

BS 5837 Arboricultural Report

& Impact Assessment



at
71 Peppard Road
Caversham
Reading
RG4 8NH

Dated
15th August 2024



CROWN
Tree Consultancy

Branching out through England and Wales

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1. Introduction

1.1. Instruction

1.1.1. We are instructed by Bruno Giamattei to:

- Undertake a Tree Survey to BS 5837 at 71 Peppard Road and assess all trees potentially within influencing distance of proposed development within the site.
- Plot the trees on a Tree Constraints Plan and record the data in a Tree Data Schedule.
- Provide preliminary management recommendations for the tree stock (independent of development proposals).
- Assess the potential impact of the development proposals and provide guidance as to appropriate mitigation measures.
- Produce an Arboricultural Impact Assessment for submission to the local authority.
- Produce a Tree Protection Plan showing locations of tree protection barriers and where ground protection will be required.

1.2. Purpose of this Report

- 1.2.1. This report is produced according to the guidance and recommendations within BS 5837: 2012 - *Trees in Relation to Design, Demolition, and Construction*. It is tailored to accompany a planning application. It assesses the impact of all proposed construction works on the tree population. Tree removal, canopy pruning, and the impact upon roots from various groundworks are all considered in detail. Best practice mitigation is specified wherever appropriate.
- 1.2.2. Consideration is also given to the impact of the changed juxtaposition between trees and buildings and how that may influence future tree management.
- 1.2.3. This document should not be used to inform management decisions relating to liability or risk management. Such decisions should be based on a more detailed inspection of the trees than was carried out for this report.

1.3. References

- 1.3.1. We have liaised with the project architect to attain an adequate understanding of the project to enable us to carry out an accurate assessment of the proposals.

1.4. Author

- 1.4.1. This report was compiled by Emma Hoyle FDS (Arboriculture), ED (Forestry & Arboriculture), M. Arbor. A. Emma's resumé can be found in Appendix 3.

2.3. Survey Extent

- 2.3.1. The area indicated below¹ shows the extent of the survey. Our survey included all trees within the curtilage of the property and those adjacent to it.



2.4. Summary of Observations

- 2.4.1. Number 71 Peppard Road is a detached, residential property with gardens to the front and rear.
- 2.4.2. Within the curtilage of the site, we identified a Retention Category A tree (T11), three Retention Category B trees (G8), five Retention Category C trees (T2, T4, T5, T14 and T15) and a Retention Category C hedge (H13).
- 2.4.3. Beyond the curtilage of the site, we identified a Retention Category A tree, four Retention Category B trees, seven Retention Category C trees.
- 2.4.4. The Tree Constraints Plan and Tree Data Schedule (see Appendix 4) should be referred to for descriptions and locations of all trees.

¹ Image taken from Google Earth and may not be current

3. Vegetation Overview (independent of proposals)

This section summarises all the recommendations within the Tree Data Schedule regardless of whether trees are to be retained, felled or pruned to facilitate the proposed development. It does not specify works that may be required to facilitate the development proposals.

3.1. Preliminary Management Recommendations

- 3.1.1. The following recommendations are made in order to maintain the trees in an acceptable condition:
- 3.1.2. T5 is a mature Ash tree which is exhibiting symptoms of an infection of Ash dieback. T5 considered to be in an acceptable condition at present but it is recommended that the trees condition be monitored.
- 3.1.3. T11 is a mature Sycamore with significant deadwood overhanging the footpath beneath. It is recommended that the deadwood be removed. This should be prioritised as indicated on the Tree Data Schedule.
- 3.1.4. All other trees were deemed to be in satisfactory condition.

3.2. Work Priority and Future Inspections

- 3.2.1. The table below suggests a schedule for completing the works recommended in the Tree Data Schedule based on the perceived risk. **Where funds permit, works should be undertaken sooner, though it is not recommended that the timescales below are extended.**

Work Priority	Definition	Tree Number
Urgent	As soon as possible	None
Very High	Within 1 Month	None
High	Within 3 Months	T11
Moderate	Within 1 year	T5
Low	Within 3 years	None

- 3.2.2. The table below suggests a schedule of future inspections based on the condition and location of each tree:

Inspection Frequency (years)	Tree Number
0.5	None
1	T3, T5, T11 and T16
1.5	G8
3	T1, T2, T4, T6, G7, T9, T10, T12, H13, T14, T15, G17 and T18

- 3.2.3. The trees should be inspected sooner if there is a noticeable decline in their condition or following extreme weather events.

3.3. Species Present – Additional Information

- 3.3.1. The table below contains general information about the tree species (rather than the actual tree specimens) included in the survey. Its purpose is to assist readers who are unfamiliar with the characteristics of the various species.

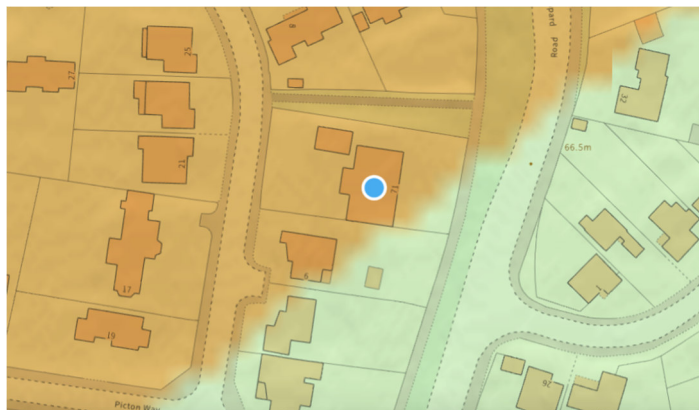
Species	Typical Height at Maturity (m)	Typical Canopy Spread at Maturity (m)	General Notes
Ash	25	18	Large deciduous tree with a straight bole and a high open domed crown. Native to Britain and commonly found in woodlands and adjacent roadsides. Not suitable for small gardens. Easily identified by its oppositely arranged pinnate leaves and black buds. Branches are relatively brittle resulting in a fairly high incidence of small branch failure in windy conditions. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Fraxinus+excelsior for more info.
Beech	25	18	Deciduous tree native to W and S Europe. Does not have resilient heartwood, therefore typically lives for 100 - 150 years before decay may cause structural failure if unmanaged. Can be an extremely attractive tree at maturity due to its size and majesty. Young branches may retain their foliage through winter as is evidenced in beech hedges. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Fagus+sylvatica for more info.
Cherry	8	10	Many cultivars available, bred for their abundance of spring flowers, edible cherries or ornamental bark (e.g. Tibetan Cherry). Usually white or pink flowering, often in very early spring. Usually with a single bole to around 2.5m and multi-stemmed thereafter. Most varieties have excellent autumn colour.
Horse Chestnut	25	18	Deciduous tree native to Albania and N Greece. Naturalised throughout the UK. Iconic landscape tree. Susceptible to attack by Bleeding Canker, as well as Leaf Miner and Leaf Blotch. Should be inspected regularly if located close to high public use areas. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Aesculus+hippocastanum for more info.
Monterey Cypress	40	12	Evergreen, narrow, upright tree native to California. Very rapid growing, especially in W. Britain – may reach mature height in 40 years. Once planted as a hedge but now superseded by its offspring Leyland cypress. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Cupressus+macrocarpa for more info.
Norway Maple	25	16	Deciduous tree native to S. Norway, S. Sweden and across Europe. Red buds and light brown grooved bark distinguish it from sycamore in winter. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Acer+platanoideis for more info.
Oak	22	18	Deciduous, long-lived tree native and common throughout Europe with very durable timber. Excellent habitat tree - provides food and shelter for thousands of native species. Can be very attractive as a mature open grown specimen though not particularly ornamental, having no autumn colour or showy flowers. Responds well to pruning. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Quercus+robur for more info.
Plum	6	8	Small fruit tree. Many varieties available. Usually white flowering. Fruits may be green, yellow, red or dark purple. Often quite an untidy looking tree.
Sycamore	25	16	Deciduous tree native to S. Europe, widely naturalised in the UK. Often regarded as a weed species due to its invasive nature and ability to tolerate most conditions. Responds well to pruning. Not a good tree to park beneath in summer due to the sticky sap secreted by aphids. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Acer+pseudoplatanus for more info.
Western Red Cedar	50	14	Fast growing broadly conical evergreen tree, native to N. W. America. Differentiated from cypresses by the shape of its cones. Crushed leaves smell of pineapple. Good hedging species. Prized by native Americans for a multitude of medicinal and other uses. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Thuja+plicata for more info.
Whitebeam	35	9	Deciduous tree native throughout Europe. Naturalised in Britain on chalk and sandy soils. Good autumn colour and summer berries. Often planted as a street tree. Usually single stemmed becoming multiple-stemmed at 2m. Many cultivars available. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Sorbus+aria for more info.
Willow	20	18	Fast growing deciduous tree with many different species which often hybridise. A high-water demand tree which is often implicated in subsidence cases. Most willows have little ornamental value due to their lack of noticeable flowers, sizeable fruits autumn colour or ornamental bark.
Yew	14	12	Evergreen species native throughout Europe. Commonly planted in churchyards. Once revered by ancient Britons and thought to be the inspiration for our Christmas tree. Capable of remarkable regeneration and extreme longevity. Poisonous foliage and seeds. Slow growing. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Taxus+baccata for more info.

The figures quoted regarding typical height and canopy spread should be treated as approximate. Actual heights and spreads vary according to several environmental factors such as soil conditions, climate, and the presence of competing vegetation. The figures quoted are not the maximum dimensions that the species may attain.

4. Local Geology and Soils

4.1. Desktop Research

- 4.1.1. Desktop research into local geology based on the postcode **RG4 8NH** obtained the following results:

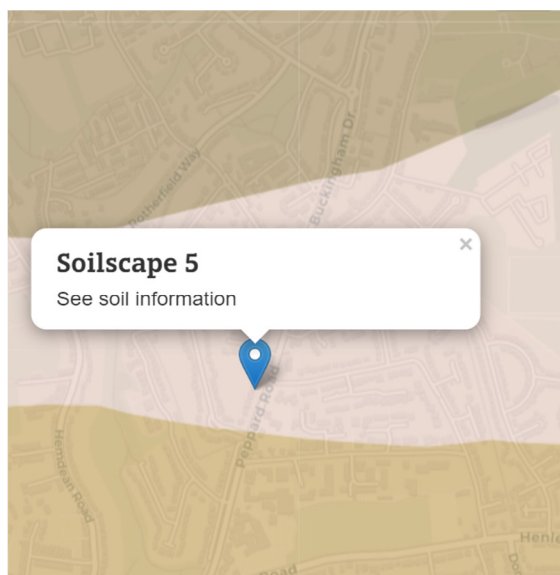


Geology

Bedrock geology

Lambeth Group - Clay, silt and sand. Sedimentary bedrock formed between 59.2 and 47.8 million years ago during the Palaeogene period.

Source: https://geologyviewer.bgs.ac.uk/?_ga=2.100849601.17774785.1660229567-1737936254.1660229567



Source <http://www.landis.org.uk/soilscapes/>

Soilscape 5:

Freely draining lime-rich loamy soils

Texture:

Loamy

Coverage:

England: 3.7%, Wales: 0.0%, England & Wales: 3.2%

Drainage:

Freely draining



4.2. Site Investigations

- 4.2.1. We are unaware of any specific investigations into soil properties at the site.

4.3. Conclusion and Relevance

- 4.3.1. Based on the information reproduced in Section 3.1, local soils are assumed to have a loamy texture.
- 4.3.2. Loamy soils contain a mixture of clay and sand. Soil compaction may occur due to vehicular activity on building sites, so ground protection is recommended wherever vehicles operate. Most tree species will grow well in loamy soils.

5. Arboricultural Impact Assessment

5.1. Overview

5.1.1. It is proposed to demolish the existing outbuilding and construct a new detached outbuilding on a slightly larger footprint, as indicated on the drawings in Appendix 4. The existing layout is indicated in black, and the footprint of the proposed layout is indicated in pink.

5.1.2. The table below summarises the potential impact on trees due to various activities.

Activity	Trees Potentially Affected
Tree Removal	None
Tree Pruning	None
RPA: Building Foundations	T18
RPA: Other Foundations	T18
RPA: New Hard Surface	None
RPA: Replace Existing Hard Surface	None
RPA: Underground Services	None Anticipated
RPA: Change of Ground Levels	None
RPA: Soil Compaction	Trees adjacent the construction area (preventable by installing tree protection measures)

5.1.1. Other potentially damaging activities often associated with construction sites include demolition or the careless use of plant machinery, hazardous materials, or fires. All of the above potential impacts are considered in detail throughout this Section.

5.2. Tree Removal

5.2.1. All trees are to be retained.

5.3. Tree Pruning

5.3.1. No pruning works are required to facilitate the installation of the proposed outbuilding.

5.3.2. The proposed height of the eaves is slightly lower than the eaves of the existing outbuilding.

5.4. Impact of Foundations

Building Foundations

5.4.1. The foundations for the new outbuilding extend into the edge of the theoretical Root Protection Area of T18.

5.4.2. Approximately 2% of the Root Protection Area shall be affected which is considered to be very minor. However, to ensure minimal impact, it is proposed to use hand tools only when excavating within the Root Protection Area. Any roots growing close to the edge should be kept intact or neatly pruned using clean, sharp hand tools.

Other Foundations

5.4.3. A new retaining structure is proposed adjacent to the outbuilding; an existing retaining timber structure is currently in place adjacent the existing outbuilding; this is to be extended in similar timber materials.

- 5.4.4. Approximately 1.5% of the Root Protection Area shall be affected, which is also considered to be very minor. To ensure minimal impact, it is proposed to use hand tools only when excavating within the Root Protection Area. Excavation shall not exceed the footprint of the proposed wall and the soils beyond it shall remain undisturbed.
- 5.4.5. These measures shall ensure that the combined impact of the proposed outbuilding and retaining structure (circa 3.5% of the RPA) shall be minimal. The potential impact is considered to be within tolerable limits and shall have no long-term detrimental impact on the health of T18.

5.5. Impact of Surfacing

- 5.5.1. If the existing gravel surface around the existing outbuilding is to be extended around the rear of the proposed outbuilding, gravel shall be laid with little to no further excavation beyond the removal of loose soil.

5.6. Underground Services

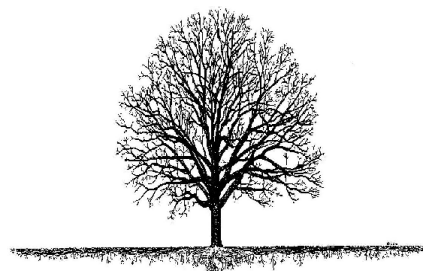
- 5.6.1. We are not aware of any new underground services that are to be installed; however, there is ample opportunity to install any required underground services outside of Root Protection Areas.

5.7. Changes in Ground Levels

- 5.7.1. No further changes to ground levels (in addition to the new retaining structure) are proposed over Root Protection Areas.

5.8. Soil Compaction

- 5.8.1. The majority of tree roots lie within the upper soil horizons. This is because the availability of oxygen decreases with depth, and roots need to breathe to stay alive. In addition, nutrients are more readily available in the form of organic matter close to the soil surface.
- 5.8.2. Healthy soils contain about 25% air space between solid particles. Increased loading of the soil caused by construction activity causes air to be squeezed out as the soil becomes compacted, preventing roots from breathing. Even an increase in pedestrian activity may cause some soil compaction.
- 5.8.3. It is important, therefore, that ground compaction and soil disturbance over Root Protection Areas should be avoided during the construction phase. Where access is required over Root Protection Areas, suitable ground protection measures must be installed.



5.9. Demolition Activities

- 5.9.1. Care is required to avoid damaging trees when demolishing the existing outbuilding. Any existing walls and surfaces should be demolished onto the existing footprint or pulled in a direction away from the nearby trees.

5.10. Waste and Materials Storage

- 5.10.1. All hazardous materials (including cement and petrochemical products) will need to be controlled according to COSHH regulations in order to ensure there is no detrimental impact on tree health. Provision shall need to be made to ensure that cement spillage avoids all Root Protection Areas.
- 5.10.2. Areas designated for the storage of building materials and waste products will need to be approved by the local authority. Root Protection Areas should be avoided. Where this is not possible, suitable ground protection measures will need to be installed.

5.11. Cabins and Site Facilities

- 5.11.1. Any cabins and welfare facilities should be located outside of Root Protection Areas wherever possible. Otherwise, the project arborist should be consulted, and approval obtained from the local authority.

5.12. Boundary Treatments

- 5.12.1. No changes are proposed to the existing boundary features that might impact trees.

5.13. Impact of Retained Trees on the Development

- 5.13.1. Some occasional trimming of the canopies of T1 and T2 will be required in the future to maintain an appropriate distance from the proposed outbuilding roof. However, the proposal does not significantly alter the current juxtaposition between outbuildings and trees, so there should be no post-development pressures to overly prune or remove them.
- 5.13.2. The foundations and any new surfaces should be designed to accommodate all potential impacts due to future tree-rooting activity. These include potential vegetation-related subsidence, vegetation-related heave, and lifting of surfaces / light structures due to direct root pressure.

5.14. Arboricultural Method Statement

- 5.14.1. BS 5837 recommends that a detailed methodology is agreed in the form of an Arboricultural Method Statement, which shall ensure that trees are well protected during the construction phase. This should detail all tree protection measures and limitations on construction activity. All of the issues raised within this Impact Assessment should be covered by the Method Statement.

6. Photographs

Refer also to the Tree Constraints Plan for photo locations.

Photo 1.



Photo 2.



Photo 3.



Photo 4.



Photo 5.



Photo 6.



Photo 7.



Photo 8.



Photo 9.



Photo 10.



Appendix 1: BS 5837: 2012 – Interpretation Guide

This Standard prescribes the principles to be applied to achieve a satisfactory juxtaposition of trees and structures. It sets out to assist those concerned with planning applications to form balanced judgments.

Stage 1: Survey Details and Notes

A ground-level visual survey is undertaken. Only trees with a stem diameter over 75mm, which lie within the site boundary or relatively close to it, are included.

Where applicable, trees with significant defects are highlighted and appropriate remedial works are recommended.

Wherever practicable dimensions are obtained using diameter tapes, logger's tapes, distometers and clinometers. Where obstacles prevent accurate measurement, dimensions are estimated. Trees on privately owned third-party land are surveyed from the best available vantage point and observations relating to the condition of these trees should be treated accordingly. All height measurements should be regarded as approximate.

Data is recorded for each tree and is presented in a Tree Data Schedule. Each tree is allocated a **Retention Category** according to its size, amenity value, condition, and safe useful life expectancy. The categories are allocated independently of development proposals. Our interpretation of the Retention Categories is explained below:

Retention Categories

A Category: Trees of high quality and amenity value. Usually, mature trees with a significant life expectancy which would enhance any development. Retention of these trees is strongly encouraged.

B Category: Trees of moderate quality and amenity value. Usually these are maturing trees or younger trees with exceptional form. Retention of these trees is desirable though the removal of occasional specimens may be acceptable.

C Category: Trees of low quality or small specimens with a relatively low amenity value. These trees are not considered to be a material planning constraint and their removal will generally be seen as acceptable in order to facilitate development.

U Category: Trees of such low quality that their removal is recommended regardless of development proposals.

Occasionally trees are borderline and do not fall neatly into one of these categories. In such cases we apply a superscript (+/-) such that:

C+ Indicates borderline C/B, though Category C is deemed to be most appropriate.

B- Indicates borderline C/B, though Category B is deemed to be most appropriate.

The British Standard suggests that each of the A, B and C categories may be further subdivided (A1, A2, A3, B1, B2, B3 etc) such that subcategory 1 denotes mainly arboricultural values, subcategory 2 denotes mainly landscape values and subcategory 3 denotes mainly cultural values (including conservation). Multiple subcategories may be used.

Our experience suggests that these subdivisions lack clarity and can be confusing. Within this report subcategories are **not** denoted. Where appropriate, the use of phrases such as '*Part of a formal group*', or '*Has a high ecological value*', or '*Offers good screening to the site*' are incorporated into the observation section of the Tree Data Schedule. We believe this conveys all relevant landscape and cultural information without any confusion.

Tree Constraints Plan (TCP). This indicates the position, crown spread, Retention Category and Root Protection Area of each tree. It is used to inform where development may proceed without causing damage to trees.

Root Protection Area (RPA). This is the area around each tree likely to contain the majority of roots. It should ideally remain undisturbed to avoid a detrimental impact on tree health. For single stemmed trees It is calculated according to the formula "radius of RPA" = "12 x stem diameter". Where a tree has more than one stem, the equivalent-single-stem diameter is usually recorded. This is calculated by adding the squares of the stems and then finding the square root of this total. The radius of the Root Protection Area is then calculated by multiplying the equivalent-stem-diameter by 12.

Stage 2: Arboricultural Impact Assessment

After the initial survey and the production of the Tree Constraints Plan, arborists and designers are encouraged to work together to establish a design proposal with minimal impact on the high-quality trees. An assessment should be made of all possible impacts including the impact that the trees may have on the proposal. The arborist may recommend mitigation strategies to minimise these impacts and help achieve a more harmonious juxtaposition between buildings and trees.

Stage 3: Arboricultural Method Statement

This type of report specifies the measures necessary to protect trees against damage from construction activity. The Method Statement should be written in a manner that it may be conditioned and enforced by the local authority upon granting of planning permission. The site manager should be familiar with all aspects of the Method Statement and should ensure that all persons working on the site are aware of those aspects which appertain to their work. This includes service installation engineers and operators of plant machinery.

Appendix 2: Glossary of Tree Data

This section explains the terms used in the **Tree Data Schedule** (see Section 3 and Appendix 4).

A2.1 General Observations

Numbering System:	Each item of vegetation has its own unique number prefixed by a letter such that T1=Tree 1, G2=Group 2, H3=Hedge 3 and W4=Woodland 4, S5=Shrub 5.
Age Categories:	
Young	Usually less than 10 years old.
Semi-Mature	Significant future growth to be expected, both in height and crown spread (typically below 30% of life expectancy).
Early-Mature	Full height almost attained. Significant growth may be expected in terms of crown spread (typically 30-60% of life expectancy).
Mature	Full height attained. Crown spread will increase but growth increments will be slight (typically 60% or more of life expectancy).
Veteran	A level of maturity whereby significant management may be required in order to keep the tree in a safe condition.
Over Mature	As for veteran except management is not considered worthwhile.
Species:	Common names and Latin names are given.
Height:	Measured from ground level to the top of the crown.
Stem Diameter:	Taken at 1.5m above ground level where possible. On multi-stemmed trees this measurement may be taken at ground level, though usually an indication of the number of stems and average diameter is given, e.g. 3 x 30cm.
Crown Height:	Measured from ground level to the height at which the main crown begins. Where the crown is unbalanced it is measured on the side deemed to be most relevant. This is usually the side facing the area of anticipated development.
Tree Diagram:	This scaled drawing is computer generated based on measurements taken for stem diameter, crown height and spread, and overall height. It is designed to help the reader rapidly assess the data. It is not an accurate representation of the form of the tree.
Crown Spread:	Measured N, E, S & W, taken from the centre of the stem and usually rounded up to the nearest metre.
Observations:	If a tree's position is considered to be relevant it will be commented upon (e.g. overhanging a children's play area). Tree form and pruning history are also recorded along with an account of any significant defects. Defects and descriptive terms are dealt with in more detail at the end of this section.
Recommendations:	Usually based on any defects observed and intended to ensure that the tree is in an acceptable condition.
Priority Scale:	Depending upon the threat posed by the tree, and the likelihood of failure, recommendations should be carried out according to the following priority scale:
Urgent	To be carried out as soon as possible.
Very High	To be carried out within 1 month.
High	To be carried out within 3 months.
Moderate	To be carried out within 1 year.
Low	To be carried out within 3 years.
	Where funds permit, works should be undertaken sooner, though it is not recommended that the timescales above are extended.
Inspection Frequency:	An interval of 6 months, 1 year, 1.5 years or 3 years is allocated before the next inspection is due. Wherever practical, consideration should be given to seasonal changes so that deciduous trees are not always surveyed in winter when they have no leaves, or in summer when leaves may obscure branches within the upper crown.
Vigour:	An indication of growth rate and the tree's ability to cope with stresses:
High	Having above average vigour.
Moderate	Having average vigour.
Low	Having below average vigour.
Very Low	Tree is struggling to survive and may be dying.
Physiological Condition:	
Good	Healthy and with no symptoms of significant disease.
Fair	Disease present or vigour is impaired.
Poor	Significant disease present or vigour is extremely low.
Very Poor	Tree is dying.
Structural Condition:	
Good	Having no significant structural defects.
Fair	Some defects observed though no high priority works are required.
Poor	Significant defects found. Tree requires monitoring or remedial works.
Very Poor	Major defects which will usually require significant remedial works or tree removal.
Amenity Value:	
Very High	Exceptional specimen, observable by a large number of people.
High	Attractive specimen, observable by a significant number of people.
Moderate	One of the above factors is not applicable.
Low	Unattractive specimen or largely hidden from view.
Life Expectancy:	The estimated number of years before the tree may require removal. Classified as (<10), (10 – 20), (20 – 40), or (40+).
Retention Category:	These are explained in detail in Appendix 1.

A2.2 Evaluation of Defects

Cavities, wounds, deadwood etc are all evaluated as follows:

Major	Such that structural integrity is, or will become, compromised and the tree is, or will inevitably become, hazardous.
Significant	A defect that may over time become a major defect, though not necessarily so. This will depend on the vigour of the tree and its ability to deal with decay etc.
Minor	A defect that is unlikely to develop into a major defect.

Appendix 3: Arborist's Qualifications

Qualifications & Experience of Emma Hoyle FDS (Arboriculture), ED (Forestry & Arboriculture), M. Arbor. A.

Emma is a qualified Arboricultural Consultant educated to Level 5 in Arboriculture at Askham Bryan College, is a professional member of the Arboricultural Association and is a LANTRA-accredited *Professional Tree Inspector*. She has worked for Crown Consultants since 2015 and has since written numerous reports relating to all aspects of arboriculture including; planning and development, vegetation-related subsidence, tree preservation orders and tree risk assessment. Emma regularly attends seminars and events in order to keep abreast with current knowledge and best practice in Arboriculture.

Prior to becoming an arboricultural consultant, Emma worked for two reputable tree surgery firms from 2008 and became an NPTC Qualified tree surgeon after completing a Level 3 Extended Diploma in Forestry and Arboriculture at Askham Bryan College. Emma also has experience in other areas of arboriculture such as forest clearance, tree planting, tree maintenance and landscaping.

Qualifications & Experience of Carl Lothian – BSc (Hons) (Arboriculture).

Carl began his career undertaking a Level 3 extended diploma in arboriculture and forestry at Merrist Wood College in 2015. Upon completion of his diploma, Carl worked with several tree surgery firms completing a range of arboricultural works. In 2018 Carl began his BSc (Hons) in arboriculture and urban forestry, graduating with a first-class degree and attaining the Institute of Chartered Foresters student of the year award.

After graduating, Carl worked as a TreeRadar technician where he carried out tree root and decay surveys with specialist ground-penetrating radar equipment. During this time Carl was fortunate enough to work at prestigious sites, such as the Palace of Westminster and the National Maritime Museum.

Whilst working at Crown, Carl has undertaken a range of tree surveys and written reports relating to development, safety, subsidence, and decay detection. Carl is a professional member of the Consulting Arborist Society and an associate member of the Institute of Chartered Foresters.

Appendix 4: Tree Data Schedule and Drawings

The Tree Data Schedule and any drawings accompanying this report follow this page. They are also provided as separate documents for ease of printing and screen viewing.

Reference G = Group H = Hedge	Age & Species	Height (m)	Crown Ht (m)	Diameter (cm)	Crown Spread (m) N W E S	Scaled Tree Diagram (m)	Notes	Recommendations (Independent of any development proposals)		Vigour	Amenity Value
										Physiological Condition	Life Expectancy (yrs)
								Priority	Inspect Freq (yrs)	Structural Condition	Retention Category
T1	Semi-Mature Honey-locust Gleditsia triacanthos.	7.5	2	20	3 3.5 6		Position: Situated on raised ground, retained by timber sleepers. Form: Twin-stemmed at 3m with a balanced crown. History: Occasional pruning wounds due to crown lifting. Defects: No significant defects observed.	No action required.		Moderate Good Good	Low 40+ C +
								n/a	3		
T2	Semi-Mature Norway Maple Acer platanoides.	9	2	18	3 3 4		Position: Situated on raised ground, retained by timber sleepers. Form: Single stemmed and vertical with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects.	No action required.		Moderate Good Good	Low 40+ C +
								n/a	3		
T3	Mature Plum Prunus sp.	11	2	50	5 4.5 6.5		Position: Situated on third party land. Form: Multi-stemmed. History: Multiple pruning wounds due to crown lifting. Defects: No significant defects observed. Other: Limited inspection, dimensions estimated.	No action required.		Moderate Good Fair	Low 10-20 C
								n/a	1		
T4	Semi-Mature Beech Fagus sylvatica.	10	1.5	36	4 4 4		Form: Twin-stemmed at ground level with a balanced crown. History: Previously topped at 2m. Defects: No significant defects observed. Other: Recorded stem diameter is equivalent for two stems (22cm, 29cm).	No action required.		Moderate Good Good	Low 40+ C
								n/a	3		
T5	Mature Ash Fraxinus excelsior.	18	4	71	8 8 8		Form: Twin-stemmed at 6m with a balanced crown. History: Reduced. Defects: Scattered dead twigs - symptoms of ash dieback.	Monitor.		Low Fair Good	Moderate 10-20 C
								Moderate	1		
T6	Mature Plum Prunus sp.	10	2	50 @ Base	5 5 5		Position: Situated on third party land. Form: Multi-stemmed at 2m with a balanced crown. History: Multiple pruning wounds due to crown reduction. Defects: No significant defects observed. Other: Limited inspection, dimensions estimated.	No action required.		Moderate Good Fair	Low 10-20 C +
								n/a	3		
G7	Semi-Mature Willow Salix sp.	av 7.5	av 2	av 20	av 3.5 3.5 3.5 each		Position: Situated on third party land. Form: Two close growing specimens. History: Previously topped. Defects: No significant defects observed. Other: Limited inspection, dimensions estimated.	No action required.		Moderate Good Good	Low 40+ C
								n/a	3		

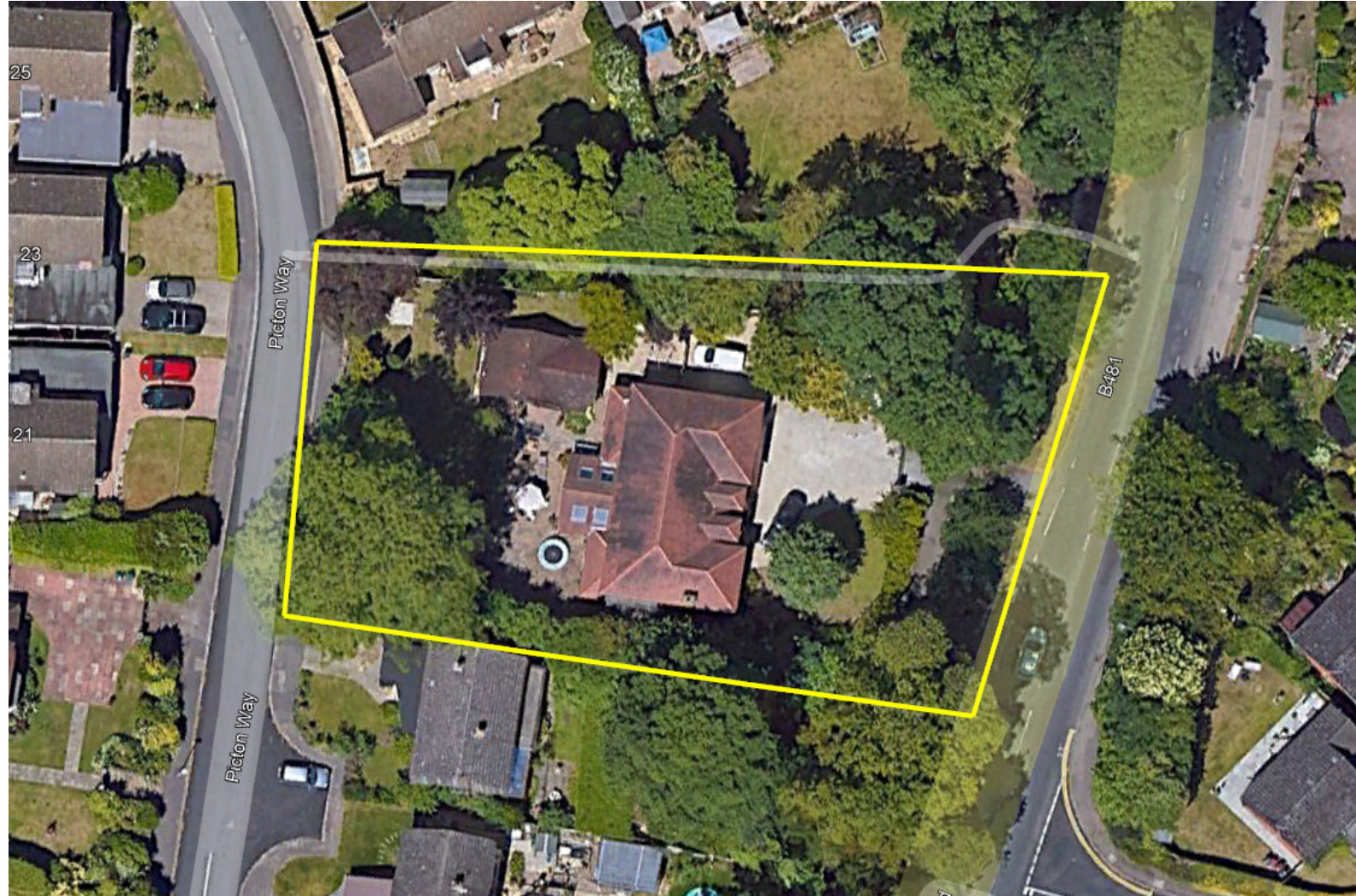
Reference G = Group H = Hedge	Age & Species	Height (m)	Crown Ht (m)	Diameter (cm)	Crown Spread (m) N W E S	Scaled Tree Diagram (m)	Notes	Recommendations (Independent of any development proposals)		Vigour	Amenity Value
										Physiological Condition	Life Expectancy (yrs)
								Priority	Inspect Freq (yrs)	Structural Condition	Retention Category
G8	Early-Mature Yew Taxus baccata.	av 13	av 5	av 40	av 3 3-5 5 4 each		Form: Three close growing specimens. History: Multiple pruning wounds due to crown lifting. Defects: No significant defects observed.	No action required.		Moderate Good Good	Moderate 40+ B
								n/a	1.5		
T9	Early-Mature Western Red Cedar Thuja plicata.	12	1.5	38	3 3 3		Position: Situated on third party land. Form: Single stemmed and vertical with a narrow, upright habit. History: No evidence of significant pruning. Defects: No significant defects. Other: Limited inspection, dimensions estimated.	No action required.		Moderate Good Good	Moderate 40+ B
								n/a	3		
T10	Early-Mature Yew Taxus baccata.	10	1.5	35	4.5 3 4.5 3		Position: Situated on third party land. Form: Multi-stemmed. History: No evidence of significant pruning. Defects: No significant defects. Other: Limited inspection, dimensions estimated. Recorded stem diameter is equivalent for three stems (20cm, 18cm, 23cm).	No action required.		Moderate Good Good	High 40+ B
								n/a	3		
T11	Mature Sycamore Acer pseudoplatanus.	22	10	81	7 8 6 6		Form: Single stemmed and vertical with a slightly unbalanced crown. History: Occasional pruning wounds due to crown lifting. Defects: Significant dead wood over the footpath.	Remove dead wood.		Moderate Good Good	High 40+ A
								High	1		
T12	Mature Sycamore Acer pseudoplatanus.	16	2.5	67	7 7 7 7		Position: Street tree. Form: Single stemmed and leaning with a balanced crown. History: Occasional pruning wounds due to crown lifting. Defects: No significant defects observed.	No action required.		Moderate Good Good	Moderate 40+ B +
								n/a	3		
H13	Semi-Mature Monterey Cypress Cupressus macrocarpa.	3	0.5	10	1.5 1.5 1.5 1.5		Form: Row of cypress trees. History: No evidence of significant pruning. Defects: No significant defects.	No action required.		Moderate Good Good	Moderate 40+ C
								n/a	3		
T14	Semi-Mature Cherry Prunus sp.	4	1.5	12	2 2 2 2		Form: Twin-stemmed at 2m with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects.	No action required.		Moderate Good Good	Low 40+ C
								n/a	3		

Reference G = Group H = Hedge	Age & Species	Height (m)	Crown Ht (m)	Diameter (cm)	Crown Spread (m) N W E S	Scaled Tree Diagram (m) 	Notes	Recommendations (Independent of any development proposals)		Vigour	Amenity Value
								Priority	Inspect Freq (yrs)	Physiological Condition	Life Expectancy (yrs)
										Structural Condition	Retention Category
T15	Semi-Mature Whitebeam Sorbus aria.	10	2.5	24	4 4 4		Form: Twin-stemmed at 2m with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects.	No action required.		Moderate Good Good	Moderate 40+ C +
	n/a							3			
T16	Mature Horse Chestnut Aesculus hippocastanum.	19	1.5	96	5 7 5		Position: Street tree. Form: Twin-stemmed at 2m with a balanced crown. History: Occasional pruning wounds due to crown lifting. Defects: No significant defects observed.	No action required.		Moderate Fair Fair	High 20-40 B
	n/a							1			
G17	Semi-Mature Oak Quercus robur.	av 6	av 1.5	av 18	av 3.5 3.5 3.5 each		Position: Street trees. Form: Two close growing specimens. History: No evidence of significant pruning. Defects: No significant defects.	No action required.		Moderate Good Good	High 40+ C
	n/a							3			
T18	Mature Bean Tree Catalpa sp.	11	2.5	80	6.5 6.5 6.5		Position: Situated on third party land. History: No evidence of significant pruning. Defects: No significant defects. Other: Limited inspection, dimensions estimated.	No action required.		Moderate Good Good	High 40+ A
	n/a							3			

Tree Data Schedule

Reference	Group	Age & Species	Height (m)	Crown Ht (m)	DBH (cm)	W	N	E	S	Scaled Tree Diagram (m)	Notes	Recommendations (Independent of any development proposals)	Vegetation Physiological Condition Structural Condition	Amenity Value Life Expectancy (yrs)	Retention Category
T1		Semi-Mature Honey-locust <i>Gleditsia triacanthos</i>	7.5	2	20	3	3	3	3		Position: Situated on raised ground, retained by timber sleepers. Form: Twin-stemmed at 2m with a balanced crown. History: Occasional pruning wounds due to crown lifting. Defects: No significant defects observed.	No action required.	Moderate Good	Low 40+	C +
T2		Semi-Mature Norway Maple <i>Acer platanoides</i>	9	2	18	3	3	3	3		Position: Situated on raised ground, retained by timber sleepers. Form: Single stemmed and vertical with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects.	No action required.	Moderate Good	Low 40+	C +
T3		Mature Plum <i>Prunus sp.</i>	11	2	50	5	5	5	5		Position: Situated on third party land. Form: Multi-stemmed. History: Multiple pruning wounds due to crown lifting. Defects: No significant defects observed. Other: Limited inspection, dimensions estimated.	No action required.	Moderate Good	Low 10-20	C
T4		Semi-Mature Beech <i>Fagus sylvatica</i>	10	1.5	36	4	4	4	4		Form: Twin-stemmed at ground level with a balanced crown. History: Previously topped at 2m. Defects: No significant defects observed. Other: Recorded stem diameter is equivalent for two stems (120cm, 120cm).	No action required.	Moderate Good	Low 40+	C
T5		Mature Ash <i>Fraxinus excelsior</i>	18	4	71	8	8	8	8		Form: Twin-stemmed at 6m with a balanced crown. History: Reduced. Defects: Scattered dead twigs - symptoms of ash dieback.	Monitor.	Low Fair	Moderate 10-20	C
T6		Mature Plum <i>Prunus sp.</i>	10	2	50	5	5	5	5		Position: Situated on third party land. Form: Multi-stemmed at 2m with a balanced crown. History: Multiple pruning wounds due to crown reduction. Defects: No significant defects observed. Other: Limited inspection, dimensions estimated.	No action required.	Moderate Good	Low 10-20	C +
G7		Semi-Mature Willow <i>Salix sp.</i>	2V 7.5	2V 2	2V 20	3.5 3	3.5 3	3.5 3	3.5 3		Position: Situated on third party land. Form: Two close growing specimens. History: Previously topped. Defects: No significant defects observed. Other: Limited inspection, dimensions estimated.	No action required.	Moderate Good	Low 40+	C
G8		Early-Mature Yew <i>Taxus baccata</i>	2V 13	2V 5	2V 40	3.5 4	3.5 4	3.5 4	3.5 4		Form: Three close growing specimens. History: Multiple pruning wounds due to crown lifting. Defects: No significant defects observed.	No action required.	Moderate Good	Moderate 40+	B
T9		Early-Mature Western Red Cedar <i>Thuja plicata</i>	12	1.5	38	3	3	3	3		Position: Situated on third party land. Form: Single stemmed and vertical with a narrow, upright habit. History: No evidence of significant pruning. Defects: No significant defects. Other: Limited inspection, dimensions estimated.	No action required.	Moderate Good	Moderate 40+	B
T10		Early-Mature Yew <i>Taxus baccata</i>	10	1.5	35	3	3	3	3		Position: Situated on third party land. Form: Multi-stemmed. History: No evidence of significant pruning. Defects: No significant defects. Other: Limited inspection, dimensions estimated. Recorded stem diameter is equivalent for three stems (20cm, 10cm, 10cm).	No action required.	Moderate Good	High 40+	B
T11		Mature Sycamore <i>Acer pseudoplatanus</i>	22	10	81	8	6	6	6		Form: Single stemmed and vertical with a slightly unbalanced crown. History: Occasional pruning wounds due to crown lifting. Defects: Significant dead wood over the footpath.	Remove dead wood.	Moderate Good	High 40+	A
T12		Mature Sycamore <i>Acer pseudoplatanus</i>	16	2.5	67	7	7	7	7		Position: Street tree. Form: Single stemmed and leaning with a balanced crown. History: Occasional pruning wounds due to crown lifting. Defects: No significant defects observed.	No action required.	Moderate Good	Moderate 40+	B +
H13		Semi-Mature Monterey Cypress <i>Cupressus macrocarpa</i>	3	0.5	10	1.5	1.5	1.5	1.5		Form: Row of cypress trees. History: No evidence of significant pruning. Defects: No significant defects.	No action required.	Moderate Good	Moderate 40+	C
T14		Semi-Mature Cherry <i>Prunus sp.</i>	4	1.5	12	2	2	2	2		Form: Twin-stemmed at 2m with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects.	No action required.	Moderate Good	Low 40+	C
T15		Semi-Mature Whitebeam <i>Sorbus aria</i>	10	2.5	24	4	4	4	4		Form: Twin-stemmed at 2m with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects.	No action required.	Moderate Good	Moderate 40+	C +
T16		Mature Horse Chestnut <i>Aesculus hippocastanum</i>	19	1.5	96	7	9	9	9		Position: Street tree. Form: Twin-stemmed at 2m with a balanced crown. History: Occasional pruning wounds due to crown lifting. Defects: No significant defects observed.	No action required.	Moderate Fair	High 20-40	B
G17		Semi-Mature Oak <i>Quercus robur</i>	2V 6	2V 1.5	2V 18	3.5 3.5	3.5 3.5	3.5 3.5	3.5 3.5		Position: Street trees. Form: Two close growing specimens. History: No evidence of significant pruning. Defects: No significant defects.	No action required.	Moderate Good	High 40+	C
T18		Mature Bean Tree <i>Catalpa sp.</i>	11	2.5	80	6.5	6.5	6.5	6.5		Position: Situated on third party land. History: No evidence of significant pruning. Defects: No significant defects. Other: Limited inspection, dimensions estimated.	No action required.	Moderate Good	High 40+	A

Survey Outline



Drawing No: CCL 11956 / TCP Rev: 1

Title: Tree Constraints Plan (Existing Layout)

Site: 71 Peppard Road RC4 8NH

Scale: 0 5 10m 1:2500

Tree Retention Categories
Stems & canopies shown

Category A tree

Category B tree

Category C tree

Category U tree

Trees of high quality with an estimated life expectancy of 40+ years. Usually large trees with significant presence or smaller trees with excellent form. Retention of these trees is highly desirable.

Trees of moderate quality with a life expectancy of 20+ years. Usually mature trees, or younger trees with good form. Retention of these trees is desirable though less than Category A trees.

Unremarkable trees of low quality and merit. Individual specimens are not considered to be a material planning consideration.

Trees unsuitable for retention due to their very poor condition.

Tree Constraints Plan
Status: Final

BS 5837 Root Protection Area (radius = 1xstem diameter)

Root Protection Area needing amendment due to site conditions, e.g. presence of existing road or building.

Root Protection Area having been amended to account for site conditions

T1 = Tree No 1

G2 = Group No 2

H3 = Hedge No 3

Photo 1

MN = Measured North:
Canopy spreads are sometimes measured to an approximate N defined by site features. Often more accurate, especially where rows of trees are not aligned N-S or E-W.

Tree Ref.	Species	Height (m)	Radius (m)	Area (m²)	Area (sq ft)
T1	Honey-locust	7.5	2.4	18	4.3
T2	Norway Maple	9	2.2	15	3.8
T3	Plum	11	6.0	113	10.6
T4	Beech	10	4.3	59	7.7
T5	Ash	18	8.5	228	15.1
T6	Plum	10	5.0	79	8.9
G7	Willow	7.5	2.4	18	4.3
G8	Yew	13	4.8	72	8.5
T9	Western Red Cedar	12	4.6	65	8.1
T10	Yew	10	4.2	55	7.4
T11	Sycamore	22	9.7	297	17.2
T12	Sycamore	16	8.0	203	14.3
H13	Monterey Cypress	3	1.2	5	2.1
T14	Cherry	4	1.4	7	2.6
T15	Whitebeam	10	2.9	26	5.1
T16	Horse Chestnut	19	11.5	417	20.4
G17	Oak	6	2.2	15	3.8
T18	Bean Tree	11	9.6	290	17.0

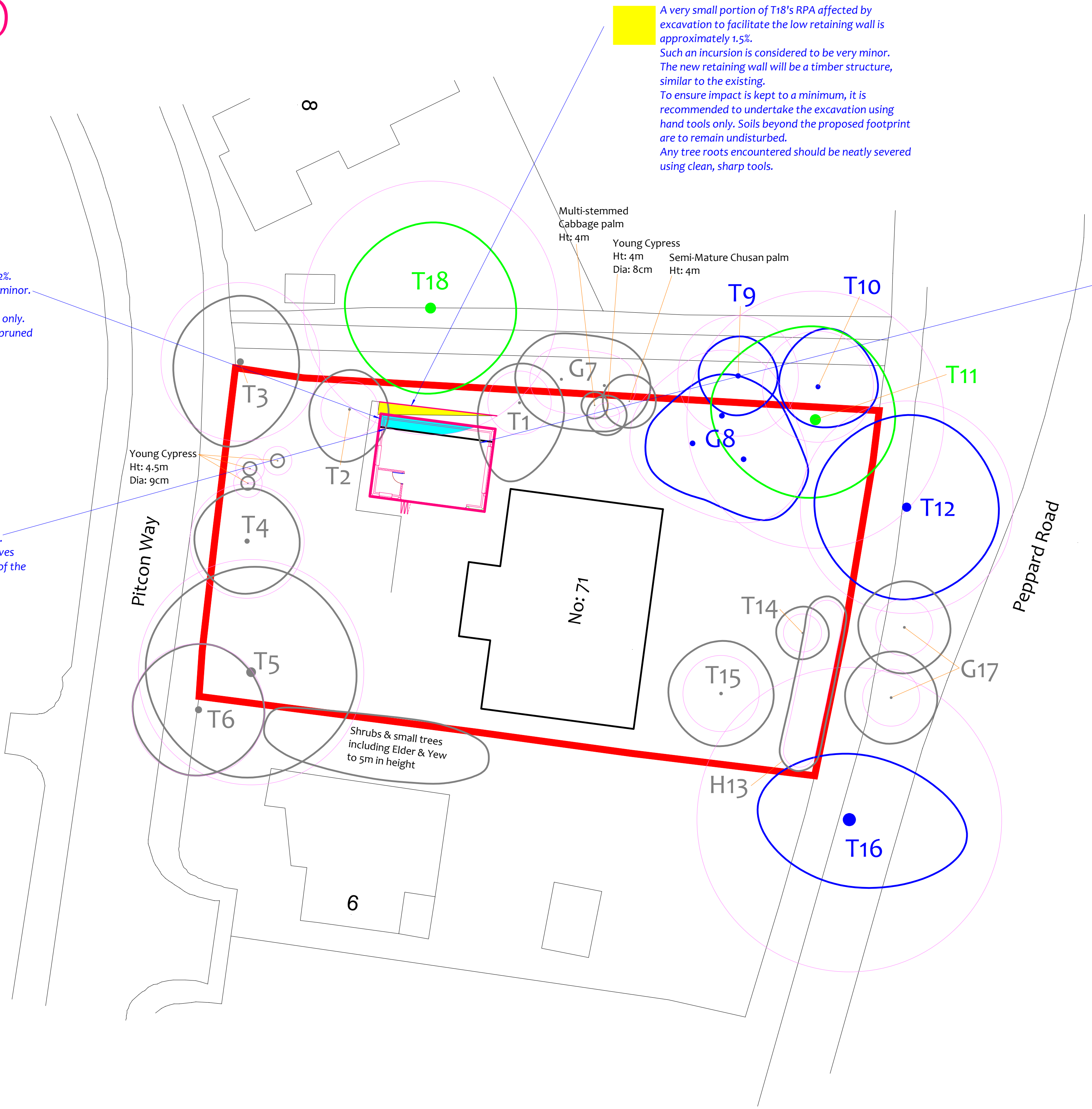
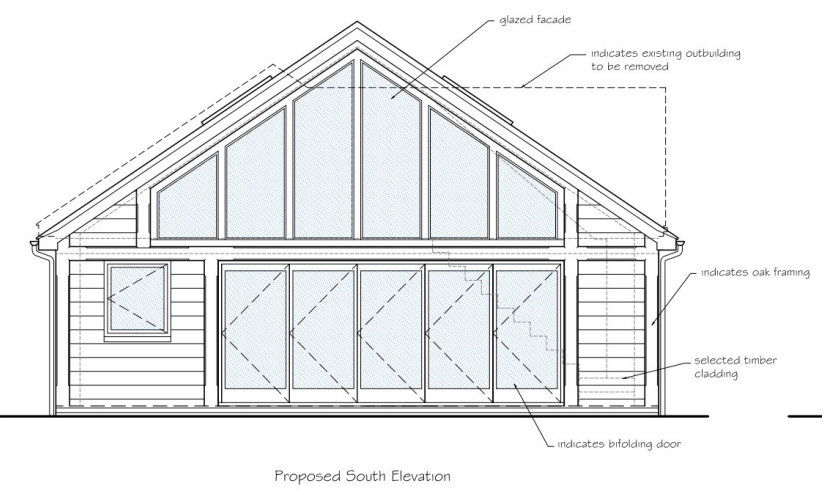
Proposed Layout (Pink)

A very small portion of T18's RPA potentially affected by the proposed footprint = approx 2%. The potential impact is considered to be very minor. To ensure minimal impact, it is recommended to undertake the excavation using hand tools only. Any tree roots encountered should be neatly pruned using clean, sharp tools.

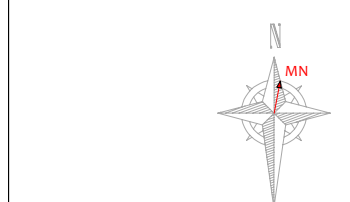
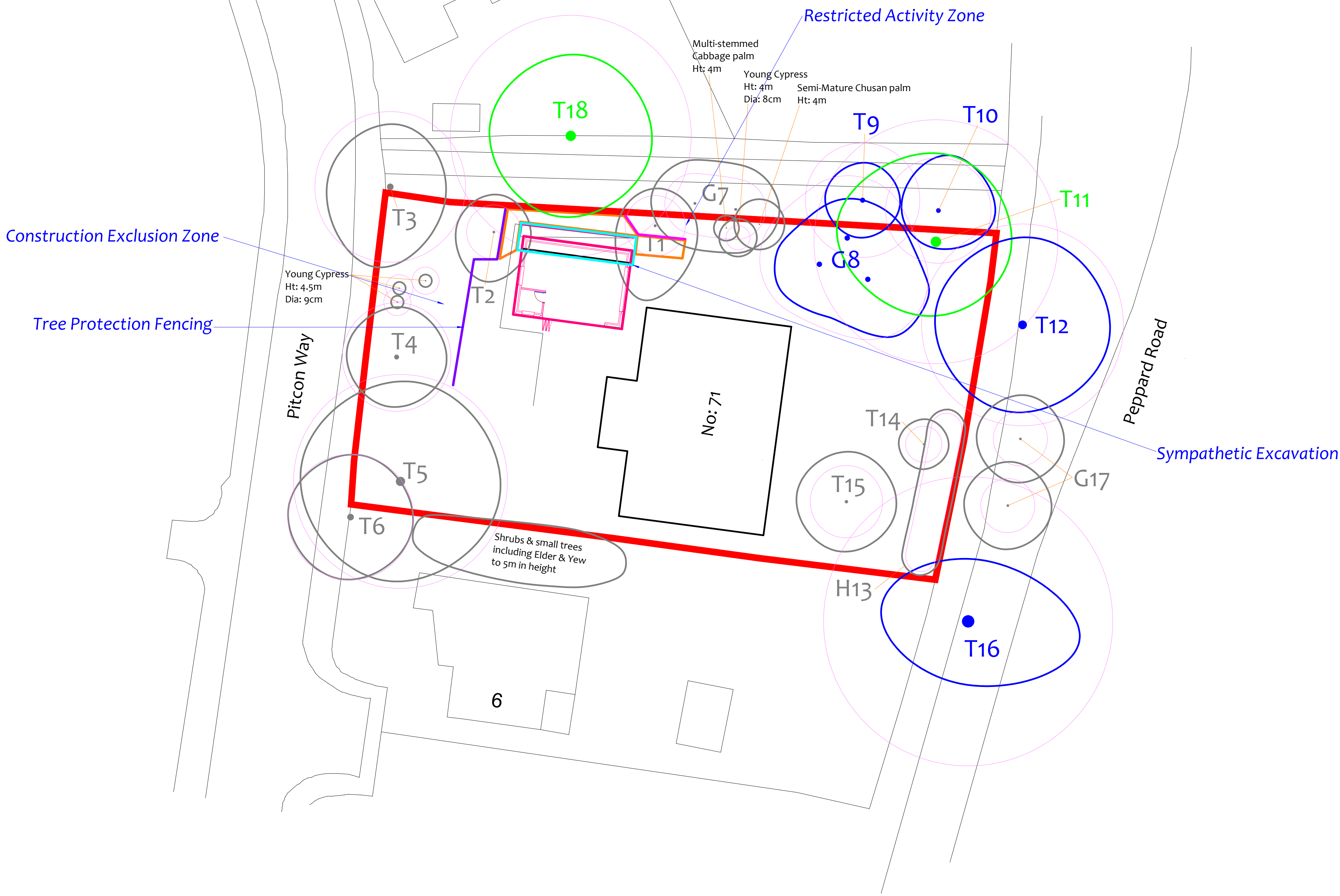
A very small portion of T18's RPA affected by excavation to facilitate the low retaining wall is approximately 1.5%. Such an incursion is considered to be very minor. The new retaining wall will be a timber structure, similar to the existing. To ensure impact is kept to a minimum, it is recommended to undertake the excavation using hand tools only. Soils beyond the proposed footprint are to remain undisturbed. Any tree roots encountered should be neatly severed using clean, sharp tools.

No impact on the canopy of T2. The proposed height of the eaves /roof is lower than the height of the existing eaves/roof.

No impact on the canopy of T1. Proposed roof height directly adjacent canopy of T1 s lower than the existing structure.



Proposed Layout (Pink)



Tree Protection Plan

Tree Protection Barriers:			
	Fixed protective barrier: The 'In-Ground System' or the 'Backstay System'. To remain in place for all construction activity		Construction Exclusion Zone Stem protected to a height of 2.5m with thick cloth & wire Tree Protection Boiling 1.2 x 1.2 x 2.4m high 25mm plywood
	Moveable protective barrier: The 'Backstay System'. To remain in place except when approved works are being undertaken in the Restricted Zone		Orange Barrier Mesh Fencing, Ht. 1m, on steel fencing pins and wooden posts. To remain in place throughout all construction activity

The 'Back Stay System'

3m x 3.5m weldmesh (or sheet metal) panels linked with anti-tamper couplings

Each panel attached to a back stay which is founded in an additional foot or mesh tray as illustrated

Minimum 30kg ballast to retain rear foot or tray (including the weight of the fencing)

Alternate front feet to be secured with ground pins or additional ballast

The 'In-Ground' System

Verticals and horizontals secured with scaffold clips

Anti-climb weldmesh panel (or metal / 48mm ply sheets) firmly secured

2.0 metres

Standard scaffold poles driven 6.6m into the ground (wooden timber posts in concrete foundations may be used outside of RPA's)

Scaffold pegs secured into the ground

The Barrier Mesh System

High visibility plastic safety fencing, 1m high, minimum grade 140g/m2, supported on steel fencing pins located at 2.5m intervals and driven into the ground.

Construction Exclusion Zone

Within this area the following restrictions shall apply:

- No excavation or land regrading whatsoever.
- No storage of materials, rubble, soil or spoil.
- No fires within the exclusion zone or within 5m of any tree canopy.
- No site cabins or other temporary structures.
- No discharge of polluted water, cement or chemicals of any kind.
- No use of any machinery, or storage or parking of vehicles.
- No tree works without council consent.

Restricted Activity Zones

Restrictions to be detailed within an Arboricultural Method Statement

Ground Protection where specified in Restricted Zones

Existing or Proposed Building

Protective fencing

Metal or wooden boards

Compressible material

Existing hard surfaces may be retained in place of ground protection measures

CROWN
Arboricultural Consultants
01422 316660

Tree Ref.	Species	Height (m)	Radius (m)	Area (m²)	Root Protection Area (m²)
T1	Honey-locust	7.5	2.4	18	4.3
T2	Norway Maple	9	2.2	15	3.8
T3	Plum	11	6.0	113	10.6
T4	Beech	10	4.3	59	7.7
T5	Ash	18	8.5	228	15.1
T6	Plum	10	5.0	79	8.9
G7	Willow	7.5	2.4	18	4.3
G8	Yew	13	4.8	72	8.5
T9	Western Red Cedar	12	4.6	65	8.1
T10	Yew	10	4.2	55	7.4
T11	Sycamore	22	9.7	297	17.2
T12	Sycamore	16	8.0	203	14.3
H13	Monterey Cypress	3	1.2	5	2.1
T14	Cherry	4	1.4	7	2.6
T15	Whitebeam	10	2.9	26	5.1
T16	Horse Chestnut	19	11.5	417	20.4
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