

TPS

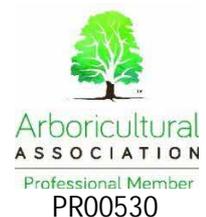
Arboricultural Consultancy  
www.treeplanningsolutions.co.uk

## Arboricultural Impact Assessment and Preliminary Method Statements

For

Land at Heath Lodge, Clacton Road, Weeley Heath, Essex

Date 4th October 2020  
Client ABC Planning Ltd  
Report by Mr James Choat BSc, M Arbor A  
Site Heath Lodge  
Reference No. TPSarb1990920



## Contents

- 1.1 Summary
- 1.2 Limitations
- 1.3 Qualifications
- 2.1 Site description
- 2.2 Topographical survey
- 2.3 Soils

## Tree Survey, Constraints and Impact Assessment

- 3.1 Tree survey and schedule
- 4.1 Tree constraints
- 5.1 Arboricultural impact assessment
- 5.2 Further discussion
- 6.1 Tree removals and impact assessment

## Arboricultural Method Statement

- 7.1 Tree works specification
- 8.1 Tree protection
- 9.1 Method statements
  - 9.2 Excavation within the RPA
  - 9.3 Soft surfaces within the RPA
- 10.1 General arboricultural considerations
  - 10.2 Storage
  - 10.3 Contractors parking
  - 10.4 Slope
  - 10.5 Services
  - 10.6 Levels
  - 10.7 Development phasing
  - 10.8 Contract monitoring
  - 10.9 Incidents/variations
  - 10.10 Wildlife
  - 10.11 Tree legislation
- 11.1 Conclusion

## Tables

- 1 Tree condition table
- 2 Tree constraints table
- 3 Arboricultural impact assessment and design issues
- 4 Trees to be retained and removed
- 5 Tree works specification

## Appendix

- 1 Tree survey schedule and explanatory notes

# TPS

- 2 Plan 1 Tree survey and constraints plan
- 3 Barrier protection construction profile
- 4 Example of sign to be placed on tree barrier protection
- 5 Plan 2 Tree protection plan
- 6 Proforma for Arboricultural monitoring

## 1. Summary

1.1.1 Tree Planning Solutions received instruction from ABC Planning Ltd to complete a suitable arboricultural site survey and produce this subsequent assessment for an area of land at Heath Lodge, Clacton Road, Weeley Heath, Essex.

1.1.2 The survey and this report are provided to support a proposed development for the demolition of the existing dwelling and development of 6 detached dwellings with parking, garages and access.

1.1.3 The site was surveyed on the 1<sup>st</sup> October 2020, the weather was overcast with a light wind, conditions for surveying trees were good. 6 individual trees and 3 hedgerows were surveyed as part of the assessment.

1.1.4 The report provides the following information and data in accordance with the criteria provided within BS 5837 2012 'Trees in relation to design, demolition and construction Recommendations'

Tree survey and schedule

Tree constraints plan and data

Tree impact assessment

Arboricultural method statement and tree protection plan

1.1.5 Tendring District Council planning team were contacted 28 09 20, the application site is subject to a tree preservation order which protects 2 Lime on the front northern boundary and 2 Oak on the roadside boundary. The site is not situated within a designated conservation area (CA). The hedgerow H3 is subject to the hedgerow regulations 1997 as it is situated on land used for agriculture, the remaining hedgerows H1 and H2 are not subject to the hedgerow regulations 1997 as they are not situated on land used for agriculture, the keeping of livestock or horses or situated on common land. It is recommended the applicant obtain written consent from Tendring District Council and where applicable the Forestry Commission, before carrying out recommendations contained within this report. Furthermore, no works should be carried out to any 3<sup>rd</sup> party tree(s) without first obtaining consent from the owner(s) of the tree(s).

1.1.6 Multi agency nature on the map GIS data (MAGIC) was checked 28/09/20. The site is subject to a nitrate vulnerable zone and site of special scientific interest (SSSI) impact zones (Upper Weeley Hall Wood SSSI).

1.1.7 This report pays particular reference to:

British Standard 5837 2012	Trees in relation to design, demolition and construction Recommendations
British Standard 3998 2010	Recommendations for tree work
NHBC CH 4.2	Building near trees
NJUG 4	National Joint Utilities Group 'Working Near Trees'
NPPF 2018	National Planning Policy Framework

## 1.2 Limitations

1.2.1 The applicant has supplied a plan of the existing and proposed (desired) site, no further information has been provided.

The following plans have been provided with the instruction of this report:

Existing layout drawing provided by Homa Design

Proposed layout/concept drawing provided by Homa Design

1.2.2 This survey is for the purpose of determining the impact of the development upon existing trees; it is not a detailed tree condition survey and should not be used as such. All trees have been assessed from ground level; no aerial or below ground parts have been inspected in detail.

1.2.3 The survey remains valid for 12 months. If during 12 months following the tree survey adverse weather conditions have occurred, or the site environment changed in any form, it is recommended the trees be reassessed.

1.2.4 The content of this report remains the property of Tree Planning Solutions unless otherwise stated. This report is not to be copied without written consent from Tree Planning Solutions.

1.2.5 The consultant is a qualified arboriculturist, occasionally opinions and views are provided regarding buildings and structures, the consultant is not a qualified buildings surveyor or structural engineer and therefore all opinions and views should be supported by a qualified structural/building engineer.

### 1.3 Qualifications

1.3.1 The consultant has been working within the Arboricultural industry for 21 years as a tree surgeon, tree officer and consultant. Knowledge and experience are regularly updated by attending industry related seminars and courses. Continued professional development is verified by professional membership to the Arboricultural Association (membership No. PR00530), CPD is updated on-line, a record can be provided upon request.

1.3.2 The consultant holds a Bachelor of Science (BSc) degree in Rural Resource Development, a Higher National Diploma (HND) in Rural Resource Management, the Lantra Professional Tree Inspection Award, the RFS Level 2 Certificate in Arboriculture, level 3 certificate in Ecology and is a registered user of Quantified Tree Risk Assessment (QTRA).

## 2.1 Site description

2.1.1 The site is located to the north of Clacton On Sea within the village of Weeley Heath and accessed from Clacton Road via a crossover providing vehicular access to the site. The trees subject of this report are situated generally to and beyond the boundaries of the site. The site is situated within a semi rural area with good number of mature tree features. The application site consists of the following built structures – hard surfaces paths, access and detached dwelling. The site consists of the following habitat / green features – improved grass and amenity trees / shrubs.

## 2.2 Topographical survey

2.2.1 A topographical survey was not provided with the instruction for this project. The site is generally flat with no significant changes in levels that will influence root orientation or morphology, it is therefore reasonable to assume the root protection areas throughout the site will be normal in size and shape. Various inspection chambers were recorded during the survey, the date of construction/servicing is not known, it is not known therefore whether the below ground services are affecting / have previously affected the rooting zone of the trees. Overhead services were not recorded during the tree survey.

## 2.3 Soils

2.3.1 British Soil Geology Maps scaled at 1:50,000 show the site to be situated on bedrock of Thames Group – clay, silt and sand and superficial deposits of Cover Sand– clay, silt and sand. Sand and gravel soil texture is likely to offer a deeper rooting environment than that of clay as the roots can easily penetrate and explore sandy soils with little resistance, clay like soils tend to restrict root exploration. Clay soils can be modified by moisture, either reduced or increased in volume by fluctuations in moisture content, such fluctuations can influence how structures perform and therefore may require additional, engineered support to improve the stability or the structure. Local variations and differing soil seams of superficial and bedrock deposits do occur, differing bedrock and superficial deposits will have a different soil texture and structure to those described above and will perform differently. It is recommended core samples be obtained to determine the exact soil texture at the site.

## 3.1 Tree survey and schedule

3.1.1 The tree schedule is an account of all the trees at or adjacent to the site and is written on to a tabular form. Each tree is given a reference number (T1, T2, T3, G1 etc) that is plotted on to a tree survey plan to be cross-referenced with the tabular form. Contained within the schedule are the dimensions of each individual tree and any notable physiological or mechanical defects. An estimated life expectancy is derived from the condition and context of the tree and then graded for its suitability for retention. The tabular form can be found in appendix 1 with explanatory notes for each column heading. The tree survey plan can be found in appendix 2. Provided below is a table of the existing trees, their current condition and British Standard 5837 category grading. The categories for retention are; A - high value, B - moderate value, C - low value and U - unable to be retained as a living tree, each category is given a colour code for use with the tree survey plan (appendix 2), A - Green, B- Blue, C - Grey and U- Red. There are further sub-categories used alongside the categorisation; 1 arboricultural, 2 landscape and 3 wildlife or historical values. A tree with more than 1 subcategory is considered more valuable than 1 with just 1, i.e. a tree categorised as B1/2/3 is more valuable than B1. British Standard 5837 recommends trees with a stem diameter of less than 150mm are categorised as C regardless of condition, form etc. it is assumed that a tree of this size can either be transplanted or replaced without any negative impact upon tree-based visual amenity. Veteran trees are automatically graded as category A due to their age and wildlife associations although they will likely contain significant defects, generally the defects are the microhabitats that increase their value.

Table 1 Tree condition table

Tree ref	Species	Age class	Observations	Category grading
T1	Lime Tilia sp	M	Ivy clad. Pollard at 2m. Last pollard approx. 20 years. Significant large pollard growth / stems at 4m.	B1/2/3
T2	Lime Tilia sp	M	Pollard at 6m. Last cut 20 years ago. Significant large pollard growth / stems at 4m.	B1/2/3
T3	Oak Quercus robur	M	Cavity at base between buttress roots, probed to 30cm with no evidence of decay beyond, possible buttress root cavity. Thin crown with dies back evident and deadwood. Historical ditch line tree, flat buttress on one side, ditch since filled, likely the cause of the slow crown decline.	B1/2/3
T4	Oak Quercus robur	M	Large diameter deadwood within crown. Some crown die back. Historical ditch line tree, flat buttress on one side, ditch since filled, likely the cause of the slow crown decline.	B1/2/3
H1	Hawthorn Crataegus monogyna	M	Mostly hawthorn hedge, close planting centres, management lapsed resulting in restricted crown growth and limited stem girth compared with tree height.	C1/3

Tree ref	Species	Age class	Observations	Category grading
T5	Oak Quercus robur	M	Soil removed from base to around 100mm. Some below bark damage resulting in detached bark.	A1/3
T6	Oak Quercus robur	Y	Chain-link fence embedded in to central area of stem.	C1
H2	Hawthorn Crataegus monogyna, Blackthorn Prunus spinosa	M	Boundary hedgerow.	C1/2/3
H3	Willow Salix sp, Birch Betula sp, Aspen, Populus sp Hawthorn Crataegus sp	M	Boundary hedgerow. Most of the willow has collapsed. Frequent dead hawthorn. Aspen with leaning stems and crown subject to fire damage.	C1

## Further discussion

3.1.2 All trees have been categorised in accordance with British Standard 5837: 2012. Trees T1, T2, T3 and T4 are prominent tree features and provide high visual amenity value, they are mature trees and would have formed part of the historical highway ditch and hedge line, the landscape and historical value is considered high. T3 and T4 oak trees are native, mature specimens and as such likely to provide high insect associations and good number or microhabitats, the wildlife value is considered high. Unfortunately, the condition of T3 and T4 is slightly impaired due to crown die back and deadwood, likely due to a slow decline following change in environment (ditch filled). Crown works will be required to maintain the trees in proximity to the highway. T1 and T2 Lime have recently been pollarded (within the last 20 years), the pollard stems are now starting to compete and crown reduction works are recommended to reduce the load at the pollard head whilst retaining a high crown and the visual amenity. The remaining trees are to the rear of the site, the amenity and landscape value is limited, the wildlife value is reasonable due to the number of native specimens and close connectivity providing good structural diversity used for species navigation, migration, foraging and breeding.

3.1.3 Provided below is the British Standard 5837 categorisations with total number of trees for each corresponding categorisation:

A = 1

B = 4

C = 4

U = 0

- 3.1.4 All category A trees should be retained. The development design should seek to accommodate such trees using special construction techniques and design modification. There should be only very minor work within the RPA and only minor crown works, generally those required to improve the condition of the tree. Category A trees are those that offer a significant contribution to the amenity and character of the area, they have a long-life expectancy and contain very few defects.
- 3.1.5 The majority of category B trees should be retained where their long-term retention is achievable. A mixture of tree works, design modification and special construction techniques should be employed to accommodate these trees. Generally, category B trees have a life expectancy over 20 years and offer a medium to long-term contribution to the amenity/character of the area. They contain some defects that can be remedied with suitable tree works.
- 3.1.6 The category C trees are desirable for retention in the short term. Generally, category C trees have a life expectancy of less than 10 years and would be acceptable to remove once new planting is established. Category C trees contain many defects that are likely to reduce the long-term life expectancy of the tree. Category C trees do not add to the character or visual amenity of the area.

## 4.1 Tree constraints

4.1.1 The above and below ground tree constraints are represented by the present crown spread and root protection areas (RPA) of each retained tree. British Standard 5837 provides a calculation for root protection areas for both single and multi-stem trees. The constraints are plotted to a site plan around each individual tree; the constraints plan is used to influence site layout and further clarifies tree retention or removal. The constraints plan can be found in appendix 2. Further consideration should be given to the future growth potential for each retained tree; the table below provides estimated growth rates that should be considered when achieving a suitable design layout.

4.1.2 Provided below is a constraints table that provides data for the radial distance required for the RPA, the present height and spread of the tree, the future increase in height and spread of the tree in 10 years and tree management considerations.

Table 2 Tree constraints table

Tree ref	Species	Height in m	Stem diameter in mm	Radial distance required for RPA	Branch spread				Height of crown clearance in m	Estimated increase in crown height in M in 10 years	Estimated increase in crown spread in M in 10 years	Management considerations
					N	E	S	W				
T1	Lime Tilia sp	18	580	6.96	4	4	4	2	2	0	0	Likely to require crown works to maintain structural integrity
T2	Lime Tilia sp	18	560	6.72	4	2	4	4	2	0	0	Likely to require crown works to maintain structural integrity
T3	Oak Quercus robur	10	700	8.4	4	4	4	4	3	0	0	Likely to require crown works to remove crown dieback and deadwood
T4	Oak Quercus robur	14	700	8.4	5	5	5	5	3	0	0	Likely to require crown works to remove crown die back and deadwood
H1	Hawthorn Crataegus monogyna	5	100	1.2	1	1	1	1	0	0	0	Likely to require crown works to maintain structural integrity
T5	Oak Quercus robur	18	660	7.92	7	7	7	7	3	2	2	None

Tree ref	Species	Height in m	Stem diameter in mm	Radial distance required for RPA	Branch spread				Height of crown clearance in m	Estimated increase in crown height in M in 10 years	Estimated increase in crown spread in M in 10 years	Management considerations
					N	E	S	W				
T6	Oak Quercus robur	9	300	3.6	3	3	3	3	1	0	0	Poor specimen, likely to require felling due to chain-link fence embedded in to stem
H2	Hawthorn Crataegus monogyna, Blackthorn Prunus spinosa	4	200	2.4	2	2	2	2	0	0	0	Likely to require crown works to maintain structural integrity
H3	Willow Salix sp, Birch Betula sp, Aspen, Populus sp Hawthorn Crataegus sp	5	200	2.4	3	3	3	3	0	0	0	Likely to require crown works to maintain structural integrity

## 5.1 Arboricultural impact assessment

5.1.1 Provided below is an assessment of the impact of the development on each individual tree and any design requirements for the site. Such factors include tree preservation orders, tree amenity, tree retention, removal of structures within RPA, infrastructure requirements, construction of infrastructure, end use of space, tree loss / new planting, veteran/aged tree assessment, light issues, proximity to structures, relationship with new homeowners and tree nuisance.

Table 3 Arboricultural Impact Assessment

Tree Ref	TPO/CA/other statutory protection. Amenity assessment. Retention recommendation.	Removal of existing structures and hard surfacing within RPA	Proposed Infrastructure within RPA	Construction methods for proposed infrastructure	End use of space	Tree loss and new planting	Shading and light	Proximity to structures	Future pressure for tree removal/works	Seasonal tree nuisance
T1, T2, T3 and T4	Tendring District Council contacted 28/09/20 – Trees subject to a TPO. Site not situated within a designated conservation area. MAGIC GIS checked 28/09/20 – site listed within Nitrate vulnerable zone, and SSSI Impact Zones (various). Good amenity, landscape and wildlife value. Condition slightly compromised due to biological and structural defects. Trees recommended for retention.	N/a	Proposed plots 1 and 2 within RPA of T2, T3 and T4. Proposed path within RPA of T3.	Recommend least invasive foundation design such as pile and beam or raft. To be confirmed by project structural engineer. Hand excavation for raft or connecting beam, see method statement provided in section 9. Hand excavation for preparation of levels for proposed path within RPA of T3 – excavation to 50mm upper soil horizon only.	N/a	N/a	T4 Slight loss of morning sunlight to the lower principal room on south eastern aspect of plot 2. Use of large windows to the front to improve natural light entering the room. Raise crown of T4 improve light reaching front of dwelling.	N/a	N/a	Leaf and fruit dispersal Nuisance of blocked drains, gutters etc. Recommend use of guards as appropriate to prevent blockages occurring. No sheds patios or outbuildings to be positioned within the crown spread of any retained tree. Use surfaces that do not tarnish from tree deposits (shingle, loose stone, grass, etc.)

Tree Ref	TPO/CA/other statutory protection. Amenity assessment. Retention recommendation.	Removal of existing structures and hard surfacing within RPA	Proposed Infrastructure within RPA	Construction methods for proposed infrastructure	End use of space	Tree loss and new planting	Shading and light	Proximity to structures	Future pressure for tree removal/works	Seasonal tree nuisance
T5	Tendring District Council contacted 28/09/20 – Tree not subject to a TPO. Site not situated within a designated conservation area. MAGIC GIS checked 28/09/20 – site listed within Nitrate vulnerable zone, and SSSI Impact Zones (various). Good landscape and wildlife value, limited visual amenity value. Trees recommended for retention.	N/a	Proposed garage within RPA.	Recommend least invasive foundation design such as pile and beam or raft. To be confirmed by project structural engineer	N/a	N/a	N/a	N/a	N/a	Leaf and fruit dispersal Nuisance of blocked drains, gutters etc. Recommend use of guards as appropriate to prevent blockages occurring. No sheds patios or outbuildings to be positioned within the crown spread of any retained tree. Use surfaces that do not tarnish from tree deposits (shingle, loose stone, grass, etc.)
H1, H2 and H3	Tendring District Council contacted 28/09/20 – Trees not subject to a TPO. Site not situated within a designated conservation area. H2 subject to the hedgerow regulations 1997. MAGIC GIS checked 28/09/20 – site listed within Nitrate vulnerable zone, and SSSI Impact Zones (various). Limited landscape and amenity value, reasonable wildlife value. Trees recommended for retention.	N/a	N/a	N/a	N/a	Fell H3 and T6 due to condition. No requirement for replacement planting as location does not provide high visual amenity value	N/a	N/a	N/a	Leaf and fruit dispersal Nuisance of blocked drains, gutters etc. Recommend use of guards as appropriate to prevent blockages occurring. No sheds patios or outbuildings to be positioned within the crown spread of any retained tree. Use surfaces that do not tarnish from tree deposits (shingle, loose stone, grass, etc.)

## 5.2 Further discussion

- 5.2.1 It is recommended that pile and beam or raft and beam foundation design be considered where the proposal falls within, or is close to, the RPA. This will minimise the amount of soil/root disturbance that may otherwise occur with traditional strip trench footings. The foundation design should allow for the smallest pile diameter for the applied load; this will enable a smaller piling rig to operate at the site easing constraints on space and soil compaction. All heavy plant operating within the RPA should operate on surface that will spread load such as pre-cast reinforced concrete slabs or composite boards fit for purpose. The foundation connecting beam, or raft for the pile foundations, should be excavated using an air spade or hand excavated using an agreed method statement. Excavation should be no deeper than 300mm and where possible the beam should protrude above the current ground levels. Greater detail is to be provided by the project structural engineer. Trial excavation is recommended to locate structural roots or root mats, a pile plan should be designed to avoid contact with the located roots.
- 5.2.2 Below ground services for drainage, electricity, gas, water, telecoms, are to be located outside the RPA of the retained trees or connected to existing services within the site. If however, this is not viable then trenchless methods of working will be adopted, shallow trenching may be permitted although a trial trench should be prepared to determine the presence of roots to be affected and the impact upon the health of the tree affected. Overhead services such as lighting columns, electricity, telecoms, etc. are to be outside the present and future canopy spread, use of Table 2 'Tree Constraints' will aid design.
- 5.2.3 Guttering and drains will have guards to prevent leaf/fruit drain blockage. Where a significant loss of rainwater water is likely due to loss of natural soft surfaces, the rainwater drainage will be redirected into the rooting area of the retained trees. The drainage will result in an even and slow distribution at varying points across the rooting area, it will not cause waterlogged conditions or damage to the soil structure, structural engineer to advise further.



5.2.4 The information provided in the impact assessment and constraints advice has provided a basis for tree retention, works specification and construction techniques required. Further details for this can be found in the following sections of this report.

## 6.1 Tree removals and impact assessment

6.1.1 Provided below is a table of the trees to be removed. This is to be cross-referenced with the tree survey plan provided in appendix 2.

Table 4 Trees to be removed

Trees to be removed	Reason for removal	Impact upon visual amenity
T6 and H3	Poor condition.	None. Trees are situated to rear of site and not visible from any significant public vantage point.



7.1 Tree works specification

7.1.1. All tree works are to be completed as a starting phase of development unless otherwise stated.

7.1.2 All works are to be completed to BS3998 2010 ‘Recommendations for tree works’

7.1.3 Research suggests that tree works are better completed when the trees are using the least amount of energy and when conditions do not favour pathogens. It is recommended that the works specified below be carried out in midsummer July/early August or the dormant period Jan/Feb. Specifically, times of bud break and leaf abscission should be avoided. This may need further assessment for different species or for aged/veteran trees whose energy reserve and potential to kinetic ratio is susceptible to change from minor tree works. Where this is likely to occur, a separate management plan for that individual tree may be required.

7.1.4 Provided below is a table showing tree works specification. The key for works urgency can be found in Appendix 1 Explanatory notes.

Table 2 Tree works specification

Tree ref	Species	Age class	Preliminary management recommendations	Works urgency	Category grading
T1	Lime Tilia sp	M	Reduce crown by 4-5m to remove load and bending stress at pollard point. Establish new reduction point to manage on 5-10-year cycle depending on new growth.	3	B1/2/3
T2	Lime Tilia sp	M	Reduce crown by 4-5m to remove load and bending stress at pollard point. Establish new reduction point to manage on 5-10 year cycle depending on new growth. Root pruning within RPA, see method statement and tree protection plan for location.	3	B1/2/3
T3	Oak Quercus robur	M	Remove deadwood. Root pruning within RPA, see method statement and tree protection plan for location.	2	B1/2/3
T4	Oak Quercus robur	M	Remove deadwood. Root pruning within RPA, see method statement and tree protection plan for location. Raise crown to 4m removing sub-laterals only.	2	B1/2/3
H1	Hawthorn Crataegus monogyna	M	Managed to 1.5/2m. Reduce lateral spread to 0.75m. Restock with additional hawthorn or native species.	2	C1/3

# TPS

Tree ref	Species	Age class	Preliminary management recommendations	Works urgency	Category grading
T5	Oak Quercus robur	M	Raise crown proposal side to 5m removing sub-laterals only.	3	A1/3
T6	Oak Quercus robur	Y	Fell to allow boundary finishes. Grind stump following below ground service check.	0	C1
H2	Hawthorn Crataegus monogyna, Blackthorn Prunus spinosa	M	Reduce lateral spread by 0.75m.	3	C1/2/3
H3	Willow Salix sp, Birch Betula sp, Aspen, Populus sp Hawthorn Crataegus sp	M	Fell. Grind stumps following below ground service check. - Recommendation - restock with native hedgerow mix.	3	C1

## 8.1 Tree protection

- 8.1.2 Tree protection is required to prevent physical damage to the stem, branch and crown structure. Tree protection is used also to prevent indirect damage caused by loads passing over the root protection area that would otherwise cause compaction of the soil. Soil compaction reduces soil pore space, which in turn reduces; soil air, available water and nutrients, the anaerobic environment will prevent healthy and strong root growth (elongation, thickening, mycorrhizal association, etc.). Prolonged anaerobic soil conditions will lead to longer term poor tree health with symptoms (crown die back, sparse crown, poor extension growth, etc.) not evident until well after the occurrence. The simplest and most effective way to prevent damage to any retained tree on the development site is the provision of a construction exclusion zone around the tree and its calculated rooting area.
- 8.1.2 The areas for protection will see the RPA confirmed on the ground with the erection of a scaffold frame with wire mesh attached (Please see appendix 3 Barrier protection construction profile, diagram 2). Where site personnel require access across the RPA, ground protection will be installed utilising scaffold boards laid on a compressible layer (100mm of woodchip) with geotextile membrane beneath, as per British Standard 5837 section 6.2.3.3 (see appendix 5 tree protection plan). All plant will operate on composite boards / ground guards fit for the applied load to prevent soil rutting and compaction.
- 8.1.3 The barrier protection will contain and display information highlighting the protected tree and consequences of any breach of tree protection. Please see appendix 4, example of informative to be placed on barrier protection.
- 8.1.4 The tree protection plan is shown in appendix 5. This shows; the RPA for each retained tree, the location of protective barriers/ground protection and areas for site storage and contractors parking.

## 9.1 Method statements

9.1.2 Provided in this section are arboricultural method statements primarily concerned with working within the RPA of the retained trees. The method statements are designed to minimise/remove any impact or damage/disturbance that may otherwise occur. The method statements provided should be distributed to all key staff involved with the development.

## 9.2 Excavation within RPA

9.2.1 Excavation will be required within the RPA's as identified within the tree protection plan appendix 5 and the impact assessment section 5 for any proposed raft or connecting beam for the pile foundations. The method statement provided below is in accordance with British Standard 5837 section 7.2.

Sequential method statement for hand excavation and root pruning.

1. Any hard surfacing to be broken out using handheld concrete breaker and all debris hand barrowed from the RPA and stored outside of the RPA. Hard surfacing is to be broken out to the original construction depth only. Loosen topsoil / leaf litter with air spade or rake and carefully remove using hand tools (spade, shovel, spring rake, soft brush, trowel, etc) to achieve excavation depth (TBC by project structural engineer).
2. Where roots are pliable, relocate to side of pit or push downwards.
3. Any exposed roots should immediately be wrapped or covered in a slightly damp hessian cloth to prevent desiccation and to protect them from rapid temperature changes.
4. If required, sever any roots with a diameter less than 25mm (use a sharp tool to provide a clean cut across the cross section near to a root junction/growth point).

5. Avoid severing roots greater than 25mm or clumps of roots (root mats). If this is necessary then request an arboriculturist to attend the site to assess likely impact upon tree health and future stability.
6. Prior to backfilling any roots should be removed from the hessian wrapping and surrounded by sharp sand, or other loose granular fill, before soil or other material is replaced. The backfill is to be free from any contaminants or foreign objects.
7. Monitor tree health during next growth season. Check leaf colour, size, density and extension growth. Monitor again the following season.

## 9.3 Soft surfaces within RPA

9.3.1 Provided below is a method statement to avoid damaging/disturbance to the roots of the retained trees during soft landscape operations.

No tractor mounted or heavy plant rotavating machinery is to be used unless working on surface fit for purpose to reduce/spread load and prevent soil compaction.

Cultivation is to be completed using manual hand tools only.

Existing soil is to be used, where additional soil is required it should be contaminant free, well drained and suitable PH, texture and structure for the site and planting/existing trees/shrubs.

Damage to roots is to be avoided, large structural roots may be seen at or near the surface and where they radiate from the stem of the tree from large buttresses. After around 4m radial distance structural roots tend to taper to around 3cm in diameter.

Changes in ground levels are to be avoided, any lowering or raising of levels should be carried out using a suitable method statement that provides continued soil conditions of gas exchange and water percolation.



Planting is to be done with care and to avoid severing tree roots; generally, planting should be completed outside the RPA.

## 10.1 General arboricultural considerations

10.1.1 Provided in this section are wider arboricultural considerations to be used either at the later design stage or when on-site with the contracting team. Further information contained within this section provides details on tree and associated wildlife legislation. The method statements provided should be distributed to all key staff involved with the development.

## 10.2 Storage

10.2.1 There is to be no storage within the RPA of any retained trees. An outline area can be designated at pre-commencement construction site meeting.

## 10.3 Contractors parking

10.3.1 There is to be no parking within the RPA of any retained trees. An outline area can be designated at pre-commencement construction site meeting.

## 10.4 Slope

10.4.1 All mixing and storage of materials/chemicals to be done on a pre-prepared flat/level surface with sealed sides to prevent any runoff. Storage of all chemicals/materials likely to cause harm to the trees should be in a sealed container or area with a bund to prevent run off if spillages occur. Site personnel are to have access to spillage treatment equipment.

## 10.5 Services

10.5.1 Methods for service run construction within the RPA are micro tunnelling, Surface launched directional drilling, pipe ramming and impact moling, method statements for these should be provided by the relevant utility companies. Shallow trenching may be

acceptable for minor services; if shallow trenching is required then hand excavation should be adopted using an approved method statement.

10.5.2 All overhead services to be located outside the present and future crown spread of the retained trees, use tree constraints table provided in section 4 to aid design.

## 10.6 Levels

10.6.1 No stripping or raising of levels within the RPA without consent from the local authority. If site levels need to be reduced the use of hand excavation or an air spade should be adopted using an approved method statement. If site levels are to be raised the material added should allow for water infiltration and gaseous exchange allowing the roots to carry out their normal biological function, the use of structural soil and below ground aeration system may be required depending on area and depth.

## 10.7 Development phasing

10.7.1 All contracting staff working at the site should be briefed on approved working practices and protection requirements for the retained trees.

10.7.2 The tree works specification should be completed following approval from the local authority.

10.7.3 Prior to the commencing of development the chosen arboriculturist should re-assess all retained trees and provide further assessment.

10.7.4 All barrier/ground protection should be erected/laid and confirmed as correct by the arboriculturist. All signs should be placed on the barriers at a height of 2m at 3m intervals.

10.7.5 Barrier/ground protection removed after intensive phase of development.

10.7.6 Soft landscaping as final phase of development.



## 10.8 Monitoring

### 10.8.1 Site key personnel

#### Architect and Contractors

Name	Position	Contact details
Builder TBC	Site manager TBC	
Architect – Homa Design	Design consultant	[REDACTED]
ABC Planning	Planning Consultant	[REDACTED]

#### Planning Authority

Name	Position	Contact details
Tendring District Council	Tree Officer and Landscape Officer	[REDACTED]

#### Arboriculturist

Name	Position	Contact details
James Choat	Arboricultural Consultant	[REDACTED]
		[REDACTED]

10.8.2 It is recommended that all trees and protection methods be monitored for the duration of development. A qualified arboriculturist will make a regular visit; the project arboriculturist is to carry out an assessment of tree health and protection condition and make recommendations when required.

10.8.3 Site specific monitoring

Item	Number of visits required	Timing of visit
Pre-commencement site meeting with key personnel. (Contractor, site manager, architect). Tree works Tree protection installation (ground/barrier) as per tree protection plan and method statements within supplied arboricultural report. Identify area for contractors parking, site storage and access. Place 'exclusion zone' signs at 2m height, 3m intervals facing outwards on temporary fencing.	1 – 2 depending on whether items can be completed on same day.	Meeting to be arranged between architect and site manager before construction phase.
Site visit during construction phase to monitor tree health and tree protection condition. Specifically during excavation within the RPA of T2, T3, T4 and T5 for the construction of the proposed foundations and proposed path within RPA of T3.	8 (3 specifically at times when excavating within the RPA as detailed for the construction of foundations)	During construction phase
Removal of tree protection.	1	After intensive construction phase

10.8.4 The above is subject to the client/site manager informing the project staff of the proposed date for each development activity. Following each site visit a brief report (see appendix 6 pro forma) to be sent to the client and local authority within 24 hrs following the visit. Any incidents will be dealt with within 2 hours and to be reported to the project arboriculturist, photos to be provided via email and recommendations provided verbally, if required a site visit should be undertaken to provide further advice/recommendations.

10.9 Incidents/variations

10.9.1 Planned

- Site manager to contact arboriculturist for any anticipated/planned variations
- Arboriculturist to assess impact upon trees and offer advice regarding alternative methods
- Arboriculturist to update tree officer providing details of variations

10.9.2 Non-planned

- Site manager to inform arboriculturist of incident
- Site manager to photograph incident and send to arboriculturist

Arboriculturist to provide initial advice via telephone or email

Arboriculturist to make site visit within 1 day to assess impact upon trees and offer advice to reduce/remove impact

Arboriculturist to update the local authority tree officer providing details of incident and measure taken to reduce/remove impact.

## 10.10 Wildlife legislation

10.10.1 The planning applicant should be mindful of the Wildlife and Countryside Act 1981, The Habitats Directive 1994 (consolidated under Conservation of Habitats and Species Regulations 2017) and The Countryside and Rights of Way Act 2000. These acts protect certain species of flora and fauna; it is an offence to intentionally or recklessly destroy species or habitats contained within these acts. Trees, especially veteran or ancient, can support associated flora and fauna that is protected via the above legislation. It is recommended the applicant employ a suitably qualified ecologist to carry out a survey of the area to ensure no offence is committed. See the following link for further details. <https://www.gov.uk/guidance/protected-species-how-to-review-planning-applications>

## 10.11 Tree legislation

10.11.1 Before any tree works commence at this site it is recommended that written consent be obtained from the local authority. It is an offence to cut down, uproot, lop, top, or cause wilful damage or destruction to a tree subject of a tree preservation order or conservation area. Such acts will lead to prosecution and if convicted a fine not exceeding £20,000 in the magistrate's court; if the case is referred to the crown court the fine may be unlimited. See the following link for further details. <https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas>

10.11.2 Hedgerow regulations 1997 protect certain hedgerows from being removed (grubbed out), certain exemptions apply. A removal notice is required to be sent to the local authority before removing a hedgerow subject of the above regulations. See the

following link for further details.

<http://www.legislation.gov.uk/uksi/1997/1160/contents/made>

10.11.3 Forestry Act 1967 as amended - Felling licences are issued by the forestry commission, certain exemptions apply, you should check with the Forestry Commission that a licence is not required before felling trees. See the following link for further details.

<http://www.legislation.gov.uk/ukpga/1967/10/contents>

## 11.1 Conclusion

### 11.1.1 All surveyed trees have been categorised in accordance with British Standard 5837 2012.

Trees T1, T2, T3 and T4 are prominent tree features and provide high visual amenity value, they are mature trees and would have formed part of the historical highway ditch and hedge line, the landscape and historical value is considered high. T3 and T4 oak trees are native, mature specimens and as such likely to provide high insect associations and good number of microhabitats, the wildlife value is considered high. Unfortunately, the condition of T3 and T4 is slightly impaired due to crown die back and deadwood, likely due to a slow decline following change in environment (ditch filled). Crown works will be required to maintain the trees in proximity to the highway. T1 and T2 Lime have recently been pollarded (within the last 20 years), the pollard stems are now starting to compete and crown reduction works are recommended to reduce the load at the pollard head whilst retaining a high crown and the visual amenity. The remaining trees are to the rear of the site, the amenity and landscape value is limited, the wildlife value is reasonable due to the number of native specimens and close connectivity providing good structural diversity used for species navigation, migration, foraging and breeding.

11.1.2 Trees T6 and H3 are recommended to be removed due to poor condition, the loss of these low value specimens will not have a negative impact upon visual tree amenity or loss to local landscape character, the trees are situated to the rear of the site and are relatively small specimens (5m in height), they cannot be seen from any significant public vantage point. Crown works are recommended to trees T1, T2, T3 and T4 to improve their structural condition and remove large diameter deadwood that may fail.

11.1.3 Excavation is required within the RPA of T2, T3 and T4, for the construction of the proposed foundations (TBC be project structural engineer, assumed to be a piled design) and the proposed path within the RPA of T3 (max depth of 50mm for preparation purposes only). A method statement is provided for hand excavation and root pruning within the RPA.

11.1.4 The retained trees can be protected by means of temporary barriers in accordance with BS 5837 2012 and existing hard surfacing to protect the roots whilst allowing continued

access to the site. Following development, the trees will not be further obscured and therefore the development is considered to have a low impact upon visual amenity value.

11.1.5 Tree protection and method statements have been provided within this report to reduce the risk of direct and indirect development related damage that may otherwise occur to the retained trees. In conclusion, assuming the method statements and tree protection are implemented as part of the development, the proposal can be constructed with reduced disturbance to the trees.