

BS 5837 Arboricultural Report

& Impact Assessment



at
10 Green Mount Drive
Heywood
OL10 2LZ

Dated
5th May 2022



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 Stephanie Moss to:

- Undertake a Tree Survey to BS 5837 at 10 Green Mount Drive 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 an overview of the site and any management recommendations.
- Determine if any trees are growing within a conservation area or are protected by a tree preservation order.
- 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.

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 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 our client to attain an adequate understanding of the project to enable us to carry out an accurate assessment of the proposals.

1.4. Survey Details

- 1.4.1. A visual ground-level assessment of all trees was undertaken on the 28th April 2022 by Emma Hoyle. No climbed inspections or specialist decay detection were undertaken. Details of how the survey was undertaken can be found in Appendix 1.
- 1.4.2. The tree locations shown on the accompanying plans have been plotted according to measurements taken on site.

1.5. Author

- 1.5.1. This report was compiled by Emma Hoyle FDS (Arboriculture), ED (Forestry & Arboriculture), M. Arbor. A. Details of the author's experience that qualify her to produce such a report are detailed in Appendix 4.

2. Planning Policy Context

2.1. National Policy

2.1.1. The National Planning Policy Framework 2021 Policy 12, Paragraph 131 is specifically aimed at urban trees:

131. Trees make an important contribution to the character and quality of urban environments, and can also help mitigate and adapt to climate change. Planning policies and decisions should ensure that new streets are tree-lined⁵⁰, that opportunities are taken to incorporate trees elsewhere in developments (such as parks and community orchards), that appropriate measures are in place to secure the long-term maintenance of newly-planted trees, and that existing trees are retained wherever possible. Applicants and local planning authorities should work with highways officers and tree officers to ensure that the right trees are planted in the right places, and solutions are found that are compatible with highways standards and the needs of different users.

2.1.2. Policy 15, Paragraphs 174, 175, and especially 179 and 180 are aimed at conserving and enhancing the natural environment, habitat and biodiversity. All trees provide some habitat and increase the biodiversity of a site. Native trees such as oaks can support an abundance of algae, lichens, mosses, insects, birds, fungi, reptiles and even mammals.

15. Conserving and enhancing the natural environment

174. Planning policies and decisions should contribute to and enhance the natural and local environment by:

- a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
- b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
- c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
- d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and
- f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

175. Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework⁶⁰; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.

Habitats and biodiversity

179. To protect and enhance biodiversity and geodiversity, plans should:

- a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity⁶¹; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation⁶²; and
- b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

180. When determining planning applications, local planning authorities should apply the following principles:

- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
- c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons⁶³ and a suitable compensation strategy exists; and
- d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

181. The following should be given the same protection as habitats sites:

- a) potential Special Protection Areas and possible Special Areas of Conservation;
- b) listed or proposed Ramsar sites⁶⁴; and
- c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

3. Site Overview



3.1. Brief Site Description

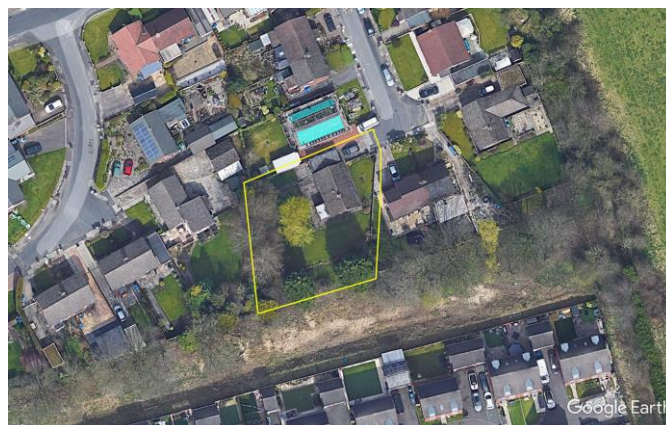
- 3.1.1. Number 10 Green Mount Drive is a detached, residential bungalow with a large garden to the rear. The front of the property is served by a paved driveway and a sloping, unmade parking area. No significant vegetation grows at the front of the property.
- 3.1.2. The garden around the side and rear of the property is primarily occupied by turf, with a pedestrian path and a patio at the rear of the dwelling. A mixture of Retention Category C trees grow along the edges of the garden (T3, T4, T6, T8, T9, T10, T12 and T14).
- 3.1.3. In adjacent gardens are two Retention Category A trees (T11 and T15), one Retention Category B tree (T13) and small Retention Category C trees. The roots of these trees are likely to extend into the site; however, they are mostly located away from the development proposals.
- 3.1.4. The Tree Constraints Plan and Tree Data Schedule (see Appendix 6) should be referred to for descriptions and locations of all trees.

3.2. Coordinates

- 3.2.1. The site coordinates are 53°34'52.65"N 2°12'16.82"W, and the altitude is approximately 135m above sea level¹.

3.3. Survey Extent

- 3.3.1. The area indicated below² shows the extent of the survey.



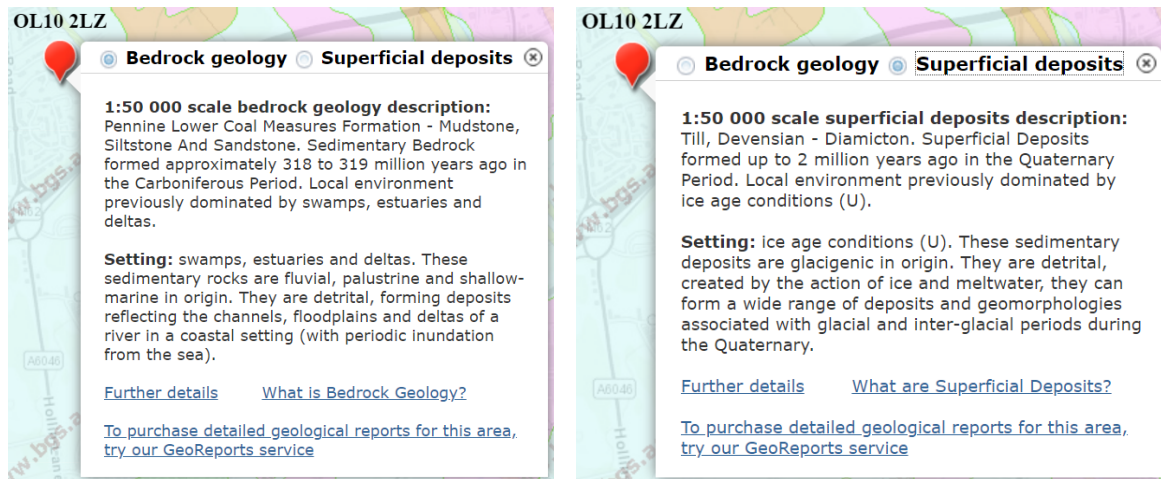
¹ To access satellite imagery and street views of the site these co-ordinates may be entered into: <http://maps.google.co.uk/>

² Image taken from Google Earth and may not be current

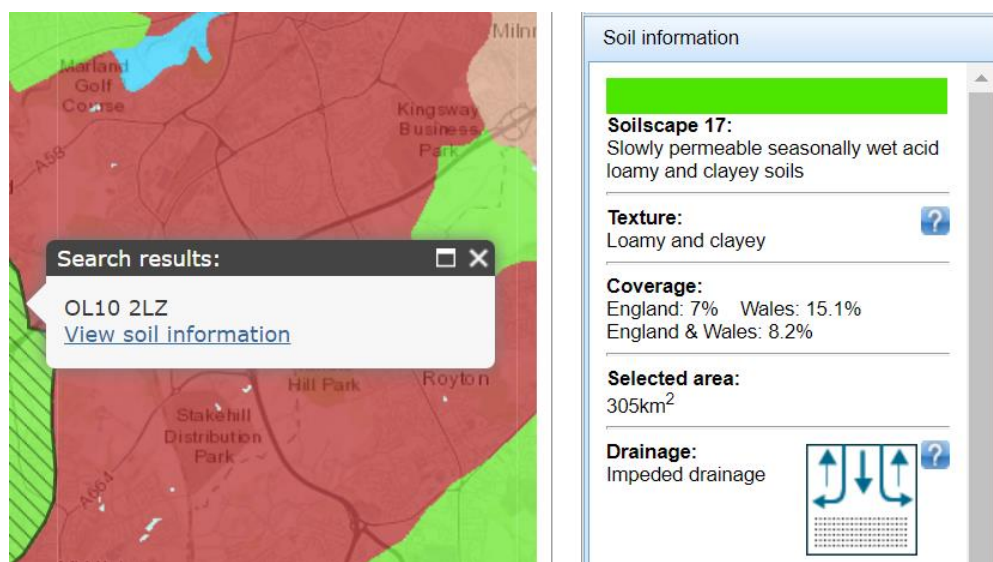
4. Local Geology and Soils

4.1. Desktop Research

4.1.1. Desktop research into local geology based on the postcode **OL10 2LZ** obtained the following results:



Source: <https://mapapps.bgs.ac.uk/geologyofbritain/home.html>



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

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 4.1, local soils are assumed to have a loamy & clayey 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.
- 4.3.3. Clay soils may be especially prone to compaction and slurring caused by general construction activity. Both of which significantly impair root function. This must be guarded against by the use of boards to protect any soils where roots are growing. When planting new trees, species should be selected that can tolerate heavy soils.

5. 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.

5.1. Preliminary Management Recommendations

- 5.1.1. The following recommendations are made in order to maintain the trees in an acceptable condition:
- 5.1.2. T7 is an early mature Hawthorn. A section of the stem and stem junction have been cut with a chainsaw, but the tree not fully removed. Consequently, this tree could be unstable and should be removed.
- 5.1.3. T13 is an early mature Beech tree situated on third party land. The stem and canopy of this tree have a fairly dense smothering of ivy; we recommend the ivy is removed so a full inspection of the tree can be undertaken.
- 5.1.4. T15, an early mature Beech tree situated on third party land, has dead branch stubs to its lower crown and a significant dead detached branch hung up in its canopy at circa 3m above ground level. We recommend undertaking remedial pruning to remove any dead, dying or defective branches from its canopy.
- 5.1.5. All other trees were deemed to be in satisfactory condition.

5.2. Work Priority and Future Inspections

- 5.2.1. The table below suggests a schedule for completing the works recommended in the Tree Data Schedule based on the perceived risk:

Work Priority	Definition	Tree Number
Urgent	As soon as possible	None
Very High	Within 1 Month	None
High	Within 3 Months	T7
Moderate	Within 1 year	None
Low	Within 3 years	T13 and T15

- 5.2.2. 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	None
1.5	T11, T13 and T15
3	G1, T2, T3, T4, T5, T6, T8, T9, T10, T12, T14 and T16

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

6. Statutory Protection – TPOs and Conservation Area Status

Before undertaking most works to trees protected by a tree preservation order³, consent needs to be formally obtained from the local authority. Where trees are located in a conservation area (but not protected by a TPO), works are generally not permitted without first giving the local authority six weeks' notice of intention⁴. Unauthorised works to protected trees, or trees in a conservation area, may result in criminal prosecution and a fine. Where works are required to implement a fully approved development, no such consent, or notice, is required.

6.1. Desktop Research

6.1.1. On 20th April 2022, we were informed by Sharon Hill of Rochdale Borough Council that:

- The site is not within a conservation area.
- There are no TPO's affecting trees within the site.
- There are TPO's affecting trees immediately adjacent to the site.

6.1.2. A screenshot of the local authority's TPO Map is also shown below. The trees shown immediately adjacent to the southern boundary of Number 10 Green Mount Drive, were not present at the time of the survey.



6.2. Felling Licences

6.2.1. Felling licences issued by the Forestry Commission are sometimes required before removing trees. However, these licenses are aimed toward woodland and forestry management. Felling licences are NOT required for any of the following:

- Lopping, topping or pollarding.
- Removal of small trees (stem diameter less than 8cm) or fruit trees.
- Works to any trees growing within domestic gardens, orchards, or the Inner London boroughs.
- Operations involving less than five cubic meters of timber in any quarter year.
- Thinning and understorey clearing operations.
- Dangerous trees, nuisance trees, some diseased trees.
- Where removal is required to enable a fully approved development.

6.2.2. More detailed guidance can be found at <https://www.gov.uk/government/publications/tree-felling-getting-permission>

6.2.3. Hence a felling licence is **not** required relating to this development.

³ <https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas>

⁴ During this time, the local authority may elect to create a tree preservation order or to inform the applicant that they have no objection to the proposed works. If the local authority does not respond within six weeks, then the intended work may be undertaken. Note: the local authority cannot refuse consent for works to trees within a conservation area; they may only create a tree preservation order if they wish to have further control over what works are undertaken.

6.3. Species Present – Additional Information

- 6.3.1. 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
Apple	6	8	Deciduous tree native across Europe and W. Asia. Hundreds of cultivars available due to its popular fruit. Flowers white, pink or red in spring. Some species will self pollinate. Most species have a relatively untidy habit. Older specimens are susceptible to a variety of rusts, moulds and cankers. Excellent habitat tree. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Malus+domestica 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.
Hawthorn	6	6	Arguably Britain's most common tree due to its abundance in field and roadside hedges. Deciduous, prickly and one of our most hardy trees, it will tolerate almost all conditions including drought, pollution and coastal winds. Also known as Mayflower because of its abundance of white flowers in May. Red 'haws' ripen from September to November and have only one pip (unlike Midland hawthorn which contains 2 pips). Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Crataegus+monogyna for more info.
Holly	16	12	Evergreen tree native across Western Europe. Many cultivars available, often with variegated leaves. Females produce bright red berries. Good wildlife value. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Ilex+aquifolium for more info.
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.
Lawson Cypress	40	10	Erect, narrowly conical evergreen tree native to Southwest Oregon and N. W. California. Introduced to Britain in the 1850's and now a common tree in gardens and parks. Makes an excellent dense hedge. Many varieties are available including golden and miniature varieties. Easily distinguished from Leyland cypress by the presence of small cones. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Chamaecyparis+lawsoniana 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+platanooides for more info.
Pissards Plum	6	7	Also called Purple Plum. Small deciduous tree usually with a dense, low canopy containing a multitude of upright epicormic shoots giving it a messy appearance. Adds colour interest and is suitable for a small garden. Pink flowers appear very early in the year and large fruits make good jam. Visit http://en.wikipedia.org/wiki/Cherry_plum for more info.
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.

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.

7. Arboricultural Impact Assessment

7.1. Overview

- 7.1.1. It is proposed to demolish and replace the existing garage, extend the existing bungalow and install a new outbuilding as indicated on the drawings in Appendix 6. The existing layout is indicated in black, and the footprint of the proposed layout is indicated in green.
- 7.1.2. The table below summarises the potential impact on trees due to various activities.

Activity	Trees Potentially Affected
Tree Removal: Retention Category A	None
Tree Removal: Retention Category B	None
Tree Removal: Retention Category C	T6, T8 and T10
Tree Removal: Retention Category U	T7
Tree Pruning	None
RPA: Extension Foundations	None
RPA: Outbuilding Foundations	T9 and T11
RPA: New Patio/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)

- 7.1.1. 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.

7.2. Tree Removal

- 7.2.1. All trees to be removed are indicated on the Impact Assessment Plan , and are listed below:
- 7.2.2. **Retention Category A:** It is proposed to retain the two Retention Category A trees.
- 7.2.3. **Retention Category B:** It is proposed to retain the Retention Category B tree.
- 7.2.4. **Retention Category C:** It is proposed to remove Retention Category C trees T6, T8 and T10. These are relatively small trees (maximum height 8m) located within the rear garden; they are not visible from public vantage points and are not considered to have any landscape value. Consequently, they have a low amenity value and their removal shall not have a significant impact on local visual amenity.
- 7.2.5. **Retention Category U:** It is proposed to remove T7. This tree is recommended for removal regardless of development proposals. Consequently, the removal of the Category U tree is not considered to be a direct impact of the development.
- 7.2.6. None of the trees to be removed are protected by a tree preservation order or considered worthy of special protection. Details specific to each tree can also be found in the Tree Data Schedule.

7.3. Mitigation Planting

- 7.3.1. Once the development is complete, a new hedge is proposed along the southern boundary of the garden to mitigate the loss of trees and to create screening.

7.4. Impact on Tree Canopies

- 7.4.1. The retained tree canopies are sufficiently far from proposed building works and high over access routes such that they should not be impacted by construction activity. Consequently, no pruning works are required to facilitate the proposals.

7.5. Impact on Tree Roots

Extension Foundations:

- 7.5.1. Foundations for the proposed extension do not encroach into the Root Protection Area of any retained tree.
- 7.5.2. Consequently, no restrictions on foundation design or implementation are considered necessary from an arboricultural perspective.

Outbuilding Foundations:

- 7.5.3. The foundations for the new outbuilding will extend into the outer portions of the theoretical Root Protection Areas of T9 and T11. Circa 4% of the RPA of T9 and circa 4.5% of the RPA of T11 shall be affected, which is considered to be minor and within tolerable limits.
- 7.5.4. However, to ensure impact is kept to the absolute minimum, it is recommended to avoid deep concrete strip foundations, and install a lightweight structure supported on narrow posts/piles. Post holes should be excavated using hand tools and kept as narrow as possible. If any tree roots in excess of 50mm are encountered, or an abundance of roots in excess of 25mm are encountered, the post hole should be relocated slightly to enable the root(s) to be retained. Excavation of any existing turf (if required) should not exceed a depth of 200mm and also be excavated using hand tools.
- 7.5.5. These measures will ensure that the impact upon T9 and T11 shall be minimal.

New Surfaces:

- 7.5.6. No new surfaces are proposed within the Root Protection Areas of any trees.

Underground Services:

- 7.5.7. There is ample opportunity for service and drainage provision without the need to pass through the Root Protection Areas of any retained trees. The exact position of services should be agreed, and installation engineers should be made aware of the need to keep trenches outside of RPAs.

Changes in Ground Levels:

- 7.5.8. No changes of ground levels in excess of 100mm within Root Protection Areas shall be made without consulting the arborist and, if necessary, gaining approval from the local authority.

Soil Compaction:

- 7.5.9. 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.
- 7.5.10. 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.

- 7.5.11. It is important that ground compaction and soil disturbance over Root Protection Areas should be avoided during the construction phase. This may be done by installing protective fencing and ground protection measures.

7.6. Demolition Activities

- 7.6.1. No demolition is proposed close to trees, however, tree protection measures should be installed prior to the commencement of all construction activities (including soil stripping) to prevent any detrimental impact on tree health.

- 7.6.2. Adequate tree protection methods should be specified in an Arboricultural Method Statement, and approved by the local authority before demolition takes place. Areas should be designated for the storage of debris.

7.7. Waste and Materials Storage

- 7.7.1. 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.
- 7.7.2. 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.

7.8. Cabins and Site Facilities

- 7.8.1. Consideration should be given to the location of any site welfare facilities in terms of potential impact on trees. Where it is proposed to install cabins or site facilities in Root Protection Areas, the project arborist should be consulted and approval obtained from the local authority.
- 7.8.2. There is limited room for the siting of cabins and storage of materials / spoil during the construction phase so the logistics of the development shall need to be well organised to ensure that there is adequate space outside of the Tree Protection Zones for construction activity.

7.9. Boundary Treatments

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

7.10. Impact of Retained Trees on the Development

- 7.10.1. Adequate space has been allowed between all retained trees and habitable rooms of the proposal. Consequently, the proposal shall not result in increased pressure to remove or overly prune any of the retained trees.
- 7.10.2. The outbuilding is not considered to be a living space so the shade cast by the trees is not considered to be relevant from a planning perspective.
- 7.10.3. The trees along the western boundary of the garden will cast some shade in the direction of the extension, so the installation of large windows are recommended along the western side of the extension.
- 7.10.4. The gutters will need occasional maintenance to avoid blockage from leaves. This will be relatively easy to manage as the extension and outbuilding are single storey structures.
- 7.10.5. 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.

7.11. Summary

- 7.11.1. Only low quality, Retention Category C trees are to be removed to enable the proposals. These are all small trees and are hidden from public vantage points. Consequently, the impact of tree removal on local amenity levels shall be minimal.
- 7.11.2. New hedge planting is proposed once the development is complete to provide screening and mitigate the loss of T6, T8 and T10.
- 7.11.3. No pruning works are required to enable the proposal.
- 7.11.4. No foundations for the proposed bungalow extension are proposed within Root Protection Areas.
- 7.11.5. Foundations for the proposed outbuilding are proposed within small portions (<4.5%) of the Root Protection Areas of T9 and T11. The small extent of RPAs affected, coupled with a sympathetic foundation design and implementation, shall ensure no detrimental impact on trees.
- 7.11.6. No new hard surfacing is proposed in Root Protection Areas.
- 7.11.7. So long as suitable protection measures are implemented during demolition and construction stages, I see no arboricultural reasons why the proposal should not proceed.

7.12. Arboricultural Method Statement

- 7.12.1. 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.

8. 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.



Photo 11.



Photo 12.



Appendix 1: BS 5837: 2012 – Guidance Notes

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 trees in relation to design, demolition and construction to form balanced judgements.

It acknowledges the positive contribution trees may offer to a site, as well as the negative aspects of retaining inappropriate trees. It addresses the negative impacts that construction activity may have upon trees and offers mitigation strategies to minimise these impacts.

The Standard suggests a three stage approach to ensure best practice is followed when developing close to trees:

A1.1 Stage 1: Survey Details and Notes

A ground level visual survey was undertaken. No climbed inspections or specialist decay detection were undertaken. Only trees with a stem diameter over 75mm, which lie within the site boundary or relatively close to it, were included.

Where applicable, trees with significant defects have been highlighted and appropriate remedial works have been recommended. However, this report should not be seen as a substitute for a full *Safety Survey* or *Management Plan* which are specifically designed to minimise risk and liability associated with responsibility for trees.

Wherever practicable dimensions were obtained using diameter tapes, logger's tapes, distometers and clinometers. Where obstacles prevent accurate measurement, dimensions are estimated. Trees on privately owned third party 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:

A1.1.1 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 the categories A, B or C. 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.

Shade Constraints. The previous Standard (BS 5837 2005) suggested that shade constraints should be indicated on the TCP. These are denoted as a circle-segment drawn northwest to due east with a radius equal to the height of the tree. These do not represent the actual shade pattern which varies through the seasons. Rather, they indicate the area most shaded by the tree throughout the course of the year. Ideally habitable room windows should be located outside of these shade constraints. Where we consider it appropriate, we will include shade constraints information on our Impact Assessment Plan or Proposed Layout Plan.

A1.2 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 upon the proposal. The arborist may recommend mitigation strategies to minimise these impacts and help achieve a more harmonious juxtaposition between buildings and trees.

A1.3 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: Survey Methodology

Ground level visual surveys are carried out using the *Visual Tree Assessment* technique described by Mattheck and Broeler (1994) and endorsed by the Arboricultural Association (LANTRA Professional Tree Inspection course, 2007).

Structural condition is assessed by inspecting the stem and scaffold branches from all angles looking for weak branch junctions or symptoms of decay. Particular attention is paid to the stem-base. Cavities are explored using a metal probe in order to assess the extent of any decay. If this is not possible further inspection is recommended in the form of a climbed inspection or using specialist decay detection equipment.

The physiological condition is assessed by inspecting the stem, branches and foliage for symptoms of disease. The overall vigour of the tree is also taken into account.

Where significant defects are observed, recommendations are made according to a scale of priority in order to reduce the likelihood of structural failure. The position of the tree and its potential targets are taken into account.

Measurements are obtained using a diameter tape, clinometer, distometer and loggers tape. Where this is not practical measurements are estimated.

Some trees are surveyed as groups, though this is usually avoided close to areas likely to be developed.

Finally, a *Retention Category* is allocated as described in Appendix 1.1.1.

Appendix 3: Glossary of Tree Data

This section explains the terms used in the **Tree Data Schedule** (see Section 3 and Appendix 6).

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.
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 4: Author'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 practise 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.

Appendix 5: Further Information

Building Near Trees – General

National Joint Utilities Group publication # 10 (1995), *Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees*. Downloadable at www.njug.demon.co.uk/pdf/NJUG%20Publication10.pdf

NHBC Standards Chapter 4.2., *Trees and Buildings*.

Horticulture LINK project 212. (University of Cambridge, 2004), *Controlling Water Use of Trees to Alleviate Subsidence Risk*.

Tree Planting and aftercare

See www.trees.org.uk/leaflets.php# for downloadable leaflets on selecting a garden tree, planting, aftercare and veteran tree management.

British Standards

BS 5837: 2012. Trees in Relation to Design, Demolition and Construction – Recommendations.

Bs 3998: 2010. Recommendations for Tree Work.

BS 3936: 1992. Nursery Stock. Part 1: Specification for Trees and Shrubs.

BS 3936: 1992. Nursery Stock. Part 10: Specification for Groundcover Plants.

BS 4043: 1989. Transplanting Root-balled Trees.

BS 8004: 1986. Foundations.

BS 8103: 1995. Structural design of Low-Rise Buildings.

BS 8206: 1992. Lighting for Buildings.

BS 8545:2014. Trees: From nursery to independence in the landscape – Recommendations

BS 3882: 2015. Topsoil.

BS 4428: 1989. General Landscaping Operations (excluding hard surfaces).

Permission to do Works to Protected Trees / Tree Law

Forestry Commission (Edinburgh, 2003), *Tree Felling – Getting Permission*. Country Services Division - Forestry Commission. Downloadable at [www.forestry.gov.uk/website/pdf.nsf/pdf/wgfsell.pdf/\\$FILE/wgfsell.pdf](http://www.forestry.gov.uk/website/pdf.nsf/pdf/wgfsell.pdf/$FILE/wgfsell.pdf)

Transport and the Regions (Department of the Environment, 2000), *Tree Preservation Orders, A Guide to the Law and Good Practice*. Downloadable at www.communities.gov.uk/publications/planningandbuilding/tpsguide

C. Mynors, *The Law of Trees, Forests and Hedgerows* (Sweet and Maxwell, London, 2002)

Communities and Local Government website with numerous downloadable documents, from: <http://www.communities.gov.uk/planningandbuilding/planning/treeshighhedges/>

Lighting Levels

P.J. Littlefair, B.R.E. 209: *Site layout planning for daylight and sunlight A guide to good practice*. B.R.E. Bookshop, London.

British Standards Institution. Code of practice for day lighting. *British Standard BS 8206: Part 2* (1992).

Chartered Institution of Building Services Engineers. *Applications manual: Window Design* (London, 1987).

NBA Tectonics. A study of passive solar housing estate layout. *ETSU Report S-1126*. Harwell, Energy Technology Support Unit (1988).

I.P. Duncan; D. Hawkes, *Passive solar design in non-domestic buildings*. *ETSU Report S-1110*. Harwell, Energy Technology.

P. J. Littlefair, *Measuring Daylight*, *BRE Information Paper 23/93* f3.50. (Advises on measuring daylight under the real sky or an artificial sky, allowing for the changing nature of sky light).

High Hedges

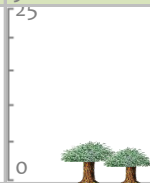
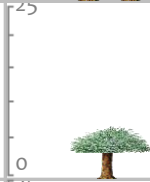
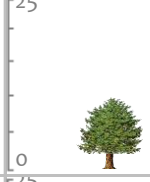
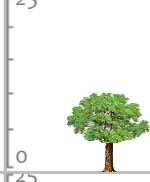
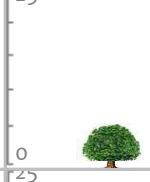
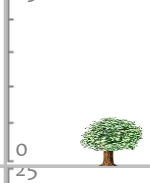
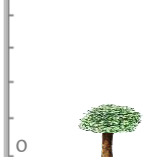
Communities and Local Government website with numerous downloadable documents, from: <http://www.communities.gov.uk/planningandbuilding/planning/treeshighhedges/>

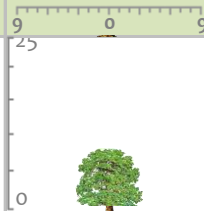
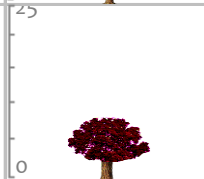
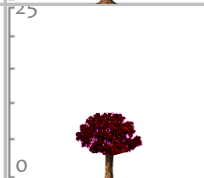
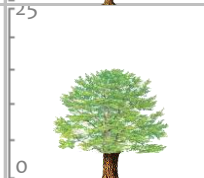
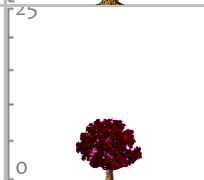
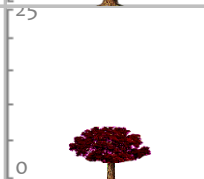
Tree Specific Websites

www.crowntrees.co.uk	Crown Consultants site containing useful information
www.trees.org.uk	Arboricultural Association
www.rfs.co.uk	Royal Forestry Society of England, Wales and N. Ireland
www.treehelp.info	The Tree Advice Trust
www.woodland-trust.org.uk	The Woodland Trust
www.treecouncil.org.uk	The Tree Council

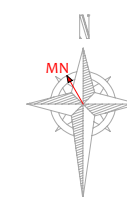
Appendix 6: Tree Data Schedule and Drawings

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.

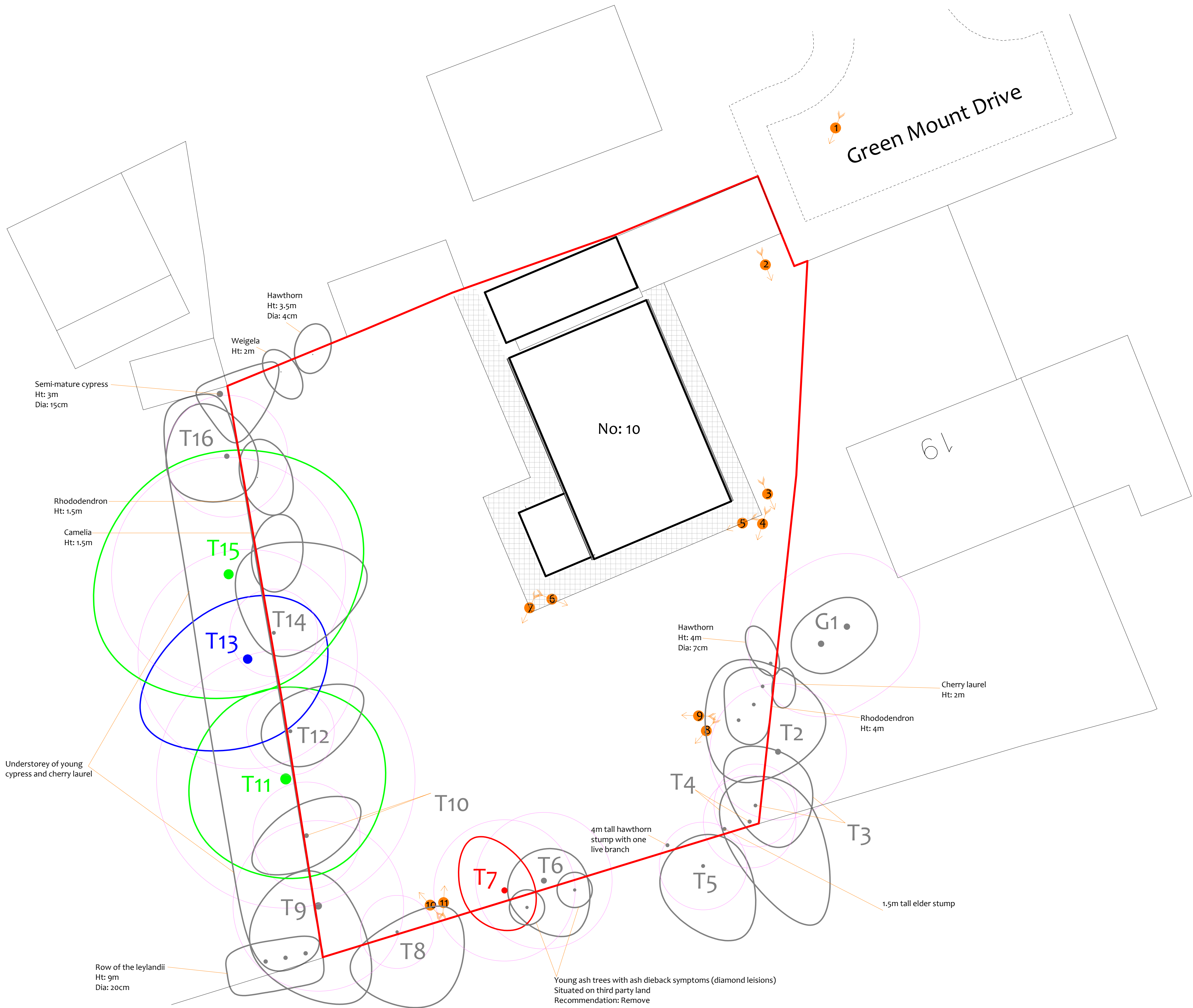
Reference G = Group H = Hedge	Age & Species	Height (m)	Crown Ht (m)	Diameter (cm)	Crown Spread (m) N W E S	Scaled Tree Diagram (m)	Notes	Recommendations (Independent of any development proposals)		Vigour	Amenity Value
								Priority	Inspect Freq (yrs)	Physiological Condition	Life Expectancy (yrs)
G1	Early-Mature Apple Malus sp.	av 4.5	av 3	av 30	av 1.5 1.5 1.5 each		Position: Situated on third party land. Form: Two close growing specimens. History: Multiple pruning wounds due to crown reduction and crown lifting. Defects: No significant defects observed. Other: Limited inspection, dimensions estimated.	No action required.		Moderate Good Good	Low 20-40 C
								n/a	3		
T2	Semi-Mature Apple Malus sp.	6.5	3.5	28	3 5 1		Position: Situated on third party land. Form: Multi-stemmed at 3m with an unbalanced crown. History: Multiple pruning wounds due to crown lifting. Defects: No significant defects observed. Other: Limited inspection, dimensions estimated.	No action required.		Moderate Good Good	Low 20-40 C
								n/a	3		
T3	Semi-Mature Holly Ilex aquifolium.	9	1.5	17	1 3 2.5		Form: Twin-stemmed at 3m with an unbalanced crown. History: Small stem removed at base. Defects: Minor included bark at stem junction. Sparse canopy.	No action required.		Moderate Fair Fair	Low 10-20 C
								n/a	3		
T4	Semi-Mature Sycamore Acer pseudoplatanus.	10	4	19	1.5 2 6		Form: Twin-stemmed at 0.5m with an unbalanced crown. History: No evidence of significant pruning. Defects: Bark wounds to lower branches. Minor dead wood to upper crown. Other: Growing through wire mesh fence. Recorded stem diameter is equivalent for two stems (15 & 12cm).	No action required.		Low Fair Fair	Low 10-20 C
								n/a	3		
T5	Semi-Mature Horse Chestnut Aesculus hippocastanum.	5	1	18	1.5 2.5 4		Position: Situated on third party land. Form: Twin-stemmed at 1m with a slightly unbalanced crown. History: No evidence of significant pruning. Defects: Scattered dead twigs. Other: Limited inspection, dimensions estimated.	No action required.		Moderate Fair Good	Low 40+ C
								n/a	3		
T6	Early-Mature Hawthorn Crataegus monogyna.	5	2	28	1.5 2 3		Form: Multi-stemmed at 2m with a slight lean. History: Previously topped at 4m above ground level. Defects: Significant decaying branch stub to main stem. Other: Vegetation prevented detailed inspection of stem base.	No action required.		Moderate Good Fair	Low 10-20 C
								n/a	3		
T7	Early-Mature Hawthorn Crataegus monogyna.	6	3	29	3 2 1.5 2		Form: Twin-stemmed at 2m with a slightly unbalanced crown. History: Previously topped at 4m. Defects: Section of stem and stem union cut with chainsaw. Other: Potentially unstable.	Remove.		Moderate Fair Very Poor	Low <10 U
								High	N/A		

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
T8	Semi-Mature Norway Maple Acer platanoides.	8	1	15	3 0.5 3 4		Form: Triple-stemmed at 1m with an unbalanced crown. History: No evidence of significant pruning. Defects: Small dead branches throughout. Bark wounds to lower branches. Other: Growing through wire mesh fence.	No action required.		Moderate	Low
	n/a							3	Fair Good	10-20 C	
T9	Early-Mature Pissards Plum Prunus cerasifera.	8	3	35	4 2 5 1.5		Form: Twin-stemmed at 1m with a slightly unbalanced crown. History: Occasional pruning wounds due to crown lifting. Defects: Scattered dead twigs to lower crown. Minor included bark. Other: Recorded stem diameter is equivalent for two stems (24 & 26cm).	No action required.		Moderate	Low
	n/a							3	Good Fair	10-20 C	
T10	Early-Mature Pissards Plum Prunus cerasifera.	8	3	22	3 1.5 3 1.5		Form: Twin-stemmed at 2m with a slightly unbalanced crown. History: Occasional pruning wounds due to crown lifting. Defects: Small dead branches to lower crown.	No action required.		Moderate	Low
	n/a							3	Fair Good	10-20 C	
T11	Early-Mature Beech Fagus sylvatica.	16	3.5	53	5 4.5 5 5		Position: Situated on third party land. Form: Twin-stemmed at 1m with a well-formed crown. History: No evidence of significant pruning. Defects: Significant included bark at stem junction (acceptable condition at present, due to upright form). Small dead branches throughout. Other: Limited inspection, dimensions estimated. Recorded stem diameter is equivalent for two stems (40 & 35cm).	No action required.		Moderate	High
	n/a							1.5	Good Fair	40+ A -	
T12	Early-Mature Pissards Plum Prunus cerasifera.	8	1.5	18	1.5 1.5 4 2		Form: Twin-stemmed at 2m with an unbalanced crown. History: Occasional pruning wounds due to crown lifting. Defects: Early decay at pruning wounds. Small dead branches to lower crown. Other: Suppressed by adjacent beech trees.	No action required.		Moderate	Low
	n/a							3	Fair Good	10-20 C	
T13	Early-Mature Beech Fagus sylvatica.	16	2	45	6 3 4 4		Position: Situated on third party land. Form: Twin-stemmed at 1.5m with a slight lean. History: No evidence of significant pruning. Defects: Included bark at stem junction. Upper stem is ivy smothered. Other: Limited inspection, dimensions estimated.	Remove ivy.		Moderate	Moderate
	Low							1.5	Good Fair	40+ B +	
T14	Semi-Mature Pissards Plum Prunus cerasifera.	7	3	18	1 4 5.5 1.5		Form: Twin-stemmed at 2m with an unbalanced crown. History: Occasional pruning wounds due to crown lifting. Defects: Scattered dead wood throughout. Other: Suppressed by adjacent beech trees.	No action required.		Moderate	Low
	n/a							3	Fair Good	<10 C -	

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
T15	Early-Mature Beech Fagus sylvatica.	14	2.5	48	7 7 6		Position: Situated on third party land. Form: Multi-stemmed at 6m with a well-formed crown. History: No evidence of significant pruning. Defects: Dead branch stubs to lower crown. One dead broken branch hung up in canopy at 3m above ground level to east. Other: Limited inspection, dimensions estimated.	Remedial prune.		Moderate Good Fair	High 40+ A
								Low	1.5		
T16	Semi-Mature Lawson Cypress Chamaecyparis lawsoniana.	12	3	25	3 1.5 2		Position: Situated on third party land. Form: Single stemmed and vertical with a slightly unbalanced crown. History: No evidence of significant pruning. Defects: No significant defects observed. Other: Limited inspection, dimensions estimated.	No action required.		Moderate Good Good	Moderate 40+ C
								n/a	3		



Tree Constraints Plan
(Existing Layout)



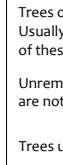
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Tree Retention Categories	
Stems & canopies shown	
	Category A tree
	Category B tree
	Category C tree
	Category U tree



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 maturing 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

	BS s837 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 for site conditions
T1= Tree No 1	G2 = Group No 2 H3 = Hedge No 3

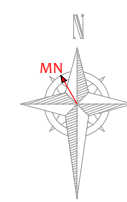


Photo 1

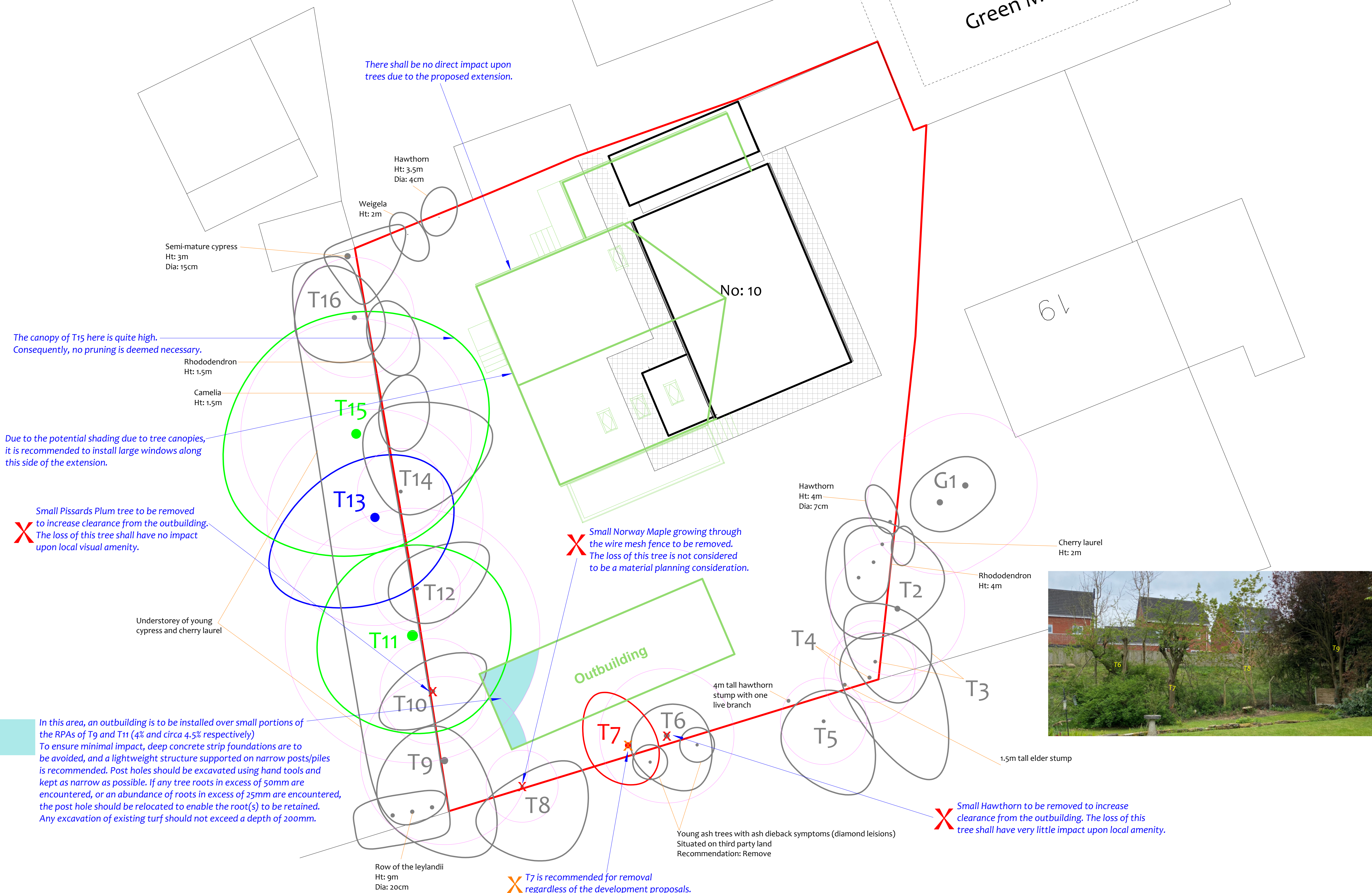
MN = Measured North:
Canopy spreads are sometimes measured to an approximate N defined by site features. Often more accurate, especially where rows of trees are not aligned N-S or E-W.

Tree Ref.	Species	Height (m)	Root Protection Area		
			Radius (m)	m ²	Square (m)
G1	Apple	4.5	3.6	41	6.4
T2	Apple	6.5	3.4	35	6.0
T3	Holly	9	2.0	13	3.6
T4	Sycamore	1	2.3	16	4.0
T5	Horse Chestnut	5	2.2	15	3.8
T6	Hawthorn	5	3.4	35	6.0
T7	Hawthorn	6	3.5	38	6.2
T8	Norway Maple	6	1.8	10	3.2
T9	Purple Plum	8	4.2	55	7.4
T10	Purple Plum	8	2.6	22	4.7
T11	Beech	16	6.4	127	11.3
T12	Purple Plum	8	2.2	15	3.8
T13	Beech	16	5.4	92	9.6
T14	Purple Plum	7	2.2	15	3.8
T15	Beech	14	5.8	104	10.2
T16	Lawson Cypress	12	3.0	28	5.3

Proposed Layout (Pale Green)



Impact Assessment Plan
(Existing Layout with Proposals Overlaid)



Drawing No:	CCL 11133 / IAP Rev: 1
Title:	Impact Assessment Plan (Existing Layout with Proposals Overlaid)
Site:	to Green Mount Drive OL to 21.2
Scale:	0 5 10m 1:1200
Paper Size:	A1



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 maturing 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.

Impact Assessment Plan
(Existing Layout with Proposals Overlaid)

	BS 5837 Root Protection Area (radius = 12xstem 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

	Tree to be removed to facilitate the proposal
	Tree to be removed due to its low quality
	Proposed pruning

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)	Root Protection Area		
			Radius (m)	m ²	Square (m)
G1	Apple	4.5	3.6	41	6.4
T2	Apple	6.5	3.4	35	6.0
T3	Holly	9	2.0	13	3.6
T4	Sycamore	1	2.3	16	4.0
T5	Horse Chestnut	5	2.2	15	3.8
T6	Hawthorn	5	3.4	35	6.0
T7	Hawthorn	6	3.5	38	6.2
T8	Norway Maple	8	1.8	10	3.2
T9	Purple Plum	8	4.2	55	7.4
T10	Purple Plum	8	2.6	22	4.7
T11	Beech	16	6.4	127	11.3
T12	Purple Plum	8	2.2	15	3.8
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