



BS5837:2012 Tree Survey Report

Proposed Construction of 7 Self Contained Apartments at

23 Crescent East, Hadley Wood EN4 0EY

30th August 2023

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ENVIRONMENTAL AND
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Executive Summary

The trees on the application site have been assessed in accordance with BS 5837:2012 "Trees in relation to design, demolition and construction - Recommendations".

This tree report details the potential effects of the proposed development on the existing tree population within and in proximity to the application land at Crescent East, Hadley Wood, and provides recommendations for the protection of the trees in proximity to the development.

The proposal consists of the demolition of an existing dwelling and the construction of 7 self-contained apartments at 23 Crescent East, Hadley Wood. The development will include the construction of basement car parking, landscaping and associated works.

The report includes a survey of 26 individual trees and 2 groups of trees located both within the site and within the neighbouring property.

The site comes under the planning jurisdiction of Enfield Council, a search of the council on-line mapping tool confirms there are no trees on site that are protected by a Tree Preservation Order. The site is outside the Hadley Wood Conservation Area.

The majority of the individual trees included in the survey (20) are located within the application site around the boundaries. 4 individual trees are located within neighbouring properties to the north and west of the site. 2 individual trees are street trees located within the highway verges. The 2 groups of trees are located to the north west of the site.

In accordance with BS5857 cascade chart for tree quality assessment, the individual trees have been categorised as follows: 1 tree as A2 "trees of high quality"; 6 as B2 "trees of moderate quality"; 15 as C2 - "trees of low quality"; 4 as U "unsuitable for retention". The 2 groups of trees are both categorised as C2 - "trees of low quality".

4 individual trees located along the western boundary to the north of the site require removal to facilitate the development. The 4 trees to be removed are categorised as 3 that are C2 “trees of low quality” (T1, T2 & T4) and 1 categorised as U “unsuitable for retention” (T2). An additional tree (T7), a category C2 tree is also recommended for removal due to its poor quality.

Pruning and crown lift work may also be necessary to enable construction access where tree canopies are close to the construction activity which must be carried out as per the guidance in Section 6.

The removal of the trees will have a minor visual impact in the short term and replacement trees should be planted to mitigate this.

Recommendations have been made within the report to safeguard the retained trees and protect them from any damage from construction work including erection of protective fencing to separate from the construction activities.

As long as the recommendations within this report are fully adhered to and replacement tree planting is included within the application boundary for the proposed new development, the impact of the development can be sufficiently mitigated and the remaining trees can be retained and successfully integrated into the completed development.

1 Introduction

1.1 This tree survey report has been prepared in respect of the planning application for the demolition of an existing house and construction of 7 new self-contained apartments in order to:

- Assess the quality of the Trees in proximity to the proposed building work;
- Investigate any legal protection of the trees;
- Provide an Arboricultural Assessment with regard to the proposals; and
- Recommend measures which will suitably protect the trees during the construction process

1.2 The proposal is for the construction of 7 new apartments, including basement car parking, landscaping and associated works.

1.3 In accordance with recommended best practice, the Arboricultural information is provided within this report in accordance with BS5837:2012.

1.4 The report is based on the following drawings which have been supplied by the client's architect:

2 Limitations & Methodology

2.1 The survey is concerned with the arboricultural aspects of the site only. The trees, on site have been surveyed and classified in accordance with BS 5837:2012 "Trees in relation to design, demolition and construction - Recommendations".

2.2 The survey was undertaken using the Visual Tree Assessment (VTA) methodology to conduct a preliminary assessment of the above ground portion of the tree.

2.3 Trees are large dynamic organisms whose health and condition can change rapidly, therefore due to their changing nature and other site considerations, this report and

any recommendations made are valid for a 12-month period following the site survey which was conducted on 18th August 2023. After a period of 5 years, the information in this survey should not be relied upon.

Third Party Liability

2.4 The limit of Encon Associates Limited indemnity over any matter arising out of this report extends only to the instructing client. Encon Associates Limited cannot be held liable for any third party claim that arises following this report.

Subsistence Risk

2.5 This report is primarily concerned with the condition of existing trees and the application of current guidance for their retention. Any discussion of soil characteristics is only presented where this may have a direct effect on tree growth. This report does not seek to address the specific area of subsidence risk assessment or damage to buildings or structures.

Survey Methodology

2.6 The survey was undertaken from ground level with the aid of binoculars where necessary.

2.7 No aerial inspection nor invasive probing or drilling has been undertaken. No excavations were carried out nor soil or root samples taken.

2.8 The height of each subject tree was measured on site using an electronic Disto measuring device.

2.9 The canopy spread of each subject tree was measured on four compass points using measuring tape.

2.10 The locations of the trees have been taken from the topographical survey provided. We cannot guarantee the absolute accuracy of tree locations; however, the positions are

believed to be accurately represented based on the GPS locations used by the surveyor. Encon Associates cannot be held responsible for any discrepancy in the position of the trees.

2.11 The information contained within the “Schedule of Trees” includes the following for each surveyed tree:

- 1 **Tree reference number** - cross referenced with the Tree Survey Plan A6070-01 and Tree Constraints Plan A6070-02 and Tree Protection Plan A6070-03.
- 2 **Species** - have been given their common and botanical name where specifically known
- 3 **Height** - measured on site using an electronic Disto measuring device
- 4 **Stem diameter** - have been calculated by measuring the circumference at a height of 1.5m from ground level to determine the diameter
- 5 **Branch spread** - the circles indicated on the tree survey plan are a representation of the overall spread of the crown in each compass direction
- 6 **Height of crown clearance** - given in metres above adjacent ground level
- 7 **Age class** - young (YNG) up to 10 years, 1/3 life expectancy semi-mature (SM), early mature (EM) 2/3 life expectancy, mature (M) over 2/3 life expectancy, over mature (OM) declining/moribund, veteran (V) exceptionally old tree towards the end of its life, (D) dead
- 8 **Condition & Comments** - good (G) sound tree needing little or no attention, fair (F) minor but rectifiable defects, poor (P) major structural and/or physiological defects that would be inappropriate to retain and/or expensive, dead (D) no longer alive or those dying and unlikely to recover. General observations on ‘physiological/structural condition’ and ‘preliminary management’ is also provided
- 9 **Estimated remaining contribution** - in years e.g. <10, 10+, 20+ and 40+
- 10 **Category grading** - have been given a grade to classify the quality of each tree based on the Condition Classes and subcategories given overleaf
- 11 **RPA** - Protective measures as per BS 5837 section 4.6 which states that an area based on a radius equal to 12 times the stem diameter should be protected against damage to roots known as the “Root Protection Area” (RPA) given in m². A radius has also been given shown around each tree on the drawing.

2.12 Category grading for the assessment of tree quality (in accordance with Table 1 "Cascade chart for tree quality assessment" within BS 5837:2012) is described below:

- U Trees unsuitable for retention** - Those in such a condition that they cannot be realistically retained as living trees in the context of the current land use for longer than 10 years
- A Trees of high quality** - With an estimated remaining life expectancy of at least 40 years
- B Trees of moderate quality** - With an estimated remaining life expectancy of at least 20 years
- C Trees of low quality** - with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm

2.13 Subcategories grading for the assessment of tree quality (in accordance with Table 1 "Cascade chart for tree quality assessment" within BS 5837:2012) is described below:

- 1 Mainly arboricultural qualities** - Trees that are a particularly good example of their species, especially if rare or unusual
- 2 Mainly landscape qualities** - Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features
- 3 Mainly cultural values, including conservation** - Trees, groups or woodlands of significant conservation, historical, commemorative or other value eg veteran trees or wood-pasture

For full description of subcategories, refer to Table 1, page 9 of the BS 5837:2012 document.

3 Project Requirements & Site Overview

Site Context

- 3.1 The site is located on Crescent East, in the north London suburb of Hadley Wood. Hadley Wood is part of the London Borough of Enfield and lies 2.6km north east of Chipping Barnet.

- 3.2 The existing site is a private residential dwelling on the north side of Crescent East. The property is a detached house with adjoining garages and landscaped gardens to the front and rear.
- 3.3 Crescent East is a residential street with significant tree cover including street trees lining the avenue. Immediately west of the site is the Green Trees Care Home, offering a range of residential care for older people.
- 3.4 Crescent East becomes Crescent West 400m west of the application site close to Hadley Wood Rail station. Both the east and west crescent connect to Camlet Way which runs east to Enfield and west to Barnet.
- 3.5 Beyond the residential areas, Hadley Wood is surrounded by green and open spaces with a golf course to the east, mature woodland to the south and large areas of agricultural land.

Proposed Development

- 3.6 The planning application proposes to demolish the existing residential dwelling and construct 7 new self-contained apartments. The proposal includes basement parking, landscaping and associated works.
- 3.7 The development is on Crescent East, a residential street in Hadley Wood.

4 Baseline Factors

Tree Preservation Orders (TPO) or Conservation Area (CA) Designation

- 4.1 The site comes under the planning jurisdiction of Enfield Council, a search of the council on-line mapping tool confirms there are no trees on site that are protected by a Tree Preservation Order.

- 4.2 The site is adjacent to but falls just outside the Hadley Wood Conservation Area which lies to the west and south of the site.
- 4.3 See Appendix E for confirmation.

Existing Trees on Site

- 4.4 There are 26 individual trees included in the survey which are located around the site boundaries. 20 of these trees are within the site itself; 3 (T11-T13) are located within the neighbouring property to the north of the site; 1 (T26) is located within a neighbouring property to the west of the site; 2 (T24 & T25) are street trees located within the highway verges to the front of the property.
- 4.5 In accordance with BS5857 cascade chart for tree quality assessment, the individual trees have been categorised as follows: 1 tree as A2 “trees of high quality”; 6 as B2 “trees of moderate quality”; 15 as C2 - “trees of low quality”; 4 as U “unsuitable for retention”.
- 4.6 The individual trees are a mix of species including Laurel, Cherry, Ash, Sycamore, Cypress, Beech, Willow, Silver Birch, Apple and Lime.
- 4.7 In addition, 2 groups of trees are included, both of which are located along the western boundary to the north of the site. Both groups are categorised as C2 - “trees of low quality”. The groups form a sparse Laurel hedgerow either side of a concrete path.
- 4.8 Details of the locations and Root Protection Areas (RPA) are provided on the Tree Protection Plan (TPP) appended to this report.
- 4.9 A schedule of trees and their condition including their category grading and RPA radius is attached in Appendix A.

Root Protection Area (RPA)

- 4.10 The Root Protection Area (RPA) of a tree is defined in BS5837 as the area surrounding the trunk that contains sufficient rooting volume to ensure the survival of the tree and is calculated as an area based on the stem diameter of the tree.
- 4.11 The RPA's have been calculated in accordance with BS5837 and are detailed in the Tree Schedule located in Appendix A of this report. Where ground constraints have, or are likely to have, had an effect on tree root development, for example, where level changes or changes in rooting medium eg heavily compacted ground, areas of hard standing etc, have influenced tree root growth, the RPA is unlikely to follow an exact circle and will probably be more elliptical in shape.
- 4.12 Tree root systems are typically concentrated within the uppermost 600mm of the soil, although it may be deeper within the dense mass of roots and soil closer to the base of the tree. The development of the root system is influenced by the availability of water, nutrients, oxygen and soil penetrability i.e. how compacted the ground is and therefore the root spread does not generally show the symmetry seen in the branch system. The root systems of all trees are expected to have been affected by their growing environment. Therefore roots of some of the trees are likely to have been influenced by their proximity to adjacent hard standing and infrastructure or level changes with the morphology and disposition of the root system, being drawn deeper, or diverted away from compacted ground and paving subbases in those instances.
- 4.13 The footprint of the proposed construction work encroaches within the RPA of 2 of the trees that are to be retained (T24 & T25) which are both located in the highway verge on Crescent East to the front of the property.

5 Arboricultural Impact Assessment

5.1 This section considers the implications that the proposed development may have upon the existing trees within and adjacent to the site and provides advice on solutions to any issues to ensure the retained trees are safeguarded.

5.2 4 individual trees require removal to facilitate the proposed development. Some crown lift and pruning work will also be necessary. An additional tree (T7), a category C2 tree is also recommended for removal due to its poor quality.

5.3 The details of the 4 individual trees to be removed are as follows:

Tree Ref	Species	Category	Comments
T1	Cherry Laurel	C2 Low Quality	Part of boundary hedge
T2	Apple	C2 Low Quality	
T3	Cherry	U - Unsuitable for Retention	Leaning significantly north
T4	Cherry	C2 Low Quality	Part of boundary hedge
T7	Silver Birch	C2 Low Quality	Located in open garden

5.4 As the trees are not covered by a TPO and do not lie within the conservation area, no application is required to carry out tree works and there is no legal impediment to the tree being removed or works carried out to trees by the land owner.

5.5 21 individual trees and the remaining group of trees can be retained and integrated into the new development.

5.6 Although trees T24 and T25 are located off site, the roots are located beneath the existing footway and based on the RPA calculated, likely to extend into the development site. The proposed development includes alterations and resurfacing of the existing

drive area in proximity to these trees. As long as the levels are not altered in this area and the existing sub-base is to be retained in place, there will be no detrimental impact to any existing tree roots which may be present in this area.

- 5.7 Recommendations have been made within the report to safeguard the retained trees and protect them from any damage from construction work including erection of protective fencing to separate from the construction activities.
- 5.8 The removal of the trees will have a visual impact in the short term. However, once replacement trees are established this effect will be sufficiently mitigated.
- 5.9 Prior to the removal of any trees, the contractor and/or tree surgeon appointed to carry out the works must ensure any necessary regulations and/or felling licences in accordance with BS5837 are complied with and in place.

Planting of New Trees and Landscaping Alterations

- 5.10 It is recommended that replacement trees are planted to mitigate the trees being removed.
- 5.11 The specification for the trees is recommended to be 2-2.5m high, pit planted including timber stake and rubber spacer to secure the trees in an upright position in order to provide instant visual presence.
- 5.12 The planting of new trees and hedgerow within the RPA of any of the retained trees must be done carefully by hand. Planting holes should be dug carefully by hand avoiding any existing roots which may be encountered. New planting locations should be adjusted to avoid roots if they are encountered. No roots should be damaged or cut when planting new shrubs in this area.

6 Tree Protection Method Statement

6.1 This section describes in detail the specific measures that should be implemented to protect the trees to be retained from harm during the construction process. A full tree protection method statement is included in Appendix C.

Protective Fencing

6.2 The remaining existing trees within or in proximity to the application boundary which are to be retained should be protected from damage during construction operations by fencing them off from machinery circulation routes and material storage areas. The distance from the trees to the construction activity is such that damage could occur and therefore construction vehicles should be prevented from unwittingly travelling too close to the trees and causing damage to overhanging branches or compaction of the root zone.

6.3 Protective fencing as detailed in Appendix C of this report should be erected in front of the line of trees as demonstrated on the Tree Protection Plan, prior to the commencement of work to form a construction exclusion zone to prevent the storage of materials within the landscaping areas. Where temporary construction access is needed for works within the area fenced off, in accordance with BS5837:2012, this should be facilitated by a set-back in the alignment of the tree protection barrier. The fencing should be moved back to its original location following completion of surfacing in this area, as shown on the Tree Protection Plan in order to protect the trees throughout the remainder of the construction process. In these areas, suitable existing hard surfacing should be retained to act as temporary ground protection during construction, rather than being removed during demolition. Where the set back of the protective fencing would expose unmade ground to construction damage or compaction, new temporary ground protection should be installed prior to working on site.

Avoiding physical damage to the roots during construction

- 6.4 A number of planned operations detailed in this section have the potential to impact roots, such as constructing new surfacing and excavating foundations. To avoid damage to roots, existing ground levels should be retained within the RPA, and topsoil should be retained in-situ in this area. Limited manual excavation may be acceptable provided it is carried out using hand-held tools only and preferably by compressed air soil displacement.
- 6.5 Should any roots be encountered, they should not be damaged and any exposed should be wrapped in dry, clean hessian sacking to prevent desiccation and to protect from rapid temperature changes. Wrapping should be removed prior to backfilling.
- 6.6 Roots smaller than 25mm diameter may be pruned back, making a clean cut with a sharp tool (secateurs or handsaw), except where they occur in clumps. Roots occurring in clumps or of 25mm diameter or more should be severed only following consultation with an arboriculturist, as such roots may be essential to the tree's health and stability.
- 6.7 Prior to backfilling, retained roots should be surrounded by topsoil or compacted sharp sand (not builders' sand due to its high salt content which is toxic to tree roots), or other loose granular fill, before soil or other suitable material is replaced. The material should be free of foreign objects that have the potential to cause injury to the roots.

Tree Pruning

- 6.8 The working and access space needed for the construction of the proposed development and resurfacing works may require "access facilitation pruning" carried out to some of the trees in closer proximity to the works to prevent injurious contact between construction plant and the tree canopy. A one-off tree pruning operation, which is directly necessary to provide access for operations on site, is acceptable in accordance

with BS5837 as long as “the nature and effects of the pruning are without significant adverse impact on the tree physiology or amenity value”.

6.9 All proposed tree works should be undertaken prior to the commencement of construction activities. Trees on site which have been identified to have their crowns lifted and/or access facilitation/ formative pruning must be carried in accordance with BS3998 British Standard Tree Work - Recommendations 2010 by a competent tree surgeon to the following specification:

- Where practicable, pruning should be restricted to healthy, small diameter parts of the tree to minimise the size of resultant wounds and enable these to be occluded.
- Crown lifts should include complete removal of the lowest primary branches and thereafter secondary and tertiary branches (not exceeding 50mm diameter cuts). When pruning branches back to the main stem or fork, the branch will be removed in small sections using the step cut method leaving a small stub before carrying out the final cut. Crown lifting should preferably not result in the removal of more than 15% of the live crown height, and the remaining live crown should make up at least two-thirds of the height of the tree.
- Formative pruning to branches 20mm and less in diameter to be pruned cleanly back to its point of origin, avoiding damaging the bark of the tree and ensuring the canopy maintains a natural shape. Growth greater than 20mm is to be cut back to avoid damage to the branch bark ridge and collar if applicable. All pruning carried out using a sharp handsaw or secateurs. On no account will a chainsaw be used in this operation. All shoots will be removed back to, but not into the branch collar leaving no projections or exaggerating the size of the wound.

Construction of New Surfacing

- 6.10 BS5837 contains Design Recommendations (7.4.2) where hard surfacing is proposed within the RPA of existing trees.
- 6.11 In accordance with BS5837, the part of a tree most susceptible to damage is the root system and therefore no excavations should be carried out with machinery which could damage or sever major roots. Damage can also be caused to the roots by building up material to raise existing levels within the RPA.
- 6.12 New permanent hard surfacing should not exceed 20% of any existing unsurfaced ground within the RPA.
- 6.13 2 existing trees to be retained have RPA's which encroach into areas of existing paved surfacing and unpaved soft landscaping. The proposals include some re-surfacing work in those areas. As long as the resurfacing retains the existing sub-base and does not reduce existing ground levels, there will be no detrimental impact to the existing tree roots.
- 6.14 Root Protection Area shown as a dashed black circle around T24 extends into the application site. The proposed driveway mainly sits on top of the existing drive with the exception of a small area which is less than 1% of the RPA and will therefore have no detrimental impact to the existing tree, as per 6.12 above.
- 6.15 Root Protection Area shown as a dashed black circle around T25 also extends into the application site. A proposed footpath and car parking space is located within existing shrub/lawn area within the RPA of the tree. The encroachment is 4% of the RPA and will therefore have no detrimental impact to the existing tree, as per 6.12 above.
- 6.16 Whilst it is unknown if any roots will actually be encountered, care must be taken when constructing the new surfacing within the RPA of existing trees to be retained. All work

should be carried out by hand and not with machinery which could cause damage to the roots by severing them or compacting them. Any roots encountered should not be damaged and any exposed should be wrapped in dry, clean hessian sacking to prevent desiccation and to protect from rapid temperature changes, until the new surfacing is constructed.

Installation of New Fencing

6.17 To ensure the existing trees are not damaged during the installation of any new fencing or knee rail, the following procedures are to be strictly adhered to:

- The dashed line around each tree indicates the Root Protection Area (RPA) as calculated within the Tree Survey Report and shown on the Tree Protection plan.
- Prior to commencing any work on site, Heras type fencing is to be installed as per the detail appended to this report to separate the trees from the work
- No excavations using machinery is permitted
- Holes for fence posts are to be carefully dug by hand avoiding damage any roots which may be encountered
- No storage of materials or mixing of cement is to take place within RPA around each tree and should be done well away from the trees
- No machinery or vehicles to travel within the RPA around each tree
- Holes excavated for fence posts to be lined with polythene prior to pouring concrete to prevent cement coming into contact with any tree roots which may be present
- Extreme care to be taken when installing fence posts and panels to prevent damage to trunk or branches of the trees

Construction of Foundations

6.18 BS5837 contains Special Engineering for Foundations within the RPA (7.5) where structures are proposed within the RPA of existing trees.

6.19 The footprint of the proposed new building does not extend within the RPA of any of the existing trees to be retained, therefore no special foundations are required.

Conclusions

7.1 The proposal is for the demolition of an existing dwelling and the construction of 7 self-contained apartments at 23 Crescent East, Hadley Wood. The development will include the construction of basement car parking, landscaping and associated works.

- The report includes a survey of 26 individual trees and 2 groups of trees located both within the site and within proximity of the development.
- The site comes under the planning jurisdiction of Enfield Council, a search of the council on-line mapping tool confirms there are no trees on site that are protected by a Tree Preservation Order. The site is located outside the Hadley Wood Conservation Area.
- In accordance with BS5857 cascade chart for tree quality assessment, the individual trees have been categorised as follows: 1 tree as A2 “trees of high quality”; 6 as B2 “trees of moderate quality”; 15 as C2 - “trees of low quality”; 4 as U “unsuitable for retention”. The 2 groups of trees are both categorised as C2 - “trees of low quality”.
- 4 individual trees located along the western boundary to the north of the site require removal to facilitate the development. The 3 trees to be removed are categorised as C2 “trees of low quality” and 1 is categorised as U “unsuitable for retention”. An additional tree (T7), a category C2 tree is also recommended for removal due to its poor quality.
- Pruning and crown lift work may also be necessary to enable construction access where tree canopies are close to the construction activity which must be carried out as per the guidance in Section 6.
- Recommendations have been made within the report to safeguard the retained trees and protect them from any damage from construction work including erection of protective fencing to separate from the construction activities.

- 7.2 As long as the recommendations within this report are fully adhered to and replacement tree planting is included within the application boundary for the proposed new development, the impact of the development can be sufficiently mitigated and the remaining trees can be retained and successfully integrated into the completed development.

Appendix A - Schedule of Trees

Site: 23 Crescent East

Date: 18th August 2023

Weather: Damp, Showers

Ref	Species	Height (m)	Stem Diameter (mm)	Branch spread (m)				Height crown clearance (m)	Age class	Condition & Comments	Years left	Category grading	RPA (m ²)	RPA radius
				N	E	S	W							
T1	Prunus laurocerasus (Cherry Laurel)	9	300	4.0	4.0	4.0	4.0	1	M	Fair. Part of boundary hedge.	20	C2	41	3.60
G1	Prunus laurocerasus (Cherry Laurel)	8	75-100	2.0	2.0	2.0	2.0	1	M	Poor. Sparse Laurel hedgerow either side of concrete path.	20	C2	5	1.20
G2	Prunus laurocerasus (Cherry Laurel)	8	75-100	2.0	2.0	2.0	2.0	1.5	M	Poor. Sparse Laurel hedgerow either side of concrete path.	20	C2	5	1.20
T2	Malus domestica (Apple)	7	225	3.0	3.0	3.0	3.0	2.5	M	Fair.	20	C2	23	2.70
T3	Prunus avium (Sweet Cherry)	8	385	7.0	1.0	2.0	2.0	0.5	M	Poor. Leaning significantly to the north with canopy close to ground level.	<10	U	67	4.62
T4	Prunus avium (Sweet Cherry)	11	250	4.0	4.0	4.0	4.0	1	M	Fair. Part of western boundary hedge.	20	C2	28	3.00
T5	Chamaecyparis lawsoniana (Lawson Cypress)	17	415	3.5	3.5	3.5	3.5	3	EM	Fair. On the western site boundary.	20	C2	78	4.98
T6	Chamaecyparis lawsoniana (Lawson Cypress)	17	375	3.5	3.5	3.5	3.5	4	EM	Fair. On western boundary.	20	C2	64	4.50

Site: 23 Crescent East

Date: 18th August 2023

Weather: Damp, Showers

Ref	Species	Height (m)	Stem Diameter (mm)	Branch spread (m)				Height crown clearance (m)	Age class	Condition & Comments	Years left	Category grading	RPA (m ²)	RPA radius
				N	E	S	W							
T7	Betula pendula (Silver Birch)	6	100	1.5	1.5	1.5	1.5	1	SM	Fair.	20	C2	5	1.20
T8	Chamaecyparis lawsoniana (Lawson Cypress)	16	300	3.0	3.0	3.0	3.0	2	EM	Good.	20+	B2	41	3.60
T9	Fraxinus excelsior (Ash)	15	200	3.5	3.5	3.5	3.5	1.8	EM	Very Good. Near rear northern boundary.	40+	A2	18	2.40
T10	Acer pseudoplatanus (Sycamore)	13	300	6.0	3.0	4.5	4.5	2.5	EM	Poor. Leaning into adjacent property beyond northern	<10	U	41	3.60
T11	Chamaecyparis lawsoniana (Lawson Cypress)	16	575	3.5	3.5	3.5	3.5	2	EM	Fair. In adjacent garden beyond northern boundary.	20	C2	150	6.90
T12	Salix sp (Willow)	18	575	7.0	7.0	7.0	7.0	0	M	Fair. Appears to have been coppiced in recent years and has an uneven canopy. Located in adjacent garden beyond northern boundary.	20	C2	150	6.90
T13	Taxus baccata (Yew)	6	Multi	2.0	3.0	2.0	5.0	0.5	M	Fair. In adjacent garden. Splits into 1 x 200mm and 2 x 100mm stems.	20	C2	27	2.93
T14	Fagus sylvatica (Beech)	9	250	4.0	4.0	4.0	4.0	1.5	M	Fair.	20	C2	28	3.00

Site: 23 Crescent East

Date: 18th August 2023

Weather: Damp, Showers

Ref	Species	Height (m)	Stem Diameter (mm)	Branch spread (m)				Height crown clearance (m)	Age class	Condition & Comments	Years left	Category grading	RPA (m ²)	RPA radius
				N	E	S	W							
T15	Aesculus hippocastanum (Horse Chestnut)	7	250	3.5	3.5	3.5	3.5	1	YM	Fair.	20	C2	28	3.00
T16	Aesculus hippocastanum (Horse Chestnut)	7	250	3.5	3.5	3.5	3.5	1	YM	Fair.	20	C2	28	3.00
T17	Abies sp (Fir)	14	385	3.0	3.0	3.0	3.0	1.5	EM	Fair.	20	C2	67	4.62
T18	Betula pendula (Silver Birch)	15	200	3.5	3.5	3.5	3.5	1.2	EM	Fair.	20	C2	18	2.40
T19	Acer pseudoplatanus (Sycamore)	8	300	3.5	3.5	3.5	3.5	2	EM	Good.	20+	B2	41	3.60
T20	Malus domestica (Apple)	7	300	4.0	4.0	4.0	4.0	2	M	Fair	20	C2	41	3.60
T21	Salix matsudana Tortuosa (Corkscrew Willow)	8	300	4.0	4.0	4.0	4.0	2	M	Good.	20+	B2	41	3.60
T22	Cupressus leylandii (Leyland Cypress)	11	300	3.5	3.5	3.5	3.5	2.5	M	Poor. Part of a pair of conifers that appear to have been recently reduced in height and left in an unnatural shape.	<10	U	41	3.60

Site: 23 Crescent East

Date: 18th August 2023

Weather: Damp, Showers

Ref	Species	Height (m)	Stem Diameter (mm)	Branch spread (m)				Height crown clearance (m)	Age class	Condition & Comments	Years left	Category grading	RPA (m ²)	RPA radius
				N	E	S	W							
T23	Cupressus leylandii (Leyland Cypress)	11	385	3.5	3.5	3.5	3.5	2.5	M	Poor. Part of a pair of conifers that appear to have been recently reduced in height and left in an unnatural shape.	<10	U	67	4.62
T24	Tilia x europaea (Lime)	17	675	6.0	6.0	6.0	6.0	4	M	Good. Located off site within highways verge. Roots extend under footway and existing driveway.	20+	B2	206	8.10
T25	Tilia x europaea (Lime)	18	800	6.0	6.0	6.0	6.0	4	M	Good. Located off site within highways verge. Roots extend under footway and existing driveway.	20+	B2	290	9.60
T26	Cupressus leylandii (Leyland Cypress)	16	300	2.0	2.0	2.0	2.0	1.8	YM	Good. In neighbouring property	20+	B2	41	3.60

Appendix B - Tree Survey Plan & Tree Protection Plan



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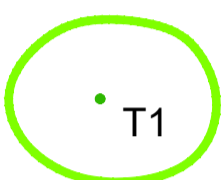
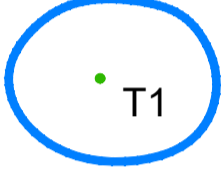
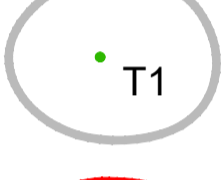
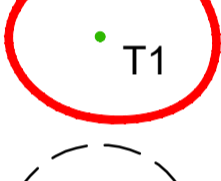

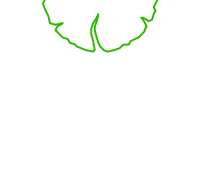
Notes:

Key to Tree Survey Plan

The RPA (Root Protection Area) is the zone in which the root system is believed to be concentrated, has been calculated for each tree within the site boundary. The results can be found with the Tree Report.

This drawing is based on:

- Topographical Survey, Dwg. No: 521022-1 by Alan Cox Associates, dated July 2023
- Site visit by Encon Associates, 18.08.23

-  **Class A**
-  **Class B**
-  **Class C**
-  **Class U**
-  **RPA shown as a dashed circle around each tree**
-  **Other trees off site beyond influence and not included in the survey**

Rev	Date	Description	Drawn	Checked
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Client
Dalkey Developments

Project
**23 Crescent East
Hadley Wood
EN4 0EY**

Title
Tree Location Plan

Drawing Status
FOR PLANNING APPROVAL

Drawn	MJB	Checked	LB
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Date	18.08.23	Scale (A1)	1:200
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associates

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NG5 7DR

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Environmental Consultants to the Construction Industry

■ BREEM ■ Code for Sustainable Homes Assessors ■ Landscape Architecture ■ Highway Engineers
■ Life Cycle Costing ■ Energy Assessments ■ SAP ■ EPC ■ BREEAM ■ Daylight Calculations

Job Number	Drawing Number	Rev
A6070	01	



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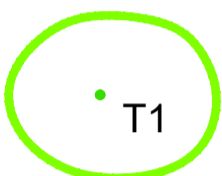
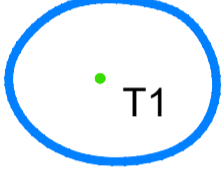
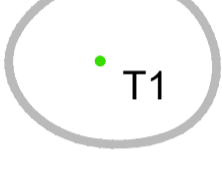
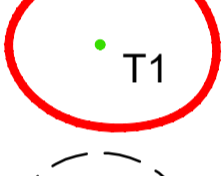


Notes:

Key to Tree Survey Plan

The RPA (Root Protection Area) is the zone in which the root system is believed to be concentrated, has been calculated for each tree within the site boundary. The results can be found with the Tree Report.

This drawing is based on:

- Topographical Survey, Dwg. No: 521022-1 by Alan Cox Associates, dated July 2023
- Revised site plan issue 15.08.23
- Site visit by Encon Associates, 18.08.23

-  **Class A**
-  **Class B**
-  **Class C**
-  **Class U**
-  **RPA shown as a dashed circle around each tree**
-  **Other trees off site beyond influence and not included in the survey**
- **Layout of proposed site**

Rev	Date	Description	Drawn	Checked

Client
Dalkey Developments

Project
**23 Crescent East
Hadley Wood
EN4 0EY**

Title
Tree Constraints Plan

Drawing Status
FOR PLANNING APPROVAL

Drawn	MJB	Checked	LB
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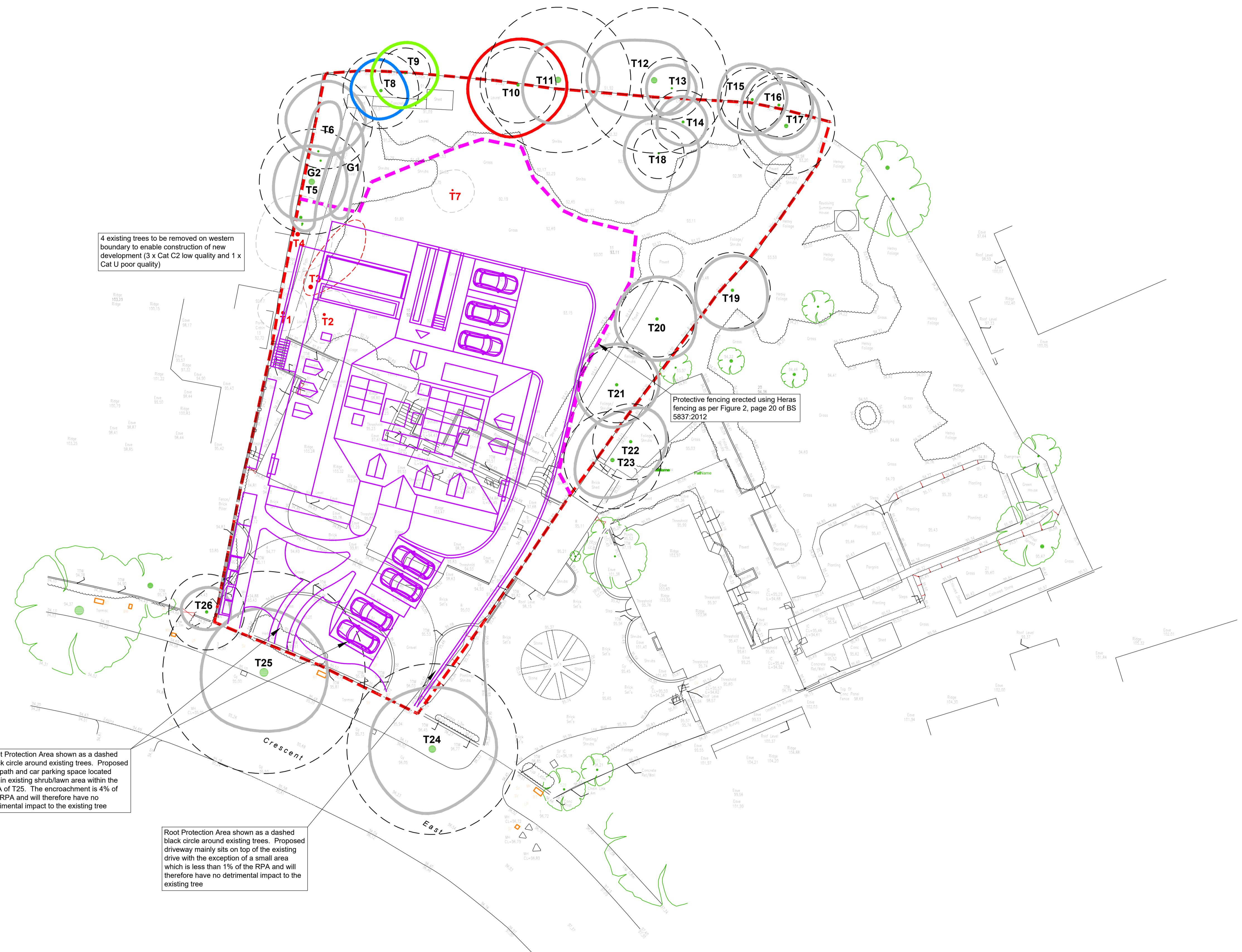
Date	18.08.23	Scale (A1)	1:200
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■ Life Cycle Costing ■ Energy Assessments ■ SAP ■ EPC ■ BREEAM ■ Daylight Calculations

Environmental Consultants to the Construction Industry

Job Number	Drawing Number	Rev
A6070	02	



4 existing trees to be removed on western boundary to enable construction of new development (3 x Cat C2 low quality and 1 x Cat U poor quality)

Protective fencing erected using Heras fencing as per Figure 2, page 20 of BS 5837:2012

Root Protection Area shown as a dashed black circle around existing trees. Proposed footpath and car parking space located within existing shrubland area within the RPA of T25. The encroachment is 4% of the RPA and will therefore have no detrimental impact to the existing tree

Root Protection Area shown as a dashed black circle around existing trees. Proposed driveway mainly sits on top of the existing drive with the exception of a small area which is less than 1% of the RPA and will therefore have no detrimental impact to the existing tree

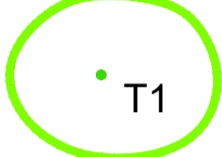
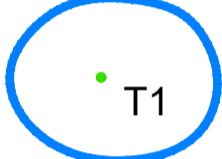
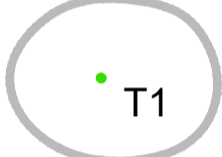
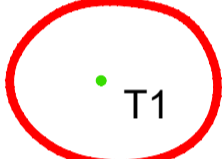
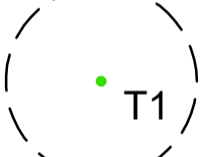



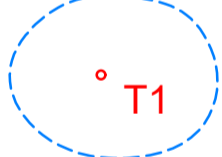
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Notes:

Key to Tree Survey Plan
The RPA (Root Protection Area) is the zone in which the root system is believed to be concentrated, has been calculated for each tree within the site boundary. The results can be found with the Tree Report.

- This drawing is based on:
- Topographical Survey, Dwg. No: 521022-1 by Alan Cox Associates, dated July 2023
 - Revised site plan issue 15.08.23
 - Site visit by Encon Associates, 18.08.23

-  Class A
-  Class B
-  Class C
-  Class U
-  RPA shown as a dashed circle around each tree
-  Other trees off site beyond influence and not included in the survey
-  Layout of proposed site
-  Location of protective fencing
-  Trees to be removed

A 10.10.23 T7 removed and fence adjusted MJB GM

Rev	Date	Description	Drawn	Checked

Client
Dalkey Developments

Project
**23 Crescent East
Hadley Wood
EN4 0EY**

Title
Tree Protection Plan

Drawing Status
FOR PLANNING APPROVAL

Drawn	MJB	Checked	LB
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Date	18.08.23	Scale (A1)	1:200
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10 Chapel Lane
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Environmental Consultants to the Construction Industry
BREEM Code for Sustainable Homes Assessors Landscape Architecture Highway Engineers
Life Cycle Costing Energy Assessments SAP EPB BREEAM Daylight Calculations

Job Number	Drawing Number	Rev
A6070	03	A

Appendix C - Method Statement for Tree Protection

The following Arboricultural Method Statement should be followed by the contractor:

1.1 Root Protection Area (RPA)

The RPA required by the current edition of BS 5837:2012 relates to the stem diameter of each tree when measured at a height of 1.5m from ground level, adjusted where necessary to account for actual rooting patterns on site. The RPAs are to be afforded protection at all times and will be protected by fencing barriers. No works will be undertaken within any RPA that causes compaction to the soil or severance of tree roots.

2.0 Protective Fencing

A protective fence should be erected prior to the commencement of any site works e.g. before any materials or machinery are brought on site, any construction work starts or any stripping of soil commences. The barrier needs to have signs attached stating that this is a Tree Protection Area and that no works are permitted within the barrier. The barrier may only be removed following completion of all construction works.

2.1 The fence is required to be sited in accordance with the TCP. The fence must ideally be constructed as per figure 2 in BS 5837:2012 (see detail at the end of this section) and be fit for the purpose of excluding any construction activity. The construction on site should be excluded from the RPA with 'Heras' type Fencing construction, along with a formal briefing of any work person by the site manager with regards to the contents of this method statement.

3.0 Precautions in respect of Temporary Works

If temporary access is required to an RPA then access may only be gained after consultation with the Local Planning Authority and following placement of materials such as geo-textile fabrics that will spread the weight of any vehicular load and prevent compaction to the soil. For pedestrian movements within any RPA then a single thickness scaffold board on top of a compressible layer laid onto a geotextile fabric may be acceptable. Otherwise, there should be no access within the RPA at any time during the contract.

4.0 Access Details

There is no requirement for any special measures related to the retained trees if access for all construction vehicles is kept away from the trees to be retained and stay outside of the RPA.

5.0 Contractors Car Parking

This is likely to be within the existing car park area onsite. The area designated for parking needs to be away from the area around the trees to be retained.

6.0 Site Huts and Toilets

The area designated for site accommodation needs to be away from the area around the trees to be retained.

7.0 Storage Space

The storage of materials should ideally be on existing hard standing away from existing trees. The contractor should not store any materials on site within the RPA of an existing tree.

8.0 Additional Precautions

No storage of materials or lighting of fires should take place within the RPA. No mixing or storage of materials should take place up a slope where they may leak into an RPA.

8.1 No fires to be lit within 20 metres of any tree stem and the fire size and wind direction should be taken into account so that, no flames come within 5.0m of any foliage.

8.2 No high-sided vehicles or cranes should access the site close to any trees to be retained and should not come into contact with any branches or travel within the RPA

8.3 No notice boards, cables or other services to be attached to any tree.

8.4 Materials which may contaminate the soil should not be discharged within 10m of any tree stem. When undertaking the mixing of materials it is essential that any slope of the ground does not allow contaminants to run towards a tree root area.

9.0 Site Gradients

No alterations of soil levels to take place within the RPA of the protected trees

10.0 Demolition Works

No demolition works to take place with the RPA of the protected trees

12.0 Soft landscaping

Refer to the landscaping scheme for detail on soft landscaping.

13.0 Use of Herbicides

No herbicide use is predicted, however if used, it should be done so in strict accordance with the manufacturer's instructions and contact with any tree foliage should be avoided.

14.0 On Site Monitoring Regime

All operations to be monitored by the main contractor. The site manager shall contact the appointed specialist if there is a breach of the RPA and tree protection measures. The appointed specialist shall recommend an action plan to incorporate mitigation measures where necessary.

17.0 Remedial Tree Works

The recommended tree works should be undertaken prior to the commencement of construction activities. All tree works are to be carried out in accordance with BS 3998 British Standard Tree Work - Recommendations 2010. Permission must be granted by the local authority prior to working on any tree protected by a Tree Preservation Order. Failure to do so may result in prosecution.

17.1 In order to prevent the disturbance of nesting birds, any vegetation clearance, tree works or felling should be carried out outside of the bird nesting season (typically March to August). If this is not possible, and vegetation to be removed should be searched by an ecologist for the presence of active nests immediately prior to clearance. If any active nest are found, these should be retained in-situ until the nestlings have fledged.

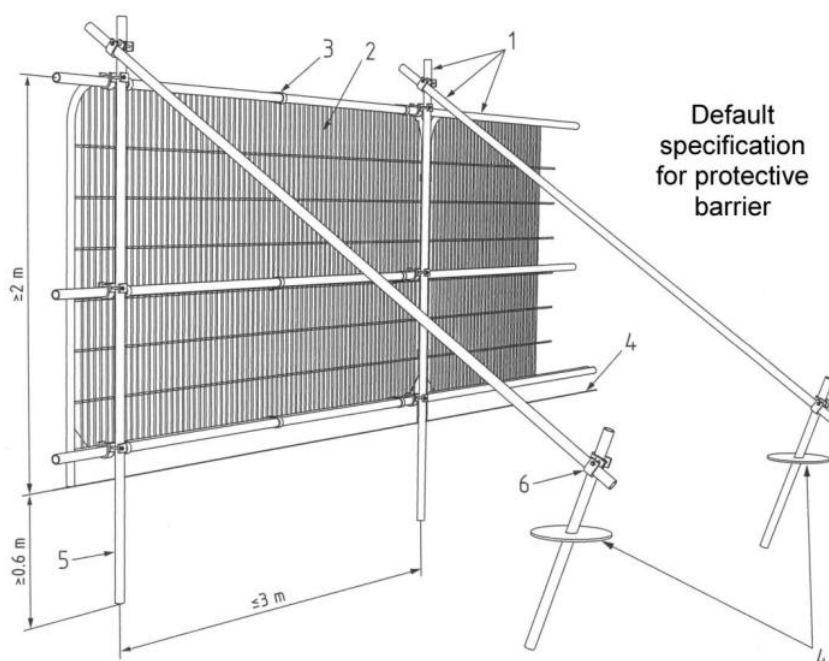
18.0 Responsibilities

It will be the responsibility of the main contractor to ensure that planning conditions are adhered to at all times and that a monitoring regime in regards to tree protection is adopted on site and ensure any necessary licences are in place prior to any felling and all necessary all relevant regulations are adhered.

18.1 The main contractor will be responsible for contacting the Local Planning Authority at any time issues are raised related to the trees on site.

18.2 The main contractor will ensure the build sequence is appropriate to ensure that no damage occurs to the trees during the construction processes. Protective fences will remain in position until completion of ALL construction works on the site.

18.3 Protective fencing should be erected around all trees to be retained as per the following specification:

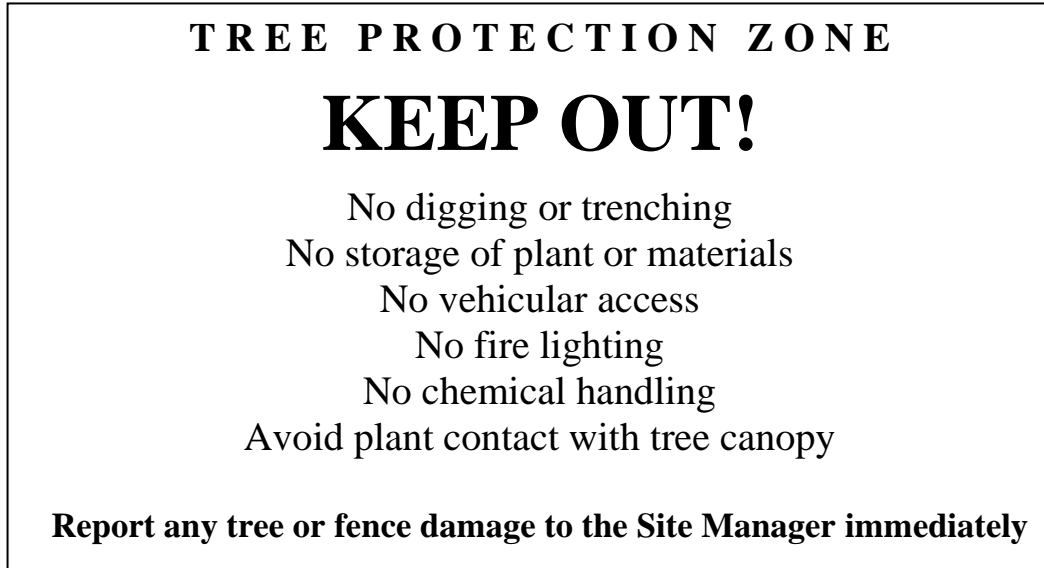


Key

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

18.4 Signs, in accordance with the following example, should be displayed to inform all personnel where the tree protection areas are and to warn them not to enter.

Example of "Keep Out" Sign:



Appendix D - Photographic Record



Photo 1 - View of T1



Photo 2 - View of T2



Photo 3 - View of T3



Photo 4 - View of T4 with T5 behind



Photo 5 - View of G1



Photo 6 - View of G2



Photo 7 - View of T6 at the rear and T7 front left



Photo 8 - View of T8 left rear, T9 right rear



Photo 9 - View of T10 and T11



Photo 10 - View of T12 and T14



Photo 11 - View of T13 and T15-T17



Photo 12 - View of T18



Photo 13 - View of T19



Photo 14 - View of T20



Photo 15 - View of T21



Photo 16 - View of T22 & T23



Photo 17 - View of T24



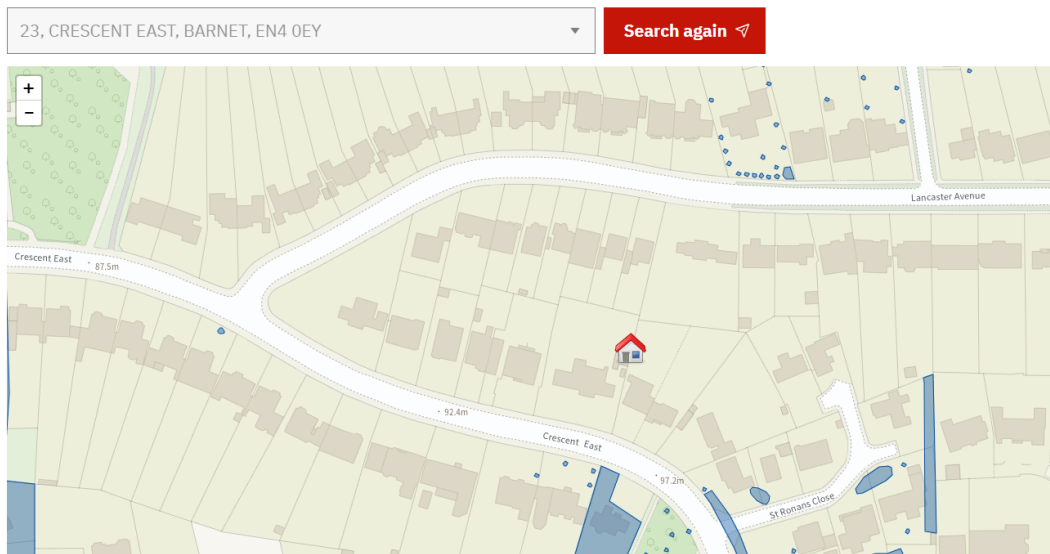
Photo 18 - View of T25



Photo 19 - View of T26

Appendix E - Tree Preservation Order & Conservation Area

To view if there are any protected trees around your property, zoom into the map below and click on the areas shaded blue. You can email planning.support@enfield.gov.uk to get a copy of a TPO for a fee.



Tree works on protected trees

If the work to be done is on your neighbour's land, you will need their permission, as well as our permission, if it is overhanging your property.