

BS 5837 Arboricultural Report

(Pre-Planning)



at
Status Park
Nobel Drive
Harlington
Hayes
UB3 5EY

Dated
17th January 2023



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 Savills to:

- Undertake a Tree Survey to BS 5837 at Status Park 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.

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 inform the reader of the trees and how they might constrain any potential development of the site. It does not consider specific design proposals, so will not validate a full planning application.
- 1.2.2. 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. Survey Details

- 1.3.1. A visual ground-level assessment of the trees was undertaken on the 5th October 2022 & 6th January 2023 by Joe Taylor & Carl Lothian. No climbed inspections or specialist decay detection were undertaken. Details of how the survey was undertaken can be found in Appendix 1.
- 1.3.2. The tree locations shown on the accompanying drawings are based on a measured drawing of the site supplied to Crown Tree Consultancy. This drawing had the tree positions already plotted. Where applicable, additional trees have been plotted by us according to measurements taken on-site.

1.4. Author

- 1.4.1. 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. Site Overview



2.1. Brief Site Description

- 2.1.1. Status Park is a commercial business park located on Nobel Drive to the north of Heathrow Airport.
- 2.1.2. The site covers approximately two hectares and is approximately flat with no abrupt ground level changes. The site is given over to three detached commercial buildings, associated car parks, and roads which are surrounded by soft grass verges.
- 2.1.3. Within the site grow a mixture of Retention Category B trees, Retention Category C trees and three Retention Category U trees; tree species present predominantly include Norway Maple, Box Elder, Apple, Cherry, Ash and Oak.
- 2.1.4. The Tree Constraints Plan and Tree Data Schedule (see Appendix 6) should be referred to for descriptions and locations of all trees.

2.2. Coordinates

- 2.2.1. The site coordinates are 51°28'51.77"N 0°25'47.28"W, and the altitude is approximately 24m above sea level¹.

2.3. Survey Extent

- 2.3.1. The area indicated below² shows the extent of the site. Our survey included all trees within the curtilage of the property and those adjacent to it.



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.

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. Trees T11, T13 and T55 are in a poor physiological and/or structural condition and are recommended for removal.

3.1.3. Trees T1, T6 and G43 all have defects which require monitoring, as detailed on the Tree Data Schedule. It is also recommended to remove the deadwood from the canopy of T1.

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:

Work Priority	Definition	Tree Number
Urgent	As soon as possible	None
Very High	Within 1 Month	None
High	Within 3 Months	None
Moderate	Within 1 year	T1, T6, T11, T13 and G43
Low	Within 3 years	T55

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	T1, T6
1.5	G43
3	All other trees.

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.

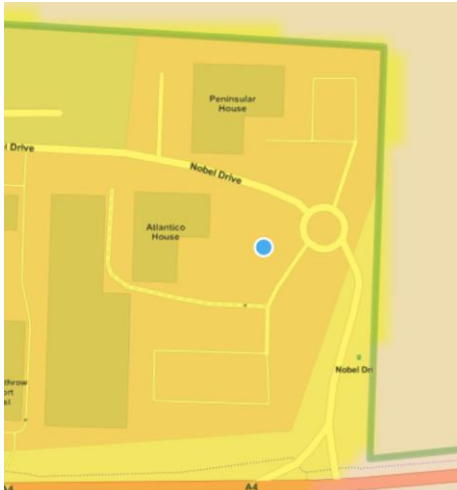
Species	Typical Height at Maturity (m)	Typical Canopy Spread at Maturity (m)	General Notes
Apple	6	8	Deciduous tree native across Europe and W. Asia. Hundreds of cultivars available due to its popular fruit. Flowers white, pink or red in spring. Some species will self-pollinate. Most species have a relatively 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.
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.
Box Elder	16	12	Also called Ash-leaved Maple. Native across N. America. Often untidy looking with steep younger stems. Has pinnate leaves which is unusual for an Acer. Flowers in showy hanging plumes before the leaves emerge. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Acer+negundo 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.
Field Maple	12	10	Deciduous tree native to England & Wales, central and southern Europe, Turkey and west Asia to North Africa. Good hedging species as it has a habitat value and responds well to pruning. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Acer+campestre for more info.
Himalayan Birch	16	10	Deciduous tree native to Himalayas. Many cultivars available. Prized for its bark and often planted in urban settings especially the 'Jaquemontii' cultivar which has very bright white bark. See http://www.pfaf.org/user/Plant.aspx?LatinName=Betula+utilis for more info.
Hornbeam	25	14	Deciduous tree native to Southeast England and across Europe. Bark is smooth and grey on a stem which is often twisted and sinewy. Leaves sharply toothed and deeply veined. Tolerant of heavy clay soils. Formerly coppiced and prized for its durable timber which was used in wheel hubs, piano hammers, mill wheels and chopping blocks. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Carpinus+betulus for more info.
Italian Alder	20	10	Deciduous tree with a bold conical shape and glossy heart shaped leaves. Reproduces via large yellow catkins and woody 'cones'. Native of corsica and S Italy. Often planted as a street tree. Will tolerate most soils. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Alnus+cordata 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.
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.
Pine	25	12	Genus of evergreen conifers often grown for timber. Pine trees often shed their lower branches and develop a high, wide spreading crown at maturity.

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 **UB3 5EY** obtained the following results:



Geology

Bedrock geology

London Clay Formation - Clay, silt and sand. Sedimentary bedrock formed between 56 and 47.8 million years ago during the Palaeogene period.

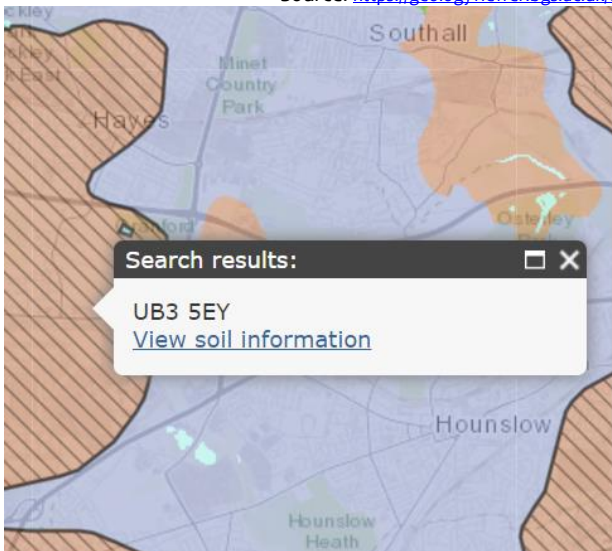
[More Information](#)

Superficial deposits

Langley Silt Member - Clay and silt. Sedimentary superficial deposit formed between 116 and 11.8 thousand years ago during the Quaternary period.

[More Information](#)

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



Soil information

Soilscape 6:
Freely draining slightly acid loamy soils

Texture:
Loamy

Coverage:
England: 15.5% Wales: 24.4%
England & Wales: 16.7%

Selected area:
192km²

Drainage:
Freely draining

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

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.

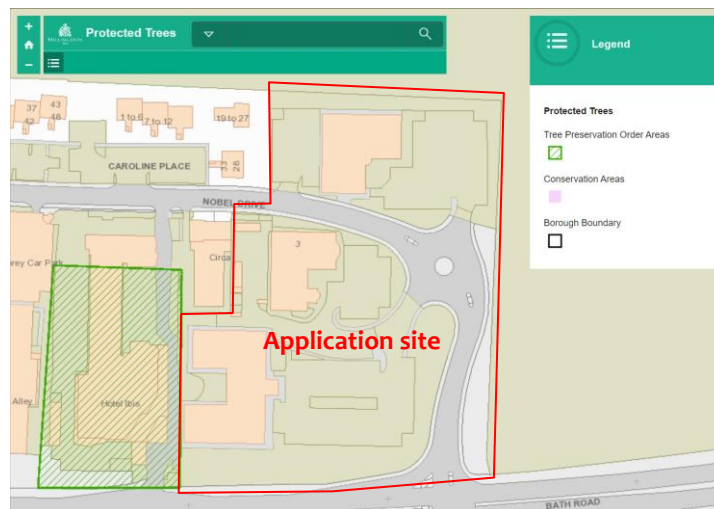
4.3.2. Loamy soils contain a mixture of clay and sand. Soil compaction may occur due to vehicular activity on building sites, so ground protection is recommended wherever vehicles operate. Most tree species will grow well in loamy soils.

5. Statutory Protection – TPOs and Conservation Area Status

Before undertaking most works on trees protected by a tree preservation order³, consent needs to be formally obtained from the local authority. Where trees are 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.

5.1. Desktop Research

5.1.1. On the 13th January 2023, we accessed the local authority website. A screenshot is produced below:



5.1.2. This indicates that:

- The site is not within a conservation area.
- There are no tree preservation orders affecting trees within the site.
- There is a tree preservation order affecting trees immediately adjacent to the site. TPO Reference: 337.

5.2. Felling Licences

5.2.1. 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.

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

5.2.3. Hence, a felling license will **not** be required for any tree removal if the development receives approval.

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. Planning Policy Context

6.1. National Policy

6.1.1. 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.

6.1.2. 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 Framework⁵⁰; 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 biodiversity⁵¹; 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:

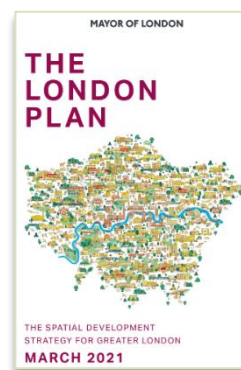
- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- b) development on land within or outside 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.

6.2. Regional Policy

- 6.2.1. The London Plan 2021⁵ is the Spatial Development Strategy for Greater London. It sets out a framework for how London will develop over the next 20-25 years and the Mayor's vision for Good Growth.
- 6.2.2. The Plan is part of the statutory development plan for London, meaning that the policies in the Plan should inform decisions on planning applications across the capital. Borough's Local Plans must be in general conformity with the London Plan, ensuring that the planning system for London operates in a joined-up way and reflects the overall strategy for how London can develop sustainably, which the London Plan sets out⁶.
- 6.2.3. Chapter 8 relates to the natural environment. Within this chapter, Policies G1 and G2 promote green infrastructure and stress the importance of conserving London's Green Belt. Policies G3 and G4 relate to Metropolitan Open land and Open Space. Whilst trees are an intrinsic part of all of the above; they are not specifically mentioned in these policies.



- 6.2.4. Policy G5 is relevant to this report as it promotes the greening of London by including the planting of new trees and retaining existing trees where possible.

Policy G5 Urban greening

- A Major development proposals should contribute to the greening of London by including urban greening as a fundamental element of site and building design, and by incorporating measures such as high-quality landscaping (including trees), green roofs, green walls and nature-based sustainable drainage.
- B Boroughs should develop an Urban Greening Factor (UGF) to identify the appropriate amount of urban greening required in new developments. The UGF should be based on the factors set out in Table 8.2, but tailored to local circumstances. In the interim, the Mayor recommends a target score of 0.4 for developments that are predominately residential, and a target score of 0.3 for predominately commercial development (excluding B2 and B8 uses).
- C Existing green cover retained on site should count towards developments meeting the interim target scores set out in (B) based on the factors set out in Table 8.2.

Table 8.2 - Urban Greening Factors

Surface Cover Type	Factor
Semi-natural vegetation (e.g. trees, woodland, species-rich grassland) maintained or established on site.	1
Wetland or open water (semi-natural; not chlorinated) maintained or established on site.	1
Intensive green roof or vegetation over structure. Substrate minimum settled depth of 150mm – see livingroofs.org for descriptions. ^A	0.8
Standard trees planted in connected tree pits with a minimum soil volume equivalent to at least two thirds of the projected canopy area of the mature tree – see Trees in Hard Landscapes for overview. ^B	0.8
Extensive green roof with substrate of minimum settled depth of 80mm (or 60mm beneath vegetation blanket) – meets the requirements of GRO Code 2014. ^C	0.7
Flower-rich perennial planting – see RHS perennial plants for guidance. ^D	0.7
Rain gardens and other vegetated sustainable drainage elements – See CIRIA for case-studies. ^E	0.7
Hedges (line of mature shrubs one or two shrubs wide) – see RHS for guidance. ^F	0.6
Standard trees planted in pits with soil volumes less than two thirds of the projected canopy area of the mature tree.	0.6
Green wall – modular system or climbers rooted in soil – see NBS Guide to Façade Greening for overview. ^G	0.6
Groundcover planting – see RHS Groundcover Plants for overview. ^H	0.5
Amenity grassland (species-poor, regularly mown lawn).	0.4
Extensive green roof of sedum mat or other lightweight systems that do not meet GRO Code 2014. ^I	0.3
Water features (chlorinated) or unplanted detention basins.	0.2
Permeable paving – see CIRIA for overview. ^J	0.1
Sealed surfaces (e.g. concrete, asphalt, waterproofing, stone).	0

- 6.2.5. Further guidance on the UFG has been prepared by the Greater London Authority and can be found here: <https://www.london.gov.uk/what-we-do/planning/implementing-london-plan/london-plan-guidance/urban-greening-factor-ugf-guidance> A UGF calculator tool has also been prepared to help applicants calculate the score of a scheme and present the score as part of their application.
- 6.2.6. Policy G6 promotes biodiversity and access to nature, though trees are not specifically mentioned.

- 6.2.7. Policy G7 is of most relevance to this report as it specifically relates to trees and woodlands:

Policy G7 Trees and woodlands

- A London's urban forest and woodlands should be protected and maintained, and new trees and woodlands should be planted in appropriate locations in order to increase the extent of London's urban forest – the area of London under the canopy of trees.
- B In their Development Plans, boroughs should:
- 1) Protect 'veteran' trees and ancient woodland where these are not already part of a protected site.
 - 2) Identify opportunities for tree planting in strategic locations.
- C Development proposals should ensure that, wherever possible, existing trees of value are retained⁷. If planning permission is granted that necessitates the removal of trees there should be adequate replacement based on the existing value of the benefits of the trees removed, determined by, for example, i-tree or CAVAT or another appropriate valuation system. The planting of additional trees should generally be included in new developments – particularly large-canopied species which provide a wider range of benefits because of the larger surface area of their canopy.

⁵ https://www.london.gov.uk/sites/default/files/the_london_plan_2021.pdf

⁶ <https://www.london.gov.uk/what-we-do/planning/london-plan/new-london-plan/london-plan-2021>

⁷ Category A, B and lesser category trees where these are considered by the local planning authority to be of importance to amenity and biodiversity, as defined by BS 5837:2012

6.3. Local Policy

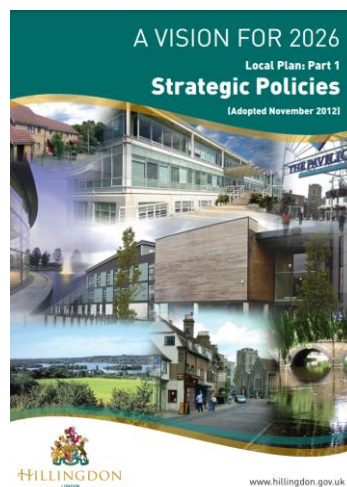
- 6.3.1. An overview of the Local Plan for the London Borough of Hillingdon may be viewed here:

<https://www.hillingdon.gov.uk/local-plan>



- 6.3.2. The Local Plan Part 1: A Vision for 2026, was adopted in 2012 and is the key planning document for the London Borough of Hillingdon. It may be downloaded here:

https://www.hillingdon.gov.uk/media/3080/Local-Plan-Part-1--Strategic-Policies/pdf/Local_Plan_Part_1_Strategic_Policies_15_feb_2013_a_1_1.pdf?m=1598370401647



Trees are discussed briefly throughout the document, but predominantly in Policies **EM4**, **EM5** and **EM7**.

- 6.3.3. Hillingdon's Development Management Policies document forms part of Local Plan Part 2; this was adopted January 2020. It can be downloaded here:

https://www.hillingdon.gov.uk/media/3084/Hillingdon-Local-Plan-Part-2-Development-Management-Policies/pdf/LPP2_Development_Management_Policies_-_ADOPTED_VERSION_JAN_2020_1.pdf?m=1598370641570

Trees are discussed within, but not limited to, Policy 5, **DMHB14**, which is summarised below:

Policy DMHB 14: Trees and Landscaping

A) All developments will be expected to retain or enhance existing landscaping, trees, biodiversity or other natural features of merit.

B) Development proposals will be required to provide a landscape scheme that includes hard and soft landscaping appropriate to the character of the area, which supports and enhances biodiversity and amenity particularly in areas deficient in green infrastructure.

C) Where space for ground level planting is limited, such as high rise buildings, the inclusion of living walls and roofs will be expected where feasible.

D) Planning applications for proposals that would affect existing trees will be required to provide an accurate tree survey showing the location, height, spread and species of trees. Where the tree survey identifies trees of merit, tree root protection areas and an arboricultural method statement will be required to show how the trees will be protected. Where trees are to be removed, proposals for replanting of new trees on-site must be provided or include contributions to offsite provision.

7. Implications for Development

- 7.1.1. This section of the report offers general advice on dealing with tree-related constraints. It is intended to assist designers working with the Tree Constraints Plan. Examples of mitigation strategies are included which may reduce potential impacts on trees. Persons familiar with BS 5837 Arboricultural Reports (e.g. tree officers) may wish to skip this section and go straight to the following Section.

7.2. Retention Categories

- 7.2.1. The Tree Constraints Plan indicates the BS 5837 Retention Categories for each tree. These should be taken into account during the design stage of any development proposals according to the following criteria:
- 7.2.2. Wherever possible, Category A trees should be retained. These are usually large trees with a relatively high amenity value. They are generally in good condition, well suited to their surroundings and with a significant life expectancy.
- 7.2.3. The retention of Category B trees is also desirable, though these trees are of lesser quality, or have a reduced life expectancy or are smaller than category A trees.
- 7.2.4. The retention of Category C trees should be seen as optional. These are usually small trees or trees of no particular merit and are not considered a material planning consideration.
- 7.2.5. Category U trees have been recommended for removal due to their poor condition and should be removed regardless of development proposals.

7.3. Root Protection Areas

- 7.3.1. The Tree Constraints Plan indicates the Root Protection Areas of each tree. This does not represent the maximum extent of rooting activity; instead, it defines the area within which the majority of roots are expected to be confined. Wherever possible, this should be left undisturbed for all trees to be retained. In which case, the trees shall be unharmed. Significant disturbances such as changes in ground level, soil compaction, excavation of trenches, or interference with oxygen and rainwater exchange may have a substantial impact on the health of the tree. (Soil compaction may be caused by vehicles, plant machinery, excessive pedestrian usage, storing of materials/spoil or by the installation of a new vehicular surface.)
- 7.3.2. Some disturbance of the Root Protection Area may be acceptable but must be kept to a minimum. Construction methods should be adopted that are sympathetic to root requirements. These are discussed below:
- 7.3.3. Concrete strip foundations should be avoided except at the very extremity of the Root Protection Area. Instead, pile/pier and beam foundations or raft foundations should be utilised. These will minimise root severance.
- 7.3.4. Hard surfaces should be installed with a minimum of excavation. The majority of roots lie within the upper soil horizons and are relatively fine. Roots do not need to be as thick as branches since they do not have to combat gravity and high winds etc. A root as thin as a finger is able to transport a lot of nutrients. Thus, excavation as shallow as 30cm can have a significant impact on the health of a tree even though large roots might not be severed. Cellular confinement systems help to reduce the amount of excavation required to give a driveway adequate strength.
- 7.3.5. Hard surfaces should ideally be porous to allow rainwater and oxygen to pass into the soil. Gravel is the ideal medium and can be retained in a cellular system to prevent rutting. Block paving and flagstones without mortar joints are good alternatives. Tarmac is not very porous; the use of a no-fines tarmac is preferable.
- 7.3.6. Trenches for underground services are commonly overlooked but can cause major damage to trees. Further arboricultural advice should be sought if underground services are to pass within Root Protection Areas. Trenchless techniques can sometimes be utilised but are not usually practical for installing drains.

- 7.3.7. If ground levels are raised, this should always be done with a loose granular material such as gravel or coarse sand. Ground levels must never be raised against the trunks of trees as this may cause them to rot.
- 7.3.8. It is sometimes possible to mitigate against root disturbance, by above-ground pruning or by improving rooting conditions for existing roots. The introduction of mycorrhizal fungi and earthworms significantly improves rooting conditions, as does the removal of competing vegetation such as grass.
- 7.3.9. Soil compaction occurs when vehicles repeatedly pass over rooting areas without some kind of structure to disperse their weight. Healthy soils will contain approximately 25% airspace. When soils become compacted, these air spaces disappear, and roots are unable to respire. It is possible to de-compact soils, but this is an expensive operation. It is preferable to avoid compaction by spreading the load of traffic passing over Root Protection Areas with the use of metal road plates or suitable boards.

7.4. Tree Canopies

- 7.4.1. Where trees are to be retained, adequate space should be allowed between buildings and tree canopies. A minimum distance of 3m is recommended. For high-quality trees (Category A or B) which have not yet reached maturity, a further allowance should be made to allow the canopies to mature without the need for extensive pruning.
- 7.4.2. For residential dwellings, the shade cast by trees should also be considered, especially where buildings are located north or northeast of sizeable trees. Some species, e.g. birch, have light, airy canopies, so shade is less of an issue. Commonly occurring trees that cast dense shade include beech, oak, ash, chestnut, sycamore, lime and most evergreen species. Shade constraints are less of an issue for garages and other non-residential buildings.
- 7.4.3. More sources of information regarding the above points can be found in Appendix 5. Crown Tree Consultancy will gladly offer any further advice, and you are invited to contact the author of this report on 01422 316660.

7.5. Arboricultural Impact Assessment

- 7.5.1. When development proposals are available, we recommend carrying an Impact Assessment before submission to the Local Planning Authority. This will identify any potential issues so that they may be resolved or mitigated.

7.6. Tree Protection During Construction

- 7.6.1. A site-specific Arboricultural Method Statement will be required to ensure that trees are protected during the construction phase. This should specify tree protection barriers, ground protection boards, foundations and hard-surface design, services installation, materials storage, and plant machinery use.

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.



Photo 13.



Photo 14.



Photo 15.



Photo 16.

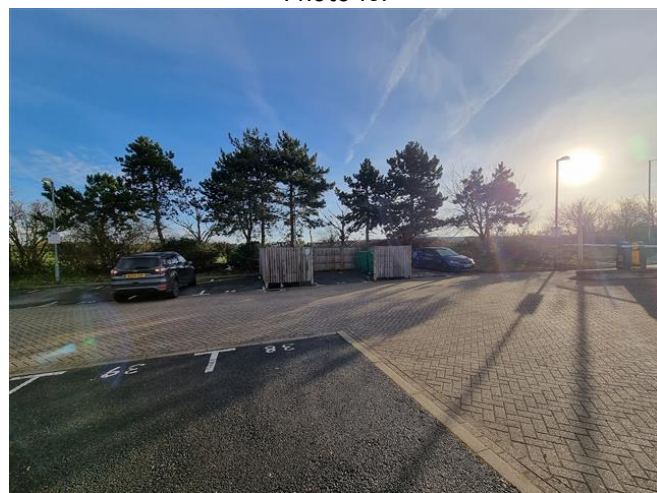


Photo 17.



Photo 18.



Photo 19.

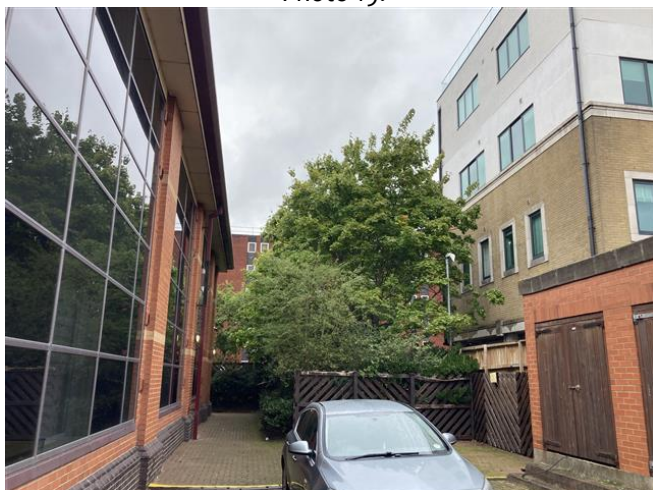


Photo 20.



Photo 21.



Photo 22.



Photo 23.



Photo 24.



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 & Surveyor'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.

Qualifications & Experience of Joe Taylor - MA ArborA, FdSc (Arboriculture)

Joe began his career in Arboriculture as a tree surgeon/climber. During his time as a tree surgeon, Joe has achieved City & Guilds NPTC qualifications in Chainsaw Maintenance and Cross Cutting, Tree Climbing and Rescue, Safe Use of Manually Fed Wood-chipper and Supporting Colleagues Undertaking Tree Related Operations.

Joe obtained a Foundation Degree in Arboriculture at Askham Bryan College in 2015 which he passed with merit. Joe is a professional member of the Arboricultural Association, the International Society of Arboriculture and the Royal Forestry Society and regularly attends industry related seminars in order to keep abreast of industry best practice.

Studying at Askham Bryan College reinforced Joe's passion for trees and drove his enthusiasm to learn more. Learning how trees interact with their surrounding environment and their importance within our urban and rural landscapes highlighted an interest in pursuing a career in consultancy.

Since working for Crown Consultants Joe has undertaken numerous surveys and produced numerous reports for the purpose of planning (BS 5837), tree condition surveys, subsidence risk assessments, root surveys and decay detection investigations.

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 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/wgfsfell.pdf/\\$FILE/wgfsfell.pdf](http://www.forestry.gov.uk/website/pdf.nsf/pdf/wgfsfell.pdf/$FILE/wgfsfell.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/tposguide

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)
										Structural Condition	Retention Category
T1	Semi-Mature Box Elder Acer negundo.	4.5	2.5	23	3.5 2 4		Form: Multi-stemmed at 2m with an unbalanced crown. History: No evidence of significant pruning. Defects: In decline. 30% of canopy is dead.	Remove deadwood and monitor.		Very Low	Low
	Moderate							1	Poor	<10 C -	
T2	Semi-Mature Norway Maple Acer platanoides.	5	2	22	3 3 3		Form: Single stemmed and vertical with a well-formed crown. History: No evidence of significant pruning. Defects: No significant defects observed.	No action required.		High	Low
	n/a							3	Good	40+ C -	
T3	Semi-Mature Norway Maple Acer platanoides.	4.5	2	21	2.5 2.5 2.5		Form: Single stemmed and vertical with a balanced crown. History: No evidence of significant pruning. Defects: Chlorotic foliage. Scattered dead twigs.	No action required.		Low	Low
	n/a							3	Poor	10-20 C	
T4	Semi-Mature Norway Maple Acer platanoides.	4.5	2	22	3 2.5 3		Form: Multi-stemmed at 2m with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects observed.	No action required.		Moderate	Low
	n/a							3	Fair	40+ C	
G5	Semi-Mature Norway Maple Acer platanoides.	av 4.5	av 2	av 20	av 3 3 3 each		Form: Four evenly spaced trees, all single stemmed and vertical with balanced crowns. History: No evidence of significant pruning. Defects: Significant deadwood to eastern most tree.	No action required.		Moderate	Moderate
	n/a							3	Fair	40+ B -	
T6	Semi-Mature Norway Maple Acer platanoides.	4	2	19	2 2 2		Form: Single stemmed and vertical with a sparse crown. History: No evidence of significant pruning. Defects: In decline. 25% of canopy is dead.	Monitor.		Very Low	Low
	Moderate							1	Poor	<10 C -	
T7	Semi-Mature Norway Maple Acer platanoides.	5	2	24	3 3.5 3		Form: Multi-stemmed at 2.5m with a well-formed crown. History: No evidence of significant pruning. Defects: No significant defects observed.	No action required.		Moderate	Low
	n/a							3	Good	40+ 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
								Priority	Inspect Freq (yrs)	Physiological Condition	Life Expectancy (yrs)
										Structural Condition	Retention Category
T8	Semi-Mature Box Elder Acer negundo.	4.5	2	23	3 2 2		Form: Multi-stemmed at 2m with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects observed.	No action required.		Moderate Good Good	Low 40+ C
	n/a							3			
T9	Semi-Mature Hornbeam Carpinus betulus.	5	1.5	10	1 1.5 0.5		Form: Single stemmed and vertical with a sparse crown. History: No evidence of significant pruning. Defects: Significant squirrel damage - significant dead bark and tear wounds. Other: Poor specimen.	No action required.		Low Poor Poor	Low <10 C -
	n/a							3			
T10	Semi-Mature Box Elder Acer negundo.	4.5	1	21	3 3 3		Form: Multi-stemmed at 2m with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects observed.	No action required.		Moderate Fair Fair	Low 20-40 C
	n/a							3			
T11	Semi-Mature Box Elder Acer negundo.	5	1	25	2 3 2		Form: Multi-stemmed at 1m with a slightly unbalanced crown. Defects: Almost dead.	Remove.		Very Low Very Poor Very Poor	Low <10 U
	Moderate							N/A			
T12	Semi-Mature Box Elder Acer negundo.	6	2	41	4 5 5		Form: Multi-stemmed at 2.5m with a well-formed crown. History: No evidence of significant pruning. Defects: No significant defects observed. Other: Slightly chlorotic foliage.	No action required.		Moderate Good Good	Low 20-40 C +
	n/a							3			
T13	Dead Box Elder Acer negundo.	3	2	6	1.5 1.5 1		Form: Multi-stemmed at 2m with a compact crown. History: No evidence of significant pruning. Defects: Very sparse canopy.	Remove.		Very Low Very Poor Fair	Dead Dead U
	Moderate							N/A			
T14	Semi-Mature Box Elder Acer negundo.	5.5	2.5	28	5 4.5 4		Form: Multi-stemmed at 2m with a well-formed crown. History: Occasional pruning wounds due to crown lifting. Defects: No significant defects observed.	No action required.		Moderate Fair Good	Low 20-40 C +
	n/a							3			

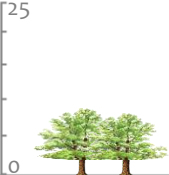






Reference G = Group H = Hedge	Age & Species	Height (m)	Crown Ht (m)	Diameter (cm)	Crown Spread (m) N W E S	Scaled Tree Diagram (m)	Notes	Recommendations (Independent of any development proposals)		Vigour	Amenity Value
										Physiological Condition	Life Expectancy (yrs)
								Priority	Inspect Freq (yrs)	Structural Condition	Retention Category
T15	Semi-Mature Norway Maple Acer platanoides.	6	2.5	21	2.5 3.5 2.5		Form: Single stemmed and vertical with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects observed.	No action required.		Moderate Good Good	Low 40+ C +
								n/a	3		
T16	Semi-Mature Norway Maple Acer platanoides.	6	2.5	21	2 3 3		Form: Multi-stemmed at 2.5m with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects observed.	No action required.		Moderate Good Good	Low 40+ C +
								n/a	3		
T17	Semi-Mature Norway Maple Acer platanoides.	6	2.5	27	4 4 4		Form: Multi-stemmed at 2.5m with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects observed.	No action required.		Moderate Good Good	Low 40+ C +
								n/a	3		
T18	Semi-Mature Norway Maple Acer platanoides.	7	2	25	3 5 4		Form: Multi-stemmed at 2.5m with a slightly unbalanced crown. History: No evidence of significant pruning. Defects: No significant defects observed.	No action required.		Moderate Good Good	Low 40+ C +
								n/a	3		
T19	Semi-Mature Norway Maple Acer platanoides.	7.5	2	33	5 5 4.5		Form: Multi-stemmed at 2.5m with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects observed.	No action required.		Moderate Good Good	Low 40+ C +
								n/a	3		
T20	Semi-Mature Norway Maple Acer platanoides.	6	2	35	4 5 4		Form: Multi-stemmed at 2.5m with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects observed.	No action required.		Moderate Good Good	Low 40+ C +
								n/a	3		
T21	Semi-Mature Norway Maple Acer platanoides.	5	2	29	4.5 2 4		Form: Multi-stemmed at 2.5m with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects observed. Other: Sparse canopy.	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
T22	Semi-Mature Italian Alder Alnus cordata.	8.5	1.5	17	2 3 2		Form: Single stemmed and vertical with a narrow, upright habit. History: No evidence of significant pruning. Defects: No significant defects observed.	No action required.		High	Low
	n/a							3	Good	40+ C	
G23	Semi-Mature Cherry Prunus sp.	av 5	av 1	av 18	av 3.5 3.5 3.5 each		Form: Two close growing specimens. History: No evidence of significant pruning. Defects: No significant defects observed. Other: Southmost has very poor form.	No action required.		Moderate	Low
	n/a							3	Fair	20-40 C	
T24	Semi-Mature Cherry Prunus sp.	5	2	22	3 3 4		Form: Single stemmed and vertical with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects observed.	No action required.		Moderate	Low
	n/a							3	Fair	20-40 C	
T25	Early-Mature Cherry Prunus sp.	8	2	33	5 6 4		Form: Single stemmed and vertical with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects observed.	No action required.		Moderate	Low
	n/a							3	Fair	20-40 C	
G26	Semi-Mature Norway Maple Acer platanoides.	av 8	av 2.5	av 25	av 5 4 5 each		Form: Row of three, all single stemmed and vertical with balanced crowns. History: No evidence of significant pruning. Defects: No significant defects observed.	No action required.		Moderate	Moderate
	n/a							3	Good	40+ B	
T27	Semi-Mature Apple Malus sp.	5	2.5	14	3 3 3		Form: Single stemmed and vertical with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects.	No action required.		Moderate	Low
	n/a							3	Good	40+ C	
T28	Semi-Mature Apple Malus sp.	5	2.5	14	3 3 3		Form: Single stemmed and vertical with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects. Other: Limited inspection, dimensions estimated.	No action required.		Moderate	Low
	n/a							3	Good	40+ 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
								Priority	Inspect Freq (yrs)	Physiological Condition	Life Expectancy (yrs)
										Structural Condition	Retention Category
T29	Semi-Mature Apple Malus sp.	8.5	3	18	3 2 3		Form: Single stemmed with a slight lean and a narrow, upright habit. History: No evidence of significant pruning. Defects: No significant defects.	No action required.		Moderate Good Good	Low 40+ C
	n/a							3			
T30	Semi-Mature Maple Acer sp.	6	2.5	24	3 4 3		Form: Multi-stemmed at ground level with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects. Other: Recorded stem diameter is equivalent for five stems (13cm, 14cm, 12cm, 9cm).	No action required.		Moderate Good Good	Low 40+ C
	n/a							3			
T31	Semi-Mature Ash Fraxinus excelsior.	7	3	12	2 2 2		Position: Situated on third party land. Form: Multi-stemmed at 2m with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects. Other: Limited inspection, dimensions estimated.	No action required.		Moderate Good Good	Low 40+ C
	n/a							3			
T32	Semi-Mature Norway Maple Acer platanoides.	7	3	18	2 3 3		Position: Situated on third party land. Form: Single stemmed and vertical with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects. Other: Limited inspection, dimensions estimated.	No action required.		Moderate Good Good	Moderate 40+ C
	n/a							3			
T33	Semi-Mature Norway Maple Acer platanoides.	7	4	9	1.5 2 1		Position: Situated on third party land. Form: Single stemmed and vertical with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects. Other: Limited inspection, dimensions estimated.	No action required.		Moderate Good Good	Low 40+ C
	n/a							3			
T34	Semi-Mature Norway Maple Acer platanoides.	6	4	18	3.5 4 4		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. Other: Limited inspection, dimensions estimated.	No action required.		Moderate Good Good	Low 40+ C
	n/a							3			
T35	Semi-Mature Norway Maple Acer platanoides.	7	5	10	0.5 2 1.5		Position: Situated on third party land. Form: Single stemmed and vertical with an unbalanced crown. History: No evidence of significant pruning. Defects: No significant defects. 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
								Priority	Inspect Freq (yrs)	Physiological Condition	Life Expectancy (yrs)
										Structural Condition	Retention Category
T36	Semi-Mature Norway Maple Acer platanoides.	10	3	25	5 4.5 4		Position: Situated on third party land. Form: Single stemmed and vertical with a balanced 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	Moderate 40+ B
								n/a	3		
G37	Semi-Mature Norway Maple Acer platanoides.	av 8	av 3	av 17	av 2 4 3 each		Position: Situated on third party land. Form: Two close growing specimens, both single stemmed and vertical with a slightly unbalanced crown. History: No evidence of significant pruning. Defects: No significant defects. Other: Limited inspection, dimensions estimated.	No action required.		Moderate Good Good	Low 40+ C
								n/a	3		
T38	Semi-Mature Norway Maple Acer platanoides.	10	4.5	18	5 5 4.5		Position: Situated on third party land. Form: Twin-stemmed at 1.5m with a slightly unbalanced crown. History: No evidence of significant pruning. Defects: No significant defects. Other: Limited inspection, dimensions estimated.	No action required.		Moderate Good Good	Low 40+ C
								n/a	3		
T39	Semi-Mature Norway Maple Acer platanoides.	8	4	15	2 3 2		Position: Situated on third party land. Form: Single stemmed and vertical with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects. Other: Limited inspection, dimensions estimated.	No action required.		Moderate Good Good	Low 40+ C
								n/a	3		
G40	Semi-Mature Field Maple, Norway Maple & Acer campestre, acer platanoides & prunus sp.	av 9	av 1	av 15	av 5 4.5 4.5 each		Position: Adjacent boundary. Form: Mixed dense group of trees. History: No evidence of significant pruning. Defects: No significant defects.	No action required.		Moderate Good Good	Moderate 40+ C
								n/a	3		
T41	Semi-Mature Cherry Prunus sp.	9	3	24	3 1 5		Form: Single stemmed and vertical with an unbalanced crown. History: No evidence of significant pruning. Defects: No significant defects.	No action required.		Moderate Good Good	Low 40+ C +
								n/a	3		
G42	Semi-Mature Oak Quercus robur.	av 11	av 3.5	av 40	av 6 7 4.5 each		Position: Situated on third party land. Form: Two close growing specimens. 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		

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)	Retention Category	
													Structural Condition
G43	Semi-Mature Field Maple Acer campestre.	av 10	av 3	av 32	av 4 4 6 each		Form: Row of close growing specimens. History: No evidence of significant pruning. Defects: Specimens have tear wounds and poor included bark unions.	Monitor.		Moderate Good Fair	Moderate 20-40 C +		
	Moderate	1.5											
T44	Semi-Mature Norway Maple Acer platanoides.	10	3	32	5 2.5 4 7		Form: Multi-stemmed at 3m with a slightly unbalanced crown. History: No evidence of significant pruning. Defects: No significant defects.	No action required.		Moderate Good Good	Moderate 40+ B		
	n/a	3											
T45	Semi-Mature Norway Maple Acer platanoides.	9	3	23	4 3 4 4		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											
T46	Semi-Mature Ash Fraxinus excelsior.	7	1.5	16	3 2.5 3 3.5		Form: Single stemmed and vertical with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects observed. Other: Ivy prevented detailed inspection.	No action required.		Moderate Good Good	Low 40+ C		
	n/a	3											
G47	Semi-Mature Oak & Hawthorn Quercus robur & crataegus monogyna.	av 6	av 2	av 10	av 3 3 3 each		Position: Situated on third party land. Form: Two close growing specimens. History: No evidence of significant pruning. Defects: No significant defects. Other: Limited inspection, dimensions estimated.	No action required.		Moderate Good Good	Low 40+ C		
	n/a	3											
T48	Semi-Mature Ash Fraxinus excelsior.	9	1.5	40	3 4 4 3.5		Form: Multi-stemmed at 1.5m with a balanced crown. History: No evidence of significant pruning. Defects: Significant included bark at primary fork & multiple bark wounds to stems.	No action required.		Moderate Poor Poor	Low 40+ C		
	n/a	1.5											
T49	Semi-Mature Ash Fraxinus excelsior.	6	1.5	38	4 4.5 4 3.5		Form: Multi-stemmed at 2m with a balanced crown. History: No evidence of significant pruning. Defects: No significant defects. Other: Ivy prevented detailed inspection.	No action required.		Moderate Fair Fair	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
G50	Semi-Mature Field Maple, Elder & Cherry <small>Acer campestre, sambucus nigra & prunus sp.</small>	av 7.5	av 2	av 16	av 6 3 2 each 4		Position: Adjacent boundary. Form: Dense group of mixed specimens. History: No evidence of significant pruning. Defects: No significant defects.	No action required.		Moderate Good Good	Low 40+ C
								n/a	3		
G51	Semi-Mature Pine <small>Pinus sp.</small>	av 9	av 2	av 25	av 2.5 3 3 each 3.5		Position: Adjacent boundary. Form: Row of similar specimens. History: No evidence of significant pruning. Defects: No significant defects.	No action required.		Moderate Good Good	Moderate 40+ B
								n/a	3		
T52	Semi-Mature Cherry <small>Prunus sp.</small>	6	2.5	32	5 5 5		Position: Adjacent boundary. Form: Multi-stemmed at 1.5m 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		
T53	Semi-Mature Himalayan Birch <small>Betula utilis.</small>	6	2	19	3.5 2.5 2 3.5		Form: Triple-stemmed at 0.5m with a slightly unbalanced crown. History: No evidence of significant pruning. Defects: No significant defects. Other: Recorded stem diameter is equivalent for three stems (10cm, 10cm, 12cm).	No action required.		Moderate Good Good	Low 40+ C
								n/a	3		
T54	Semi-Mature Beech <small>Fagus sylvatica.</small>	7	2.5	16	2.5 2 2		Form: Single stemmed and vertical with a well-formed crown. History: No evidence of significant pruning. Defects: No significant defects.	No action required.		Moderate Good Good	Low 40+ C
								n/a	3		
T55	Semi-Mature Beech <small>Fagus sylvatica.</small>	5.5	2	15	2.5 2.5 2		Form: Single stemmed and vertical with a balanced crown. History: No evidence of significant pruning. Defects: Significant dead bark at base with patches of black exudates and significant cavity developing.	Remove.		Moderate Poor Poor	Low <10 U
								Low	N/A		
T56	Semi-Mature Apple <small>Malus sp.</small>	6	2.5	20	2 2 2		Form: Multi-stemmed at 2m with a narrow, upright habit. History: No evidence of significant pruning. Defects: No significant defects. Other: Vegetation prevented detailed inspection at base.	No action required.		Moderate Good Good	Low 40+ C
								n/a	3		

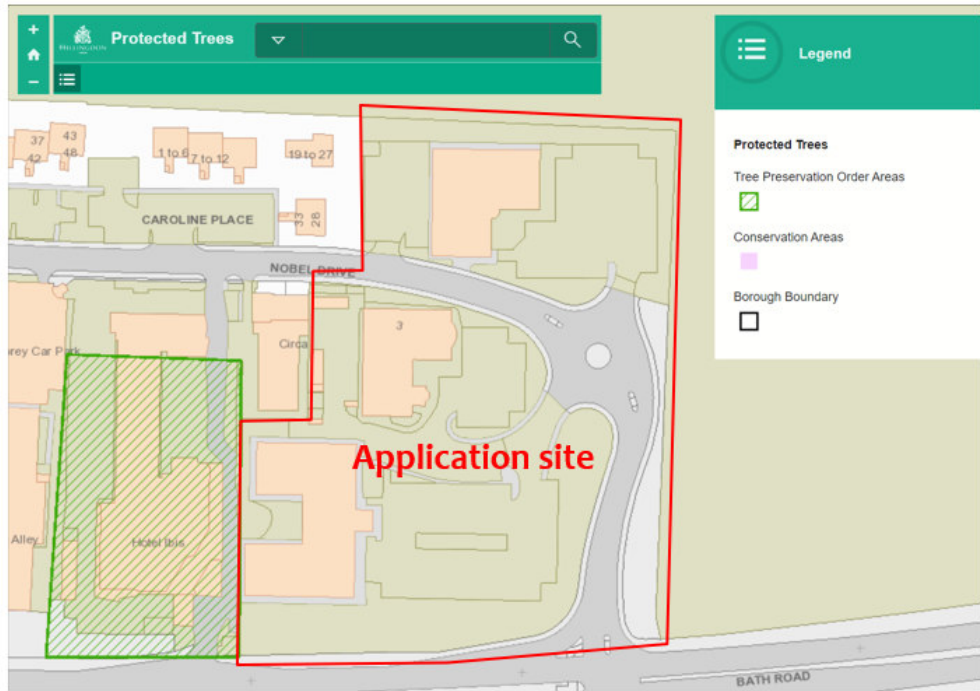
Reference G = Group H = Hedge	Age & Species	Height (m)	Crown Ht (m)	Diameter (cm)	Crown Spread (m) N W E S	Scaled Tree Diagram (m)	Notes	Recommendations (Independent of any development proposals)		Vigour	Amenity Value
								Priority	Inspect Freq (yrs)	Physiological Condition	Life Expectancy (yrs)
										Structural Condition	Retention Category
T57	Semi-Mature Apple Malus sp.	6	2.5	20	1 3 2		Form: Multi-stemmed at 2m with a narrow, upright habit. History: No evidence of significant pruning. Defects: No significant defects. Other: Ivy prevented detailed inspection.	No action required.		Moderate Good Good	Low 40+ C
								n/a	3		
G58	Semi-Mature Cherry Prunus sp.	av 6	av 2	av 20	av 3 2.5 3 each		Position: Adjacent boundary. Form: Group of similar specimens. History: No evidence of significant pruning. Defects: No significant defects.	No action required.		Moderate Good Good	Low 40+ C
								n/a	3		
G59	Semi-Mature Norway Maple Acer platanoides.	av 8.5	av 2.5	av 25	av 5 4.5 3 each		Position: Adjacent boundary. Form: Row of trees. History: No evidence of significant pruning. Defects: No significant defects.	No action required.		Moderate Good Good	Moderate 40+ B
								n/a	3		
T60	Semi-Mature Cherry Prunus sp.	7.5	0.5	28	4.5 5 4.5		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		
G61	Semi-Mature Hornbeam Carpinus betulus.	av 5	av 0.5	av 13	av 3 3 3 each		Form: Two similar specimens in a row. History: No evidence of significant pruning. Defects: No significant defects.	No action required.		Moderate Good Good	Low 40+ C
								n/a	3		
T62	Semi-Mature Cornelian Cherry Cornus mas.	5.5	1	17	2.5 2.5 2.5		Form: Multi-stemmed at 1m with a balanced crown. History: No evidence of significant pruning. Defects: Minor bark wounds to stem.	No action required.		Moderate Good Good	Low 40+ C
								n/a	3		
T63	Semi-Mature Field Maple Acer campestre.	7	1.5	25	4 4 4.5		Position: Situated on third party land. Form: Twin-stemmed specimen. History: No evidence of significant pruning. Defects: Growing against concrete fence post. Other: Limited inspection, dimensions estimated. Recorded stem diameter is equivalent for two stems (18cm, 18cm).	No action required.		Moderate Good Good	Moderate 40+ C
								n/a	3		

Photographs



Statutory Protection

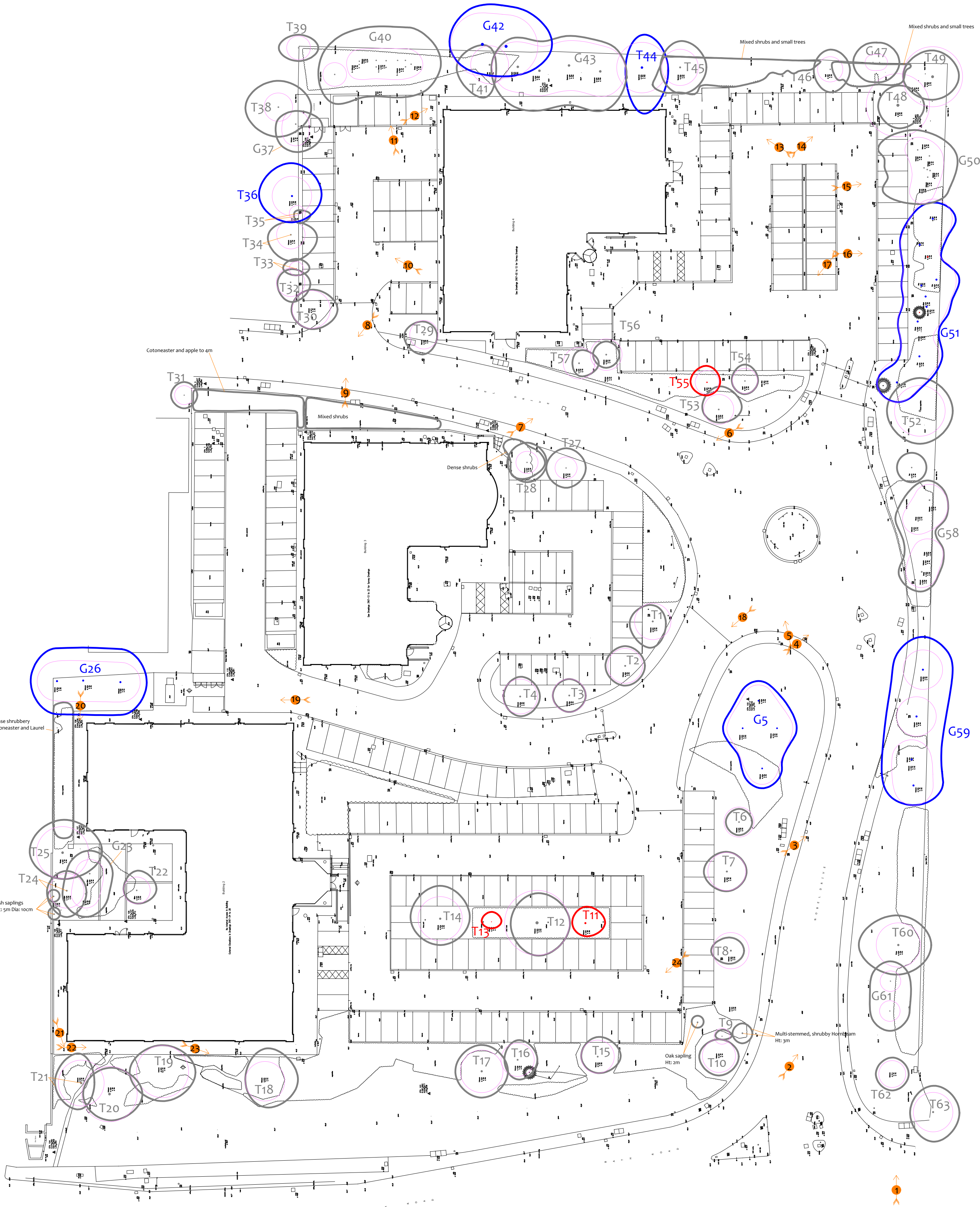
On the 13th January 2023, we accessed the local authority website. A screenshot is produced below:



This indicates that:




- The site is not within a conservation area.
- There are no tree preservation orders affecting trees within the site.
- There is a tree preservation order affecting trees immediately adjacent to the site. TPO Reference: 337.

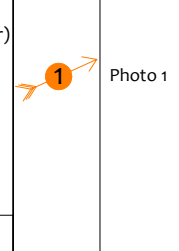
Drawing No: CCL10074B / TCP Rev: 1		Tree Retention Categories	
Title: Tree Constraints Plan (Existing Layout)		Category A tree	Trees of high quality with an estimated life expectancy of 40+ years. Usually large trees with significant presence or smaller trees with excellent form. Retention of these trees is highly desirable.
Site: Status Park, Nobel Drive, UB3 5EY		Category B tree	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.
Scale: 1:5000		Category C tree	Unremarkable trees of low quality and merit. Individual specimens are not considered to be a material planning consideration.
Paper Size: A1		Category U tree	Trees unsuitable for retention due to their very poor condition.



Tree Constraints Plan

Status: Final

	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



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 (sq m)
T1	Box Elder	4.5	2.8	24.49
T2	Norway Maple	5	2.8	22.47
T3	Norway Maple	4.5	2.5	20.45
T4	Norway Maple	4.5	2.6	22.47
G5	Norway Maple	4.5	2.4	18.43
T6	Norway Maple	4	2.3	16.40
T7	Norway Maple	5	2.9	26.51
T8	Box Elder	4.5	2.8	24.49
T9	Hornbeam	5	1.2	5.21
T10	Box Elder	4.5	2.5	20.45
T11	Box Elder	5	3.0	28.53
T12	Box Elder	6	4.9	76.87
T13	Box Elder	3	0.7	2.13
T14	Box Elder	5.5	3.4	35.60
T15	Norway Maple	6	2.5	20.45
T16	Norway Maple	6	2.5	20.45
T17	Norway Maple	6	3.2	33.57
T18	Norway Maple	7	3.0	28.53
T19	Norway Maple	7.5	4.0	49.70
T20	Norway Maple	6	4.2	55.74
T21	Norway Maple	5	3.5	38.62
T22	Italian Alder	8.5	2.0	13.36
G23	Cherry	5	2.2	15.38
T24	Cherry	5	2.8	22.47
T25	Cherry	8	4.0	49.70
G26	Norway Maple	8	3.0	28.53
T27	Apple	5	1.7	9.30
T28	Apple	5	1.7	9.30
T29	Apple	8.5	2.2	15.38
T30	Maple	6	2.9	26.51
T31	Ash	7	1.4	7.26
T32	Norway Maple	7	2.2	15.38
T33	Norway Maple	7	1.1	4.19
T34	Norway Maple	6	2.2	15.38
T35	Norway Maple	12	5	2.1
T36	Norway Maple	10	3.0	28.53
G37	Norway Maple	8	2.0	13.36
T38	Norway Maple	10	2.2	15.38
T39	Norway Maple	8	1.8	10.32
G40	Field Maple, Elder & Cherry	9	1.8	10.32
T41	Cherry	9	2.9	26.51
G42	Oak	11	4.8	72.65
G43	Field Maple	10	3.8	46.6
T44	Norway Maple	10	3.8	46.6
T45	Norway Maple	9	2.8	24.49
T46	Norway Maple	7	1.9	12.34
G47	Oak & Hawthorn	6	1.2	5.21
T48	Ash	9	4.8	72.65
T49	Ash	6	4.6	65.81
G50	Field Maple, Elder & Cherry	7.5	1.9	12.34
G51	Pine	9	3.0	28.53
T52	Cherry	6	3.8	46.6
T53	Hedera Birch	6	2.3	16.40
T54	Beech	7	1.9	12.34
T55	Beech	5.5	1.8	10.32
T56	Apple	6	2.4	18.43
T57	Apple	6	2.4	18.43
G58	Cherry	6	2.4	18.43
G59	Norway Maple	8.5	3.0	28.53
T60	Cherry	7.5	3.4	35.60
G61	Hornbeam	5	1.6	8.28
T62	Correlation Cherry	5.5	3.0	13.36
T63	Field Maple	7	3.0	28.53