must be contacted in this regard to find a solution to any issues that all parties agree to.

4.5 Tree Protection Zones

Fencing around the trees must be fit for purpose and safe for the public. This should be in accordance with BS 5837:2012 unless the LPA decides to issue a different method or specification.

4.6 Hard Surfacing the Car Park and Machinery

Development within the RPAs must have a minimum impact on soil and roots to allow adequate water and air through the soil. Cellular confinement systems may be acceptable here as they use a porous sub-base. Development may require heavy machinery, strong evidence is needed to prove that it will not cause harm to the crowns on retained trees. Also, some landscaping may cause damage to the RPAs of trees.

4.7 Site Monitoring and Management

Before any works are undertaken. A site meeting between the project manager and Arboriculturalist will be held to discuss any protection measures and a schedule of works will be produced. Supervision arrangements can then be made accordingly.

The main contractor and site manager should be fully aware of the details of the report and should know what impact the works will have on trees and how to minimise them.
A meeting shall be held to discuss supervision including work within RPAs, tree protection barriers, and ground protection.
Supervision will allow monitoring of works to see if they comply with arboricultural conditions and be able to give advice on tree problems. Site visits will result in reports to show the LPA the progress of development as well as identify any remedial works required.

Contact Details

- Site manager
- LPA tree officer
- Arboriculturalist
- Project manager
- Other relevance

5.0 Conclusions

5.1 One tree and a section of one hedge require removal to permit development.

5.2 The remaining trees will be retained as they have great amenity value and are visible throughout the surrounding area.

5.3 The trees will have barriers and fencing around them whilst development takes place. Ground protection may be necessary to further protect RPAs.

5.4 The trees should be monitored during development with suitable contingencies planned to any potential problems that may arise.

5.5 Following this reports guidelines and protection methods will result in minimal impact to the trees.

6.0 Recommendations

6.1 It may be necessary to produce a full and detailed arboricultural method statement following receipt of planning consent. This will be undertaken with the assistance of the design team to ensure all works have minimal impact on the retained trees.

6.2 The arboricultural method statement should be followed closely at all stages of development and supervised at suitable stages. Copies should be available on site and for operatives.

6.3 Before works begin, the trees must have adequate protection, including barrier and ground protection.

6.4 Measures outlined in this report should provide retained trees with the highest protection during development and construction.

Appendix 1

Survey information

1.0 Methodology

All trees were surveyed from ground level with a detailed investigation as possible. Dimensions are as accurate as possible but some estimations have been made where other factors (such as ivy, accessibility due to buildings and walls) may have hindered inspection. BS 5837:2012 4.4.2.5 recommends information that can be collected and included is species, height, diameter, crown spread, age class, physiological condition, estimated years remaining, BS category (U, A, B, or C to show suitability as a constraint to development), crown clearance, and structural condition.

2.0 Documents

Some documents were received to aid the survey as well as other information. These were a copy of the Tree Preservation Orders in place, suitable maps, and plans for the site.

3.0 References

British Standards Institution (2012) BS 5837: Trees in relation to design, demolition and construction – Recommendations;

British Standards Institution (2010) BS 3998: Tree Work- Recommendations

Appendix 2

Key to survey results

Terms

T: Tree

G: Group of trees

RPA: Root Protection Area (minimum area surrounding the tree which contains sufficient roots. BS 5837 says that the RPA may be changed in shape due to site factors, species, and root condition. Calculated by multiplying the diameter in millimetres by 12/1000. Value is then squared and multiplied by pi to give the estimated RPA. Note- this is typically used for single stem trees.

Age Class

- Y: Young, establishing tree that can easily be transplanted
- SM: Semi-mature, established tree yet to reach its ultimate height and spread with much room for growth
- EM: Early Mature, a tree still reaching the ultimate height but will still increase in diameter and crown spread
- M: Mature, limited potential for increase in size but has a safe life expectancy
- OM: Over Mature, a tree with limited life expectancy
- V: Veteran, older than typical for species and has great ecological, cultural, or aesthetic value.

Visual Amenity: The impact the tree has to the surrounding area, including its contribution to the street scene and the impact of losing the tree.

Est. Years: Expected years left of contribution

BS Cat.: in accordance with 4.5 of BS 5837

U: Unsuitable for retention, not realistically retained for more than 10 years. Can serve as conservation value in some cases

A: High quality with 40 years life expectancy remaining

B: Moderate quality with 20 years life expectancy remaining

C: Low quality with 10 years life expectancy remaining

These categories are then given a number either 1, 2, or 3.

1: Arboricultural values

2: Landscape values

3: Cultural values

Crown Clearance: the height of the first main branch above ground level, or in some cases height of canopy above ground level.

Recommendations: based on findings at the time of the survey. Cannot be based on development proposal and do not reflect change of land use.

Priority:

1. Works which require urgent intervention
2. Works required within six months
3. Works required within a year
4. Works not required at present

Appendix 3

Tree Survey Results*

See attached document.

*Measurements are as accurate as possible with the equipment used but some measurements may be estimated. Measurements are accurate to time of survey. Information collected is in accordance with recommendations in subsection 4.4.2.5 of BS 5837 and includes species, height, diameter, crown spread, crown clearance, age class, physiological condition, structural condition and remaining contribution. Each tree was then allocated one of four categories (U, A, B or C) to reflect its value to the surroundings.

All recommended tree works are to comply with BS 3998:2010 Tree Work-Recommendations or the industry best practice. Some products from tree works are recommended to be left on site where possible to serve as wildlife habitat and ecological features.

Appendix 4

Tree Location Plan and Tree Protection Plan

See drawings adjoined separately.

- **Tree root protection areas**
- **Proposed construction**
- **Arboricultural implications**

Appendix 5

Tree Surgery Schedule

Tree No.	Category	Works	Reason
1	C	Fell to permit development	Conflicts with new access
Section of H2	C	Fell to permit development	Conflicts with new access

Appendix 6

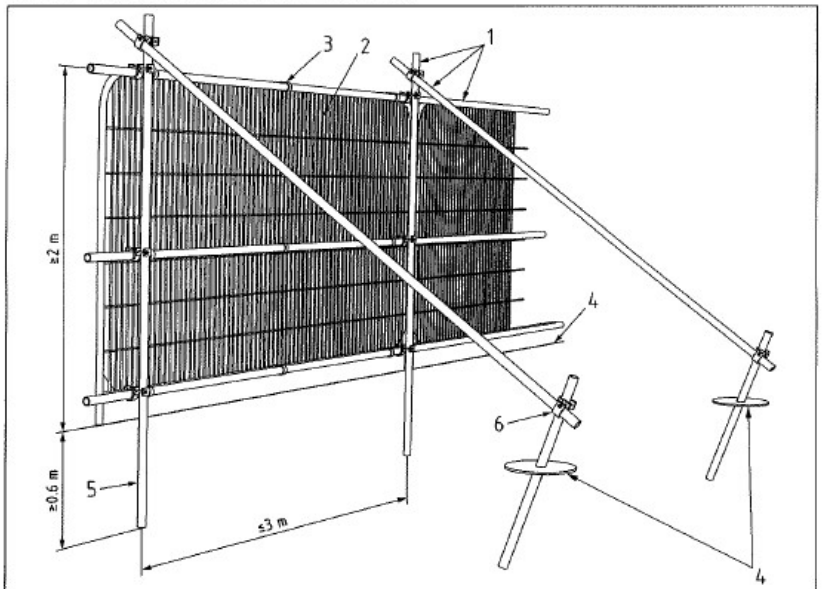
Tree Protection

Tree guards and barriers are often made from mesh or heavy metal such as cast iron. They often have spikes on the base of the guard to make it easier to fit. Tree guards will range from small, medium, and large.

6.2.2.2 of BS 5837 sets specifications for guards and barriers. The barrier should be a minimum of 2 metres high. The extract below is taken from BS 5837.

The default specification should consist of a vertical and horizontal scaffold framework, well braced to resist impacts, as illustrated in figure 2. The vertical tubes should be spaced at a maximum interval of 3m and driven securely into the ground. Onto this framework, welded mesh panels should be securely fixed. Care should be exercised when locating the vertical poles to avoid underground services and, in the case of the bracing poles, also to avoid contact with structural roots. If the presence of underground services precludes the use of driven poles, an alternative specification should be prepared in conjunction with the project Arboriculturalist that provides an equal level of protection. Such alternatives could include the attachment of the panels to a free-standing scaffold support framework.

Figure 2 **Default specification for protective barrier**



Key

1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

Example of Ground Protection

Appendix 7

Works Undertaken Near Trees

Working within RPAs

1.0 New services

New development may result in services being run through the tree protection zone of a tree. The arboricultural consultant must be contacted before this is undertaken and then the LPA tree officer can agree any recommendations. This is vital for works to continue. Excavation should only be undertaken by hand and cutting roots should only be done as a last resort. Roots less than 25mm in diameter can be cut by leaving a small wound but roots greater than this will need to be referred first.

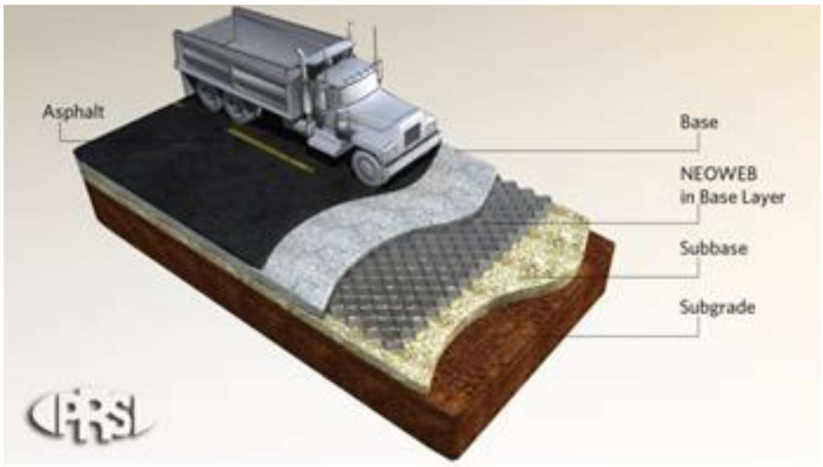
2.0 New hard surfacing

The LPA must agree that hard surfaces are acceptable in this case and then a type of no-dig construction made above ground will minimise impact to the tree roots. This should be made of a porous material and design which allows water and air to easily pass in and out.

Whilst roots are exposed, they should be immediately wrapped or covered to prevent any desiccation. A geotextile should be used at the base of construction to help prevent any pollution that could contaminate the rooting area below it.

The surfacing should be set back from the stem of the tree. It should be remembered that the load of the hard surface should be spread to avoid compaction.

The diagram below shows an example of a cellular confinement system (typically using geocells)



Appendix 8

Specific Report Caveats

Specific report caveats

- Some estimations were made where the trees were inaccessible, but this should not have a significant effect on the recommendations.
- This report and survey are concerned only with arboricultural issues
- Trees are living organisms that can change frequently meaning further examination may be required. Likewise, a new survey and report will need to be undertaken if development or construction proposals change. This report is valid for one year from the date indicated on the first page.
- Equipment used included diameter tape and a clinometer; no internal equipment was used.
- All relevant wildlife and countryside legislation should be considered before undertaking any works relating to trees.
- It is recommended that tree works are not undertaken within the bird nesting season (between March and September)
- This report is strictly for the purposes of the proposed works and should not be used in conjunction with any other project.