

Arboricultural report in support of a planning application, (BS:5837):

- Tree Survey
- Arboricultural Impact Assessment
- Tree Constraints Plan
- Tree Retention and Protection Plan

SITE LOCATION:

Land at Caldyne Park
Turners Hill Road
Crawley Down
West Sussex
RH10 4NQ



Date of Issue:
November 2025

Arboricultural Impact Assessment (BS:5837)

Contents

1.0	Introduction / Background:	3
2.0	Planning Policy and Legislation	6
3.0	Site Assessment	9
4.0	Planning Proposal	10
5.0	Arboricultural Assessment	10
6.0	Impact Appraisal	13
7.0	Below Ground Constraints	14
8.0	Above Ground Constraints	17
9.0	Conclusions	19
10.0	Recommendations	19
11.0	References	20
12.0	Appendices:	21

Land at Caldyne Park, Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ

Arboricultural Impact Assessment (BS:5837)

1.0 Introduction / Background:

1.1 Introduction

- 1.1.1 The principal author of this Arboricultural Impact Assessment, (AIA), is Nicholas Eddison BA, DipArb, Principal Arboricultural Consultant at The Sussex Tree Company. Nicholas is a Technician member of the Arboricultural Association, an Assessor for the Arboricultural Association's Approved Contractor scheme and is LANTRA certified to undertake Professional Tree Inspections.

3

1.2 Instruction

- 1.2.1 We are instructed by Didacious Designs Ltd, also known as 'DD Architects', ('the Client'), to undertake an arboricultural report in support of a planning application, following guidance set out in the British Standard document number 5837 "Trees in relation to design, demolition and construction – recommendations" (2012), and publish our findings in a report document, for a fee.
- 1.2.2 This report is an Arboricultural Impact Assessment, ('AIA'). This outlines in general how impacts identified in the AIA can be suitably mitigated or compensated for & the associated delivery methodologies. A second report, a 'detailed' Arboricultural Method Statement, ('AMS'), accompanies this report as a separate report document with more detailed or further site-specific methodologies.
- 1.2.3 This AIA report will provide any interested parties with a comprehensive assessment of the potential impacts on the trees at Land at Caldyne Park, Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ, ('the Site'), including whether existing trees are to be removed or retained as part of the design plan for the Site, & if any further impacts exist on trees to be retained. It is accepted that chief among the interested parties for this report is the arboricultural officer(s) of the LPA, Mid-Sussex District Council.

1.3 Planning history.

- 1.3.1 There are previous recent planning applications concerned with the Site. The information regarding these is 'open source' & can be found by navigating to the planning search facility on the LPA's website.
- 1.3.2 Planning application no. DM/21/1345 was for a four-bedroom residential dwelling to be constructed on the Site. The application was made in March 2021 & withdrawn in August 2021.
- 1.3.3 Planning application no. DM/24/2799 was for a four-bedroom residential dwelling to be constructed on the Site. The application was made in November 2024 &

Land at Caldyne Park, Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ

Arboricultural Impact Assessment (BS:5837)

withdrawn in March 2025.

1.4 Scope of the project.

1.4.1 The proposed development site, ('the Site'), is located within the boundaries of the existing property at Land at Caldyne Park which is presently owned by clients of the Client and is an unoccupied brownfield site, (an old military fuel storage site). The design plan proposes to construct a single new dwelling of exceptional quality & innovative design centrally located within the Site which utilises existing Site features for access. In terms of this AIA report, there are no significant impacts exerted on the design plan by the existing treescape and Root Protection Areas, ('RPAs').

4

1.4.2 The scope of this project is fivefold:

- I. Undertake a survey of trees on the Site and within influencing distance of the Site to fulfil the requirements of BS5837:2012 *Trees in Relation to Design, Demolition and Construction: Recommendations*.
- II. Provide a Tree Constraints Plan, ('TCP'), for the Site including root protection areas and canopy spreads.
- III. Provide an AIA, in relation to the design proposal, providing comment in relation to the building orientation. The AIA will assess the trees in relation to the proposals, and the potential impacts the trees will have.
- IV. Provide a detailed AMS which will provide guidance on methodologies to ensure the implementation of the design plan does not negatively impact any retained trees, or if there is impact, ensure it is rational, minimised and is sufficiently mitigated.
- V. Provide a Tree Retention and Protection Plan, ('TRPP'), for the Site, showing the location of any tree protection apparatus.

1.4 Reference Documents

1.4.1 As background information, the following documentation has been referenced.

Land at Caldyne Park, Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ

Arboricultural Impact Assessment (BS:5837)

Table 1: Document and Plans Provided / Referenced

Document Description	Reference Number	Prepared By	Date
Existing Site Plan	1608 - SK02	DD Architects	01/2025
Proposed Site Plan	1608 - SK20	DD Architects	01/2025
Landscape Layout	0364-1000-P03	Nicholas Dexter Ltd.	09/2025
Land at Caldyne Park – Tree Constraints Plan	STC-TCP-LCP-01	The Sussex Tree Company	11/2025
Land at Caldyne Park – Tree Retention and Protection Plan	STC-TRPP-LCP-01	The Sussex Tree Company	11/2025

1.1.5 The report publishes: research methodology, findings & recommendations in relation to all existing trees and groups of trees which may be impacted by the proposed development; quantifies these trees / groups of trees according to their estimated life expectancy & quality; details whether any are to be removed in order to facilitate the development; offers mitigation strategies, with accompanying methodologies, for the protection of trees / groups of trees that are to be retained; & suggests appropriate mitigation for any trees / groups of trees to be removed. More detailed protection methodologies & mitigation strategies are presented as a separate, detailed AMS report document, accompanying this report.

1.5 Report limitations

1.5.1 The contents are intended for the sole use of the Client(s), authorised agents of the client(s) and planners from the LPA in respect of this development project only. No liability is accepted for their use by any other parties to advance an argument or claim (including legal or financial) without prior consent.

(1.5 – ‘Report Limitations’ continues, and sections 1.5.2. – 1.5.13 can be found in Appendix 5)

1.6 Access conditions

1.6.1 Access to all parts of the property was unimpeded. Access to 3rd party or public land was not required to complete the tree survey.

Land at Caldyne Park, Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ

2.0 Planning Policy and Legislation

2.1.1 National Planning Policy Framework ('NPPF'), updated in July 2018:

When determining planning applications, local planning authorities, ('LPAs'), should aim to conserve and enhance the local environment by *"protecting and enhancing valued landscapes, sites of biodiversity"* & *"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."* (paragraph 170).

2.1.2 If significant harm 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: *"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 reasons and a suitable compensation strategy exists.**"* (Paragraph 175).

2.1.3 Additionally, the Clients refer to Paragraphs 79 of the NPPF, (regarding the consequences on the LPA if they fail the Housing Delivery Test in the preceding 3 years), & 131, (regarding the construction of well designed, high quality, beautiful & sustainable buildings).

2.1.4 In regard to the proposed development, there is an applicable regional policy, the Mid-Sussex District Plan 2014 – 2031, (adopted March 2018). Below are applicable sections from that Plan:

2.1.4.1 DP12: Protection and Enhancement of Countryside states:

- *The countryside will be protected in recognition of its intrinsic character and beauty. Development will be permitted in the countryside, defined as the area outside of built-up area boundaries on the Policies Map, provided it maintains or where possible enhances the quality of the rural and landscape character of the District*

2.1.4.2 DP15: New Homes in the Countryside states:

- *Provided that they would not be in conflict with Policy DP12: Protection and Enhancement of the Countryside, new homes in the countryside will be permitted where special justification exists. Special justification is defined as:*
 - *In the case of new isolated homes in the countryside, where the design of the dwelling is of exceptional quality and it enhances its immediate setting and is sensitive to the character of the area;*

2.1.4.3 DP37: Trees, Woodland and Hedgerows states:

- *The District Council will support the protection and enhancement of trees, woodland and hedgerows, and encourage new planting. In particular, ancient woodland and aged or veteran trees will be protected.*

- *Development that will damage or lead to the loss of trees, woodland or hedgerows that contribute, either individually or as part of a group, to the visual amenity value or character of an area, and/ or that have landscape, historic or wildlife importance, will not normally be permitted.*
- *Proposals for new trees, woodland and hedgerows should be of suitable species, usually native, and where required for visual, noise or light screening purposes, trees, woodland and hedgerows should be of a size and species that will achieve this purpose.*
- *Trees, woodland and hedgerows will be protected and enhanced by ensuring development:*
 - *incorporates existing important trees, woodland and hedgerows into the design of new development and its landscape scheme; and*
 - *prevents damage to root systems and takes account of expected future growth; and*
 - *where possible, incorporates retained trees, woodland and hedgerows within public open space rather than private space to safeguard their long-term management; and*
 - *has appropriate protection measures throughout the development process; and*
 - *takes opportunities to plant new trees, woodland and hedgerows within the new development to enhance on-site green infrastructure and increase resilience to the effects of climate change; and*
 - *does not sever ecological corridors created by these assets.**Proposals for works to trees will be considered taking into account:*
 - *the condition and health of the trees; and*
 - *the contribution of the trees to the character and visual amenity of the local area; and*
 - *the amenity and nature conservation value of the trees; and*
 - *the extent and impact of the works; and*
 - *any replanting proposals.*
- *The felling of protected trees will only be permitted if there is no appropriate alternative. Where a protected tree or group of trees is felled, a replacement tree or group of trees, on a minimum of a 1:1 basis and of an appropriate size and type, will normally be required. The replanting should take place as close to the felled tree or trees as possible having regard to the proximity of adjacent properties.*
- *Development should be positioned as far as possible from ancient woodland with a minimum buffer of 15 metres maintained between ancient woodland and the development boundary*

2.1.5 There are no tree removals required to implement the design plan for this proposed project. The proposed development's design plan complies with all of the requirements in DP37 & enhances the existing treescape at the Site.

2.2 Statutory Tree Protections

- 2.2.1 The LPA has been contacted to establish whether any trees contained within the survey are protected by either a Tree Preservation Order (TPO) or are located within a local Conservation Area.
- 2.2.2 The LPA's online TPO & Conservation Area was accessed, (a screenshot is provided at Appendix 4); a search for Land at Caldyne Park, Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ revealed there are no active TPOs in force for the Site, nor is it located within a Conservation Area.
- 2.2.4 The Department for Environment, Food and Rural Affairs MAGIC Map was accessed, (a screenshot is provided at Appendix 4); a search for Land at Caldyne Park, Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ revealed that sections of the Site are designated as Ancient Woodland. The design plan incorporates a 15m buffer zone for any proposed development works to ensure compliance with DP37 of the Mid-Sussex District Plan & various elements of national policy & legislation.
- 2.2.5 It should be considered that any proposed tree works detailed in the tree schedule are also implemented as part of the planning decision consent.

2.3 Felling Licence

- 2.3.1 Tree felling is also restricted under the Forestry Act 1967. Under this act, there is an exemption from the need for a felling licence *"for the prevention of danger or the prevention or abatement of a nuisance."*
- 2.3.2 As all the 'trees' requiring removal to deliver the design proposal are either uprooted or failed & therefore classified as either a danger or a nuisance, this exemption applies, so felling licence restrictions do not apply. 'Trees' such as these are not, for the purposes of this report or BS:5837, classed as trees. To be classed as a tree, the specimen needs to be a functional organism; those referred to as 'trees' in this report cannot be considered as functional in any normal understanding of the term.
- 2.3.3 In section 9 of the Forestry Act it states in subsection 2 that the requirement to obtain a licence does not apply *"to the topping or lopping of trees or the trimming or laying of hedges."*
- 2.3.4 As all the proposed pruning works to retained trees at the Site are to make them safe, by either removing dead, dangerous or diseased wood from their crowns, this exemption applies, so felling licence restrictions do not apply.

2.4 Trees and Wildlife

- 2.4.1 The Wildlife and Countryside Act 1981, (as amended), the Countryside and Rights of Way Act 2000 and the Conservation of Species and Habitat Regulations 2010, (as amended) provide statutory protection of birds, bats and other species that can inhabit trees.
- 2.4.2 Great care is required to avoid disturbance to those species and consideration should be given to the timing of tree works in order to avoid disturbance. Where the presence of such species is suspected and proposed works to the tree may affect any protected species, (or their habitats), the project ecologist or Natural England should be contacted for advice.

3.0 Site Assessment

3.1 Site Visit

- 3.1.1 A Site visit was carried out by Nicholas Eddison *BA (Hons) DipArb*, on 21st October 2025, who surveyed all the significant trees and groups of trees throughout the Site, (and other relevant areas), from ground level including those with a diameter at breast height, ('DBH'), of more than 15cm, (where possible, DBH is taken at 1.3m above ground level; where this is not possible, this is indicated in the survey sheet data). The owners of the Site were informed of his presence on site and prior to undertaking the inspection of the trees.

3.2 Site Description

- 3.2.1 The Site is located entirely within the existing property at known as 'Land at Caldyne Park', Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ. This property is a brownfield site located at the western junction of Wallage Lane & Turners Hill Road & is in the shape of a 7-sided polygon. Its former usage was as a military fuel storage depot. Historically there were 9 cylindrical storage tanks situated throughout the Site; these are now removed. There were 6 tanks in a 'rough' east-to-west row centrally through the Site & 3, larger ones in a 'rough' northeast to southwest row in the southern section of the Site. There were connecting tracks & pathways, (constituted of compacted gravel-type aggregate), between these tanks, some of which are still in situ, other which have been covered by ground vegetation. There were 2 vehicular access points into the Site, one on the northern, Wallage Lane boundary & the other on the western, Turners Hill Road boundary. These existing Site features are identified in the Existing Site Plan. The design plan is to reinstate the northern access point, (where there is existing metal, double gates), & internal access roadway to create vehicular access to the proposed new dwelling. There is a pedestrian access gate a few metres to the west of the existing northern vehicular access gates. There are 2 distinct areas centrally within the Site which are free from existing trees & woodland;

Land at Caldyne Park, Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ

Arboricultural Impact Assessment (BS:5837)

the larger of these is where the proposed new dwelling is to be located. Presently there are a number of juvenile trees planted throughout these areas, (staked, with tree tubes). Surrounding these are areas of unmanaged woodland populated with predominantly native tree species of varying maturity & quality; throughout this woodland are self-seeded areas of Rhododendron understorey.

3.2.2 Site topography:

- The Site is predominantly flat.
- The Site is a 7-sided polygon. The 'northern' boundary is approximately 390m in length; the eastern boundary is approximately 181m in length; the southern boundary is approximately 338m in length; and the western boundary is approximately 100m in length.
- The Site is bordered by woodland on all sides; to the north & west this woodland is beyond the carriageways of Wallage Lane & Turners Hill Road
- There are 2 areas of light industrial usage close to the Site; Caldyne Park to the north & Rowfant Business Centre to the east.
- There are residential dwellings situated to the southwest of the Site, along Turners Hill Road.

10

3.2.3 The site's underlying geology is predominantly Sandstone and mudstone:

Superficial deposits: No superficial deposits recorded

Bedrock geology: Upper Tunbridge Wells Sand - Sandstone and siltstone, interbedded. Sedimentary bedrock formed between 139.4 and 133.9 million years ago during the Cretaceous period.

4.0 Planning Proposal

4.1.1 The planning proposal is to construct a new dwelling of exceptional quality and innovative design, which aims to be truly outstanding and ground-breaking, as defined by paragraphs 79 and 131 of the NPPF. It will be positioned centrally within the Site &, utilising the existing internal access roadways with the intention that the construction project has minimal impact on the surrounding trees & woodland, specifically the areas of designated Ancient Woodland. The design plan incorporates significant tree transplanting & new tree planting, (fruit & new native tree specimens). The landscape design has other features which enhance the environment & restore the surrounding woodlands.

5.0 Arboricultural Assessment

5.1 Method of Data Collection

5.1.1 The trees on the site were originally surveyed without reference to the site layout as

Land at Caldyne Park, Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ

detailed in Clause 4.4.1.1 of BS5837:2012. However, for the purposes of this arboricultural assessment, the design proposal for the site has been considered.

- 5.1.2 The survey recorded trees either as individual specimens or as groups of trees, where these trees were aerodynamically, culturally or visually important as groups of trees. The tree numbers associated with each tree are cross-referenced within the schedule & plans at Appendix 1 and 2 respectively. The complete method of data collection for the tree survey is provided at Appendix 6.
- 5.1.3 Due to the design plan not requiring any tree removals, (other than failed specimens which cannot properly be described as 'trees' because either they are uprooted, fallen or standing deadwood), & it being limited to the existing internal roadway from Wallage Lane to the construction zone located centrally within the wider Site, only those trees which could potentially impact the design plan have been surveyed.

5.2 Summary of Data

- 5.2.1 The overall survey includes records of 12nos. individual trees. There are 4 trees classified as category A; there are 5 trees classified as category B; & there are 3 trees classified as category C. 7 of the 12 trees' Root Protection Areas, ('RPAs'), impact the design proposal in so far as either the existing roadway or the existing internal tracks or pathways presently traverse them, (in varying degrees). There are no proposals to remove any of these trees. All of the RPAs of the 7 trees which impact the design plan are presently impacted by the existing landscaping features of the existing Site – there are no new incursions planned into the RPAs of any retained tree, other than a small area of permanent ground protection to be installed into a section of the RPA of T6.
- 5.2.2 T1, (Beech, *Fagus sylvatica* – category B), is a semi-mature specimen located close to the existing vehicular gate on the northern, Wallage Lane boundary. T1 is multi-stemmed from ground level, with 4 stems. T1 is a satisfactory example of the species. T1 is scheduled for retention.
- 5.2.3 T2, (Hazel, *Corylus avellana* – category B), is a semi-mature specimen located close to the existing vehicular gate on the northern, Wallage Lane boundary. T2 is multi-stemmed from ground level, as it is a Hazel coppice. T2 is a satisfactory example of the species. T2 is scheduled for retention.
- 5.2.4 T3, (Sweet Chestnut, *Castanea sativa* – category B), is a mature specimen located close to the northern boundary & the existing internal roadway. T3 is multi-stemmed from ground level, with 4 stems. T3 is a satisfactory example of the species. T3 is scheduled for retention.
- 5.2.5 T4, (Ash, *Fraxinus excelsior* – category C), is a semi-mature specimen located close to the northern boundary & the existing internal roadway. T4 is an unsatisfactory example of the species. T4 is scheduled for retention.
- 5.2.6 T5, (Bird/Wild Cherry, *Prunus avium* – category C), is a mature specimen located close to the northern boundary & the existing internal roadway. There are a significant

Arboricultural Impact Assessment (BS:5837)

number of dangerous features, (such as deadwood & failed branches), & as a consequence T5 require remedial pruning works. T5 is an unsatisfactory example of the species. T5 is scheduled for retention.

- 5.2.7 T6, (Sweet Chestnut, *Castanea sativa* – category C), is a mature specimen located on the edge of the Site's clearing & adjacent to the existing internal roadway. T6 trifurcates at approximately 1m AGL – its central stem is standing deadwood & should be removed, along with major deadwood present in its crown. T6 is an unsatisfactory example of the species. T6 is scheduled for retention.
- 5.2.8 T7, (Oak, *Quercus robur* – category A), is a semi-mature specimen located on the edge of the Site's clearing, (to the north). T7 is a remarkable example of the species. T7 is scheduled for retention.
- 5.2.9 T8, (Oak, *Quercus robur* – category A), is a mature specimen located on the edge of the Site's clearing, (to the east). T8 is a remarkable example of the species. T8 is scheduled for retention.
- 5.2.10 T9, (Goat Willow, *Salix caprea* – category B), is a semi-mature specimen located on the edge of the Site's clearing, (to the west). T9 is an unsatisfactory example of the species. T9 is scheduled for removal.
- 5.2.11 T10, (Scot's Pine, *Pinus sylvestris* – category A), is a mature specimen located on the edge of the Site's clearing, (to the west). T10 is a remarkable example of the species. T10 is scheduled for removal.
- 5.2.12 T11, (Scot's Pine, *Pinus sylvestris* – category A), is a mature specimen located on the edge of the Site's clearing, (to the west). T11 is a remarkable example of the species. T11 is scheduled for removal.
- 5.2.13 T12, (Scot's Pine, *Pinus sylvestris* – category B), is a mature specimen located on the edge of the Site's clearing, (to the west). T12 bifurcates at approximately 1m AGL & has a weak union with a Rhododendron branch growing through that union. T12 is a satisfactory example of the species. T12 is scheduled for removal.
- 5.2.14 The location of the trees & groups of trees and their associated constraints including canopy spread and root protection areas are illustrated on the Tree Constraints Plan at Appendix 2.

Arboricultural Impact Assessment (BS:5837)

Table 2: Summary of Trees Surveyed

Retention Category	Individual Trees	Groups	Hedges	Totals
Category A (Trees of high quality with an estimated life expectancy of at least 40 years).	4	0	0	4
Category B (Trees of moderate quality with an estimated life expectancy of at least 20 years)	5	0	0	5
Category C (Trees of low quality with an estimated life expectancy of at least 10 years, or young trees with a stem diameter below 150mm).	3	0	0	3
Category U (Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years).	0	0	0	0
Totals	12	0	0	12

13

5.2.4 It should be noted that Table 1 of BS5837:2012 only gives recommendations in relation to remaining years. A tree may be considered to have a longer remaining life, however, and still be considered to be of a lower category given its maturity, condition or overall impact to the application site.

5.2.5 In line with BS5837:2012, category A and B trees / groups of trees are considered as providing a substantial contribution to a site. Therefore, Category A and B trees should be retained and incorporated into the proposed development where possible and feasible.

5.2.6 Generally, category C and U trees / groups of trees are considered to be of low quality or are young specimens, which can be readily replaced, therefore, should not be considered a constraint to future development.

5.2.7 Retention of trees is considered desirable, wherever possible, as it ensures continuity of tree cover and provides a mature landscape to the proposed development.

6.0 Impact Appraisal

6.1 Overview

6.1.1 BS 5837:2012 provides a methodology for determining the above and below ground constraints presented by trees on and adjacent to the site. The RPA & canopy

Land at Caldyne Park, Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ

Arboricultural Impact Assessment (BS:5837)

spreads of all trees and groups are shown in Appendix 1, (Tree Survey Schedule), & Appendix 2, (Tree Constraints Plan).

- 6.1.2 The Arboricultural Impact Assessment considers the development proposals & how they relate to the trees on the site. Any tree and design conflicts are highlighted, & possible remedial action suggested if appropriate. The proposed design is shown on the Tree Constraints Plan & Tree Removal and Protection Plan, (Appendix 2).

6.2 Tree Removal

- 6.2.1 The current outline design plan does not require the removal of any trees.
- 6.2.2 The current design plan requires the removal of a number of failed 'trees', standing deadwood & major deadwood from retained trees. Generally, the design plan is to remediate & then maintain the woodland surrounding the proposed development. It must be emphasized that no 'live' trees are to be removed, only dead or failed specimens.

7.0 Below Ground Constraints

7.1 Root Protection Area

- 7.1.1 The below ground constraints are generally summarised as the root protection areas (RPAs). The RPA is an area equivalent to a circle with a radius of 12 times the diameter of the trees measured at 1.5 metres for single-stemmed trees. For trees with more than one stem, one of the two calculation methods should be used where there are either 2 - 5 stems or 5 or more stems. In all cases, the stem diameter(s) should be measured in accordance with Annex C, & the RPA should be guided from Annex D of BS5837:2012.
- 7.1.2 The RPA is an area in which no groundwork should be undertaken *without due care* in relation to the retained tree(s) & this is to avoid direct damage to the underground sections of the tree, (its roots), soil compaction, changes in levels or soil contamination which could alter the trees condition and / or stability. The shape of the RPA & its exact location will depend upon arboricultural considerations and ground conditions.
- 7.1.3 The RPA for the trees have been calculated as prescribed by BS5837:2012 & are shown as circles or polygons on the Tree Constraints Plan at Appendix 2. These plans illustrate the relationship between the RPAs associated with the trees & the proposed development.
- 7.1.4 In addition to the illustration of RPAs on the plans at Appendix 2, the numerical RPA values are provided within the Tree Schedule at Appendix 1. Within the schedule both RPA radius in metres from the main stem & total area for the RPA as square metres are shown.

- 7.1.5 No excavations into the RPAs of retained trees are required in order to implement the design plan. Where the RPAs of retained trees impact the design plan, the impacts are limited to either existing hard surfacing or new hard surfacing, which is to be installed without excavations & will be of permeable, breathable design & materials.

7.2 Existing RPA Incursions

- 7.2.1 There are a number of trees where the associated RPAs impact the design plan. These are T1, T2, T3, T4, T5, T6 & T8. The design specifies that all of these trees are to be retained. However, there are existing incursions into the RPA of all these retained trees. These are:

- The existing gateway into the Site from Wallage Lane.
- The existing roadway from Wallage Lane into the middle of the Site interior, (where the existing clearing is). This is constituted of tarmac for some of its length & then compacted gravel or M.O.T. aggregate.
- The internal pathways of the Site, constituted of compacted gravel or M.O.T. aggregate.

15

7.3 New RPA Incursions required to implement the design proposal.

- 7.3.1 In order to implement the design proposal new incursions are required into the RPAs of retained trees.
- 7.3.2 In order to install a new gateway, a short distance into the interior of the Site, new incursions are required into the RPAs of T1, T2 & T3.
- 7.3.3 In order to install new hard standing surrounding the proposed new dwelling, new surfacing is to be installed in approximately 15% of the RPA of T6. There is existing hard surfacing within the RPA of T6, however, the design plan requires additional hard surfacing to be installed there.
- 7.3.4 The new internal driveway & hard surfacing will be installed following a 'no dig' methodology & utilise tree root protection products, such as Cellweb or EcoGrid to ensure any sections of RPAs that impact the design proposal are materially unaffected by their installation. A more detailed methodology relating to these installations can be found in the accompanying report, Land at Caldyne Park: detailed AMS.
- 7.4.5 The new driveway & hard surfacing will be edged with a 'no-dig' steel edging product to ensure any sections of RPAs that impact the design proposal are materially unaffected by edging installation. A more detailed methodology relating to these installations can be found in the accompanying report, Land at Caldyne Park: detailed AMS.
- 7.3.6 In order to implement the design proposal, very minor incursions are required in order to install a 'continuous estate fence' throughout the woodland. Full details of the specifications for this fence & the installation methodology can be found in the

Land at Caldyne Park, Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ

accompanying report, Land at Caldyne Park: detailed AMS.

7.4 Proposed demolition works & level changes within the RPAs.

- 7.4.1 In order to implement the design proposals, demolition works are required to remove the existing gate & the very top layer of the existing access roadway.
- 7.4.2 For all demolition / construction works, any plant and machinery, if used, will either be sited on existing hard standing or outside the RPA of the retained tree. Any machines or plant which are sited on areas where pre-existing incursions exist within the RPA of any trees must be of appropriate size and design so that no new incursions are accidentally created or damage occurs to the pre-existing hard surfacing because of the weight and dimensions of the machine, (thereby creating a potential compaction / contamination hazard). A more detailed explanation of the relevant methodologies can be found in the accompanying report, Land at Caldyne Park: detailed AMS.
- 7.4.3 There are no proposed level changes within the RPAs of any retained trees.
- 7.4.4 Any spoil created by excavation works will not be stored within the RPA of any retained trees. Ideally, spoil will be removed from the site contemporaneously as created.

16

7.5 Proposed construction of the new dwelling.

- 7.5.1 The construction of the proposed new dwelling does not impact on the RPAs of any retained trees or groups of trees.
- 7.5.2 Either tree protection fencing will be erected beyond the extremities of RPAs of retained trees, (those parts which are unprotected by existing hard standing), or permanent ground protection will be installed, (during the demolition & construction phases), in those areas of retained trees RPAs where operations may impact them.
- 7.5.8 Tree protection fencing creates an impermeable barrier for the duration of the demolition and construction phases of the development. The areas inside the tree protection fencing are known as the Construction Exclusion Zones, (CEZs) No incursions into the CEZs are permitted.
- 7.5.9 It is recommended that any enabling or access facilitation operational tree works are completed prior to the installation of tree protection fencing.
- 7.5.10 Tree protection fencing must be erected prior to the commencement of active demolition & construction works and remain in situ until completion of the proposed development project.
- 7.5.11 Locations of tree protection fencing can be found on the Tree Retention and Protection Plan at Appendix 2; more detail on tree protection fencing & its location is contained within the accompanying report, Land at Caldyne Park: detailed AMS.

Land at Caldyne Park, Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ

- 7.5.12 Specifications for the design of tree protection fencing and precautionary signage to be attached to this fencing can be found in Appendix 3 & the Appendices of the accompanying report, Land at Caldyne Park: detailed AMS.
- 7.5.13 There is no requirement for the installation of temporary ground protection in order to implement the design plan.
- 7.5.14 There is a requirement to install permanent ground protection in sections of the RPA of T6. Details of the installation methodologies & specifications of this permanent ground protection can be found in the accompanying report, Caldyne Park: detailed AMS

7.6 Construction scaffolding

- 7.6.1 In order to implement the design plan there is no requirement for the installation of construction scaffolding in the RPAs of retained trees.

7.7 Infrastructure

- 7.7.1 The design plan specifies that underground services from the location of the new dwelling to the Site exterior follow the route of the existing internal roadway & exit the Site on Wallage Lane. The exact location of the route has not yet been determined. The services which need to be installed along this route are for electricity & water only. Waste water & sewerage services are not exiting the Site, as these are to be dealt with by a sewerage treatment facility on-site or by excess water running off into an attenuation pond. Therefore, any excavations required to install underground services will be minimal. A presumption is made that the route of underground services will follow a route which avoids the RPAs of retained trees as much as is possible.
- 7.7.2 If services need to enter RPAs of retained trees, the use of hand digging as detailed in the National Joint Utilities Group publication 'Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees' (NJUG 10, Volume 4, 2007) will be undertaken to minimise the impact on the tree roots.

8.0 Above Ground Constraints

- 8.1.1 The above ground constraints predominantly refer to the impact of the canopy of any retained tree on the Site either by size & form, shadowing & nuisance factors. As a result, it is sometimes required that a canopy protection zone is established to ensure it is not harmed during construction.
- 8.1.2 At present, there are above ground constraints which might impact the implementation of the design proposals – the canopies of T1 – T6 could impact both the construction and demolition phases of the development.

- 8.1.3 The lifting of selected branches of trees T1 – T6 to a height where there is no longer an impact on any delivery or construction vehicles which may be travelling underneath them, approximately 5m from ground level, would remove any constraints. A detailed methodology for determining exactly which individual branches on which retained trees need lifting is to be found in the accompanying report, Caldyne Park: detailed AMS. Any crown lifting works must be compliant with BS:3998: 2010 – Tree work: recommendations & follow the instructions in that document.
- 8.1.4 Where the current and / or ultimate height of a Category A, B or C tree will cause an obstruction to the proposed development, this must be considered as a constraint. This is usually considered in terms of issues relating to shade and light. There are no above ground constraints posed by the retained trees on the proposed development in this regard.

8.2 Impact on Amenity

- 8.2.1 As there are no trees to be removed in order to implement the design proposal there is no impact on amenity.

8.3 Future Growth

- 8.3.1 The future growth of the trees may have an impact on proposed new developments. Trees which are not fully mature, & which are in close proximity to new structures may become a nuisance to occupiers as they grow to their full extent, & therefore a pressure may develop to limit such growth either through felling or pruning may develop.
- 8.3.2 As the new dwelling is situated away from any existing trees, in the natural clearing in the centre of the Site, there is no impact on the proposed development from future growth.

8.4 Leaves, Fruit and Honeydew

- 8.4.1 The leaves of retained trees will have little or no impact on the site or its users above and beyond the present impact they currently have.
- 8.4.2 Honeydew is most likely to be a significant problem from Lime & maple trees, (though not Japanese Maples). As the new dwelling is situated away from any existing trees, in the natural clearing in the centre of the Site, there is no impact on the proposed development from leaves, fruit or honeydew.

9.0 Conclusions

- 9.1.1 This tree assessment and AIA is prepared in relation to the full planning application & includes 12 trees, T1 – T12.
- 9.1.2 Wherever possible trees should be retained. In order to implement the design proposal, no trees are to be removed.
- 9.1.3 The design plan specifies the removal of multiple failed trees, uprooted trees, standing deadwood & major deadwood in the crowns of trees to be retained. This does not constitute a constraint on implementation of the design plan & is beneficial to the Site & the overall woodland – as it has been unmaintained for a considerable amount of time.
- 9.1.4 In order to implement the design proposals there are new incursions into the RPAs of T1, T2, T3, T6 & T8. These new incursions are limited to the installation of a new gate & new hard surfacing. The surfacing to be installed will prevent compaction to the relevant sections of T6 & T8's RPAs. The installation of the new gateway requires minimal excavation & therefore is not considered overly detrimental to the RPAs of T1 – T3. A detailed methodology describing the installation process is contained in the accompanying report, Caldyne Park: detailed AMS.
- 9.1.5 In order to implement the design proposal there may be a requirement to crown lift trees T1 – T6, utilising a 'tip' pruning methodology; this is not considered to be overly detrimental to the trees & is not considered to be a sufficient constraint as to jeopardise the viability of the design proposal.

10.0 Recommendations

- 10.1 The installation of tree protective fencing & permanent ground protection must occur prior to commencement of operations, (other than enabling operational tree works), in the location(s) shown on the TRPP.
- 10.2 Any unplanned incursions into the RPAs of retained trees must be immediately reported to the Project Arboriculturalist, who will attend the site to assess the potential impact of the unplanned incursion and decide whether to notify the Local Authority's specialist / Arboriculturalist.
- 10.3 No plant or machinery is to be used within 5m of any retained tree's root / stem junction.
- 10.4 The successful retention of those trees that remain on the Site is dependent upon the quality & maintenance of any protection system that is put in place. The accompanying, detailed AMS report demonstrates how the necessary tree protection strategies will be implemented and proposed mitigations will be effective.

- 10.5 An indicative draft Tree Retention & Protection Plan ('TRPP', at Appendix 2) is provided; however, this is subject to alteration following a final decision notice.
- 10.6 It is critical that all protective fencing is installed & erected, & the Construction Exclusion Zone, (CEZ), enforced prior to the commencement of any works on the Site. Following installation of tree protection, a Site meeting with the LPA's Tree Officer may be considered necessary to ensure satisfaction of all parties prior to any on-Site works commencing.
- 10.7 It is recommended that a suitable competent arboriculturist undertakes the site supervision & monitoring works – & be recognised as the Project Arboriculturalist.
- 10.8 In order for tree and root protection measures to work effectively all personnel associated with any demolition and construction processes must be familiar with the Tree Protection and Retention Plan.

11.0 References

- 11.1.1 British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendation'.
- 11.1.2 British Standard 3998:2010 'Tree work – Recommendations'.
- 11.1.3 BS8545:2014 Trees: 'From nursery to independence in the landscape – Recommendations'.
- 11.1.4 The Forestry Act 1967.
- 11.1.5 The Town and Country Planning Act 1990.
- 11.1.6 The Town and Country Planning (Tree Preservation) (England) Regulations 2012.
- 11.17 APN 12, Through the Trees to Development, Arboricultural Advisory and Information Service. Derek Patch and Ben Holding.

Arboricultural Impact Assessment (BS:5837)

12.0 Appendices:

Appendix 1:	Schedules
Appendix 2:	Plans
Appendix 3:	Tree Protection
Appendix 4:	Screenshots relevant to the proposed development
Appendix 5:	Report Limitations
Appendix 6:	Arboricultural Survey: methodologies
Appendix 7:	Summary of author's qualifications and experience

Arboricultural Impact Assessment (BS:5837)

Appendix 1: Schedules

Schedule 1: Cascade chart for tree quality assessment:

Table 1 - Cascade Chart for Tree Quality Assessment

Table 1 - Cascade Chart for Tree Quality Assessment				
Category and Definition	Criteria (including subcategories where appropriate)			Identification on Plan
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning); - Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline; and/or - Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <i>NOTE: Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7</i>			Dark Red 
Trees to be considered for retention				
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation	
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that Are essential components of groups or formal or semiformal arboricultural features (e.g. the dominant and/or principal trees within an avenue).	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features.	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g., veteran trees or wood-pasture).	Light Green 
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation.	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.	Trees with material conservation or other cultural value.	Mid Blue 
Category 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	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value.	Grey 

Arboricultural Impact Assessment (BS:5837)

Schedule 2: BS:5837 Tree Survey:

Client Name: DD Architects
Site: Land at Caldyne Park, Turners Hill Road, Crawley Down, W. Sussex, RH10 4NQ
Ref: Full planning application

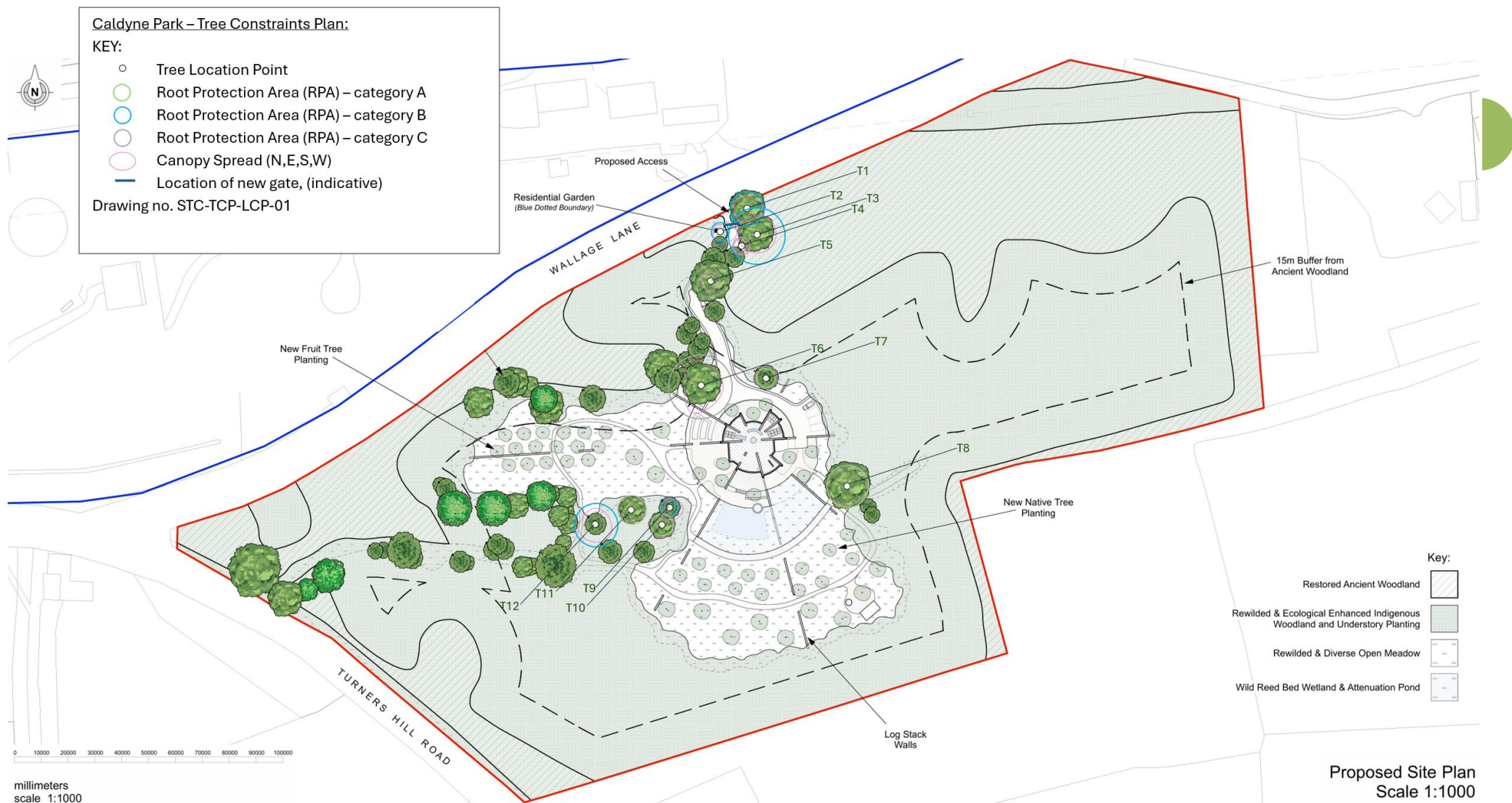
Consultant: N. Eddison
Survey Date: 21/10/2025

Tree No.	Species	Common name	Height (m)	DBH (mm)	Crown Spread (North)	Crown Spread (East)	Crown Spread (South)	Crown Spread (West)	Crown Height A	Root Protection Area Radius (m)	Root Protection Area (m²)	Age	Bat habitat potential	Condition	Risk	Category	Remedial Recommendations	Notes
T1	<i>Fagus sylvatica</i>	Beech	16	534	4	6	6	4	1	6.41	129.00	Semi-mature	Low	Fair	Low	B2	Crown lift to 5m above roadway & gate	Multi-stemmed from GL, (4)
T2	<i>Corylus avellana</i>	Hazel	12	280	2	6	4	2	1.5	3.36	35.47	Semi-mature	Low	Fair	Low	B2	Crown lift to 5m above roadway & gate	
T3	<i>Castanea sativa</i>	Sweet Chestnut	17	848	7	7	7	7	1.5	10.18	325.31	Mature	Medium	Fair	Low	B2	NWR	Multi-stemmed from GL (4)
T4	<i>Fraxinus excelsior</i>	Ash	15	264	2.5	2.5	2.5	2.5	8	3.17	31.53	Semi-mature	Low	Fair	Low	C2	NWR	
T5	<i>Prunus avium</i>	Bird Cherry	14	507	3.5	3.5	3.5	3.5	7	6.08	116.29	Mature	Medium	Poor	High	C2	Undertake remedial pruning to ensure safe use of roadway beneath	
T6	<i>Castanea sativa</i>	Sweet Chestnut	18	962	10	10	10	7	1	11.54	418.66	Mature	Medium	Poor	High	C2	Remove major deadwood & dead central stem	Trifurcates at approx 1m AGL; main, central stem is standing deadwood
T7	<i>Quercus robur</i>	Oak	12	312	4	4	4	4	2	3.74	44.04	Semi-mature	Low	Good	Low	A2	NWR	
T8	<i>Quercus robur</i>	Oak	16	666	7	7	7	7	1	7.99	200.66	Mature	Medium	Good	Low	A2	NWR	Epicormic growth from approx 1m AGL to crown break - indicator of stress
T9	<i>Salix caprea</i>	Goat Willow	11	255	3	5	5	2	4	3.06	29.42	Semi-mature	Low	Fair	Low	B2	Remove major deadwood	
T10	<i>Pinus sylvestris</i>	Scot's Pine	15	405	3	5	5	5	8	4.86	74.20	Mature	Low	Good	Low	A2	NWR	
T11	<i>Pinus sylvestris</i>	Scot's Pine	17	436	4	5	5	5	7	5.23	86.00	Mature	Low	Good	Low	A2	NWR	
T12	<i>Pinus sylvestris</i>	Scot's Pine	17	728	7	6	5	6	6	8.74	239.76	Mature	Low	Good	Low	B2	NWR	Bifurcates at approx 1m AGL, weak union with Rhododendron growing through union

Land at Caldyne Park, Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ

Arboricultural Impact Assessment (BS:5837)

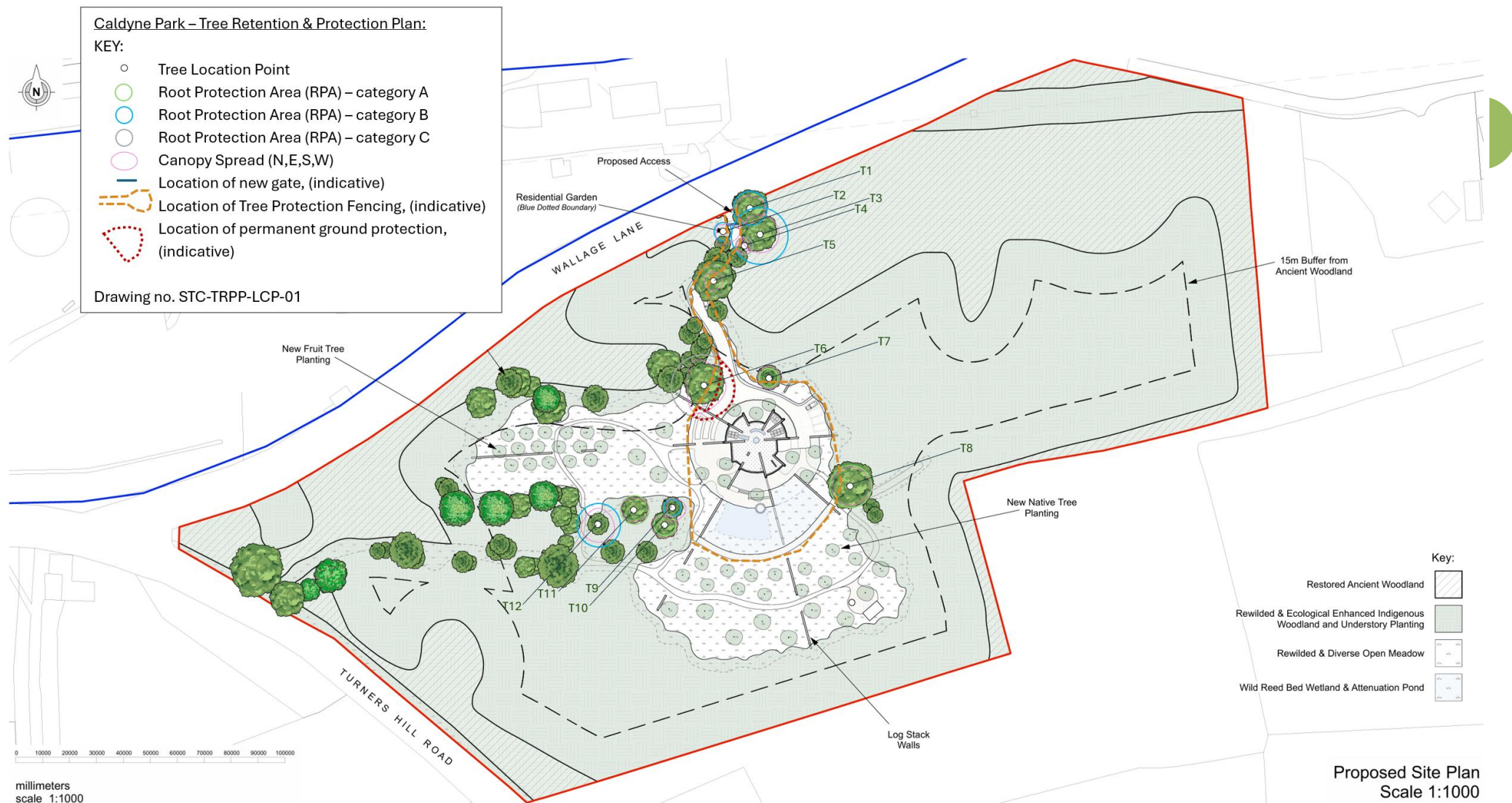
Appendix 2: Plans – Tree Constraints Plan:



Land at Caldyne Park, Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ

Arboricultural Impact Assessment (BS:5837)

Appendix 2: Plans – Tree Retention and Protection Plan:



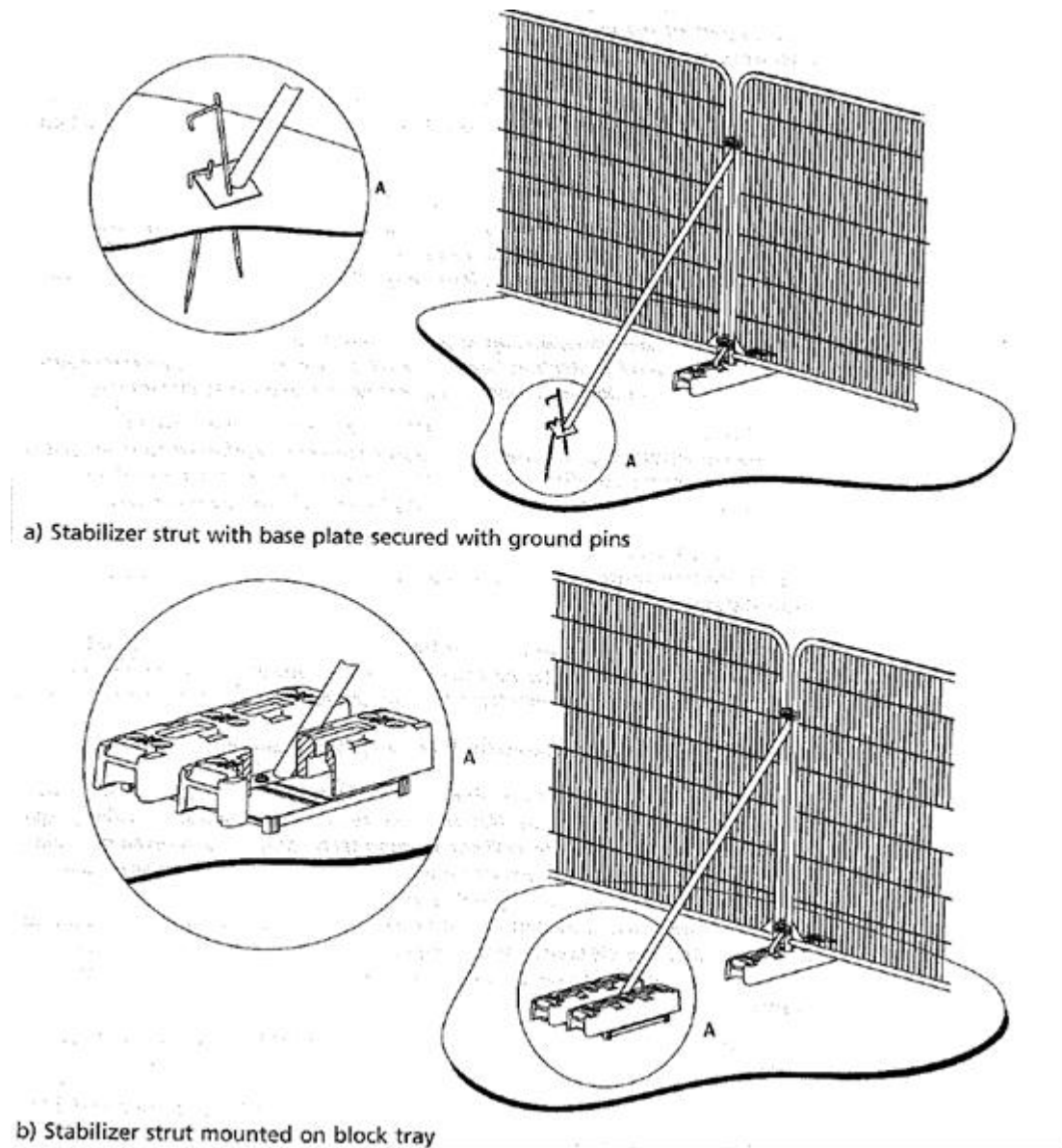
Land at Caldyne Park, Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ

Arboricultural Impact Assessment (BS:5837)

Appendix 3 Tree Protection:

Tree Protection Fencing – specifications:

BS5837 Recommended protective barrier (Fence A-Herras type fence)



Arboricultural Impact Assessment (BS:5837)

Tree Protection Fencing – signage:



27

Land at Caldyne Park, Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ

Arboricultural Impact Assessment (BS:5837)

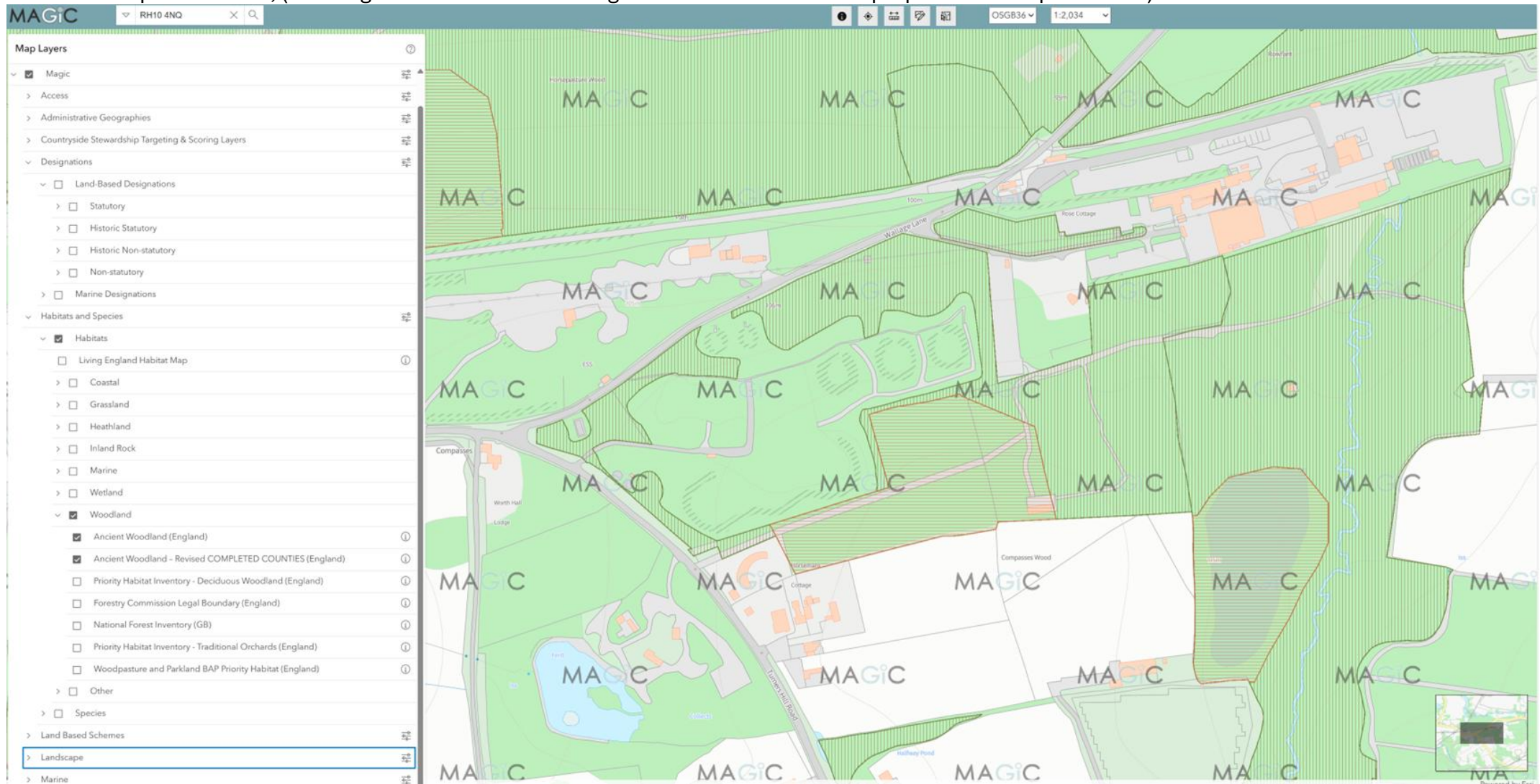
Appendix 4: Screenshots relevant to the proposed development: BGS Underlying Geology:



Land at Caldine Park, Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ

Arboricultural Impact Assessment (BS:5837)

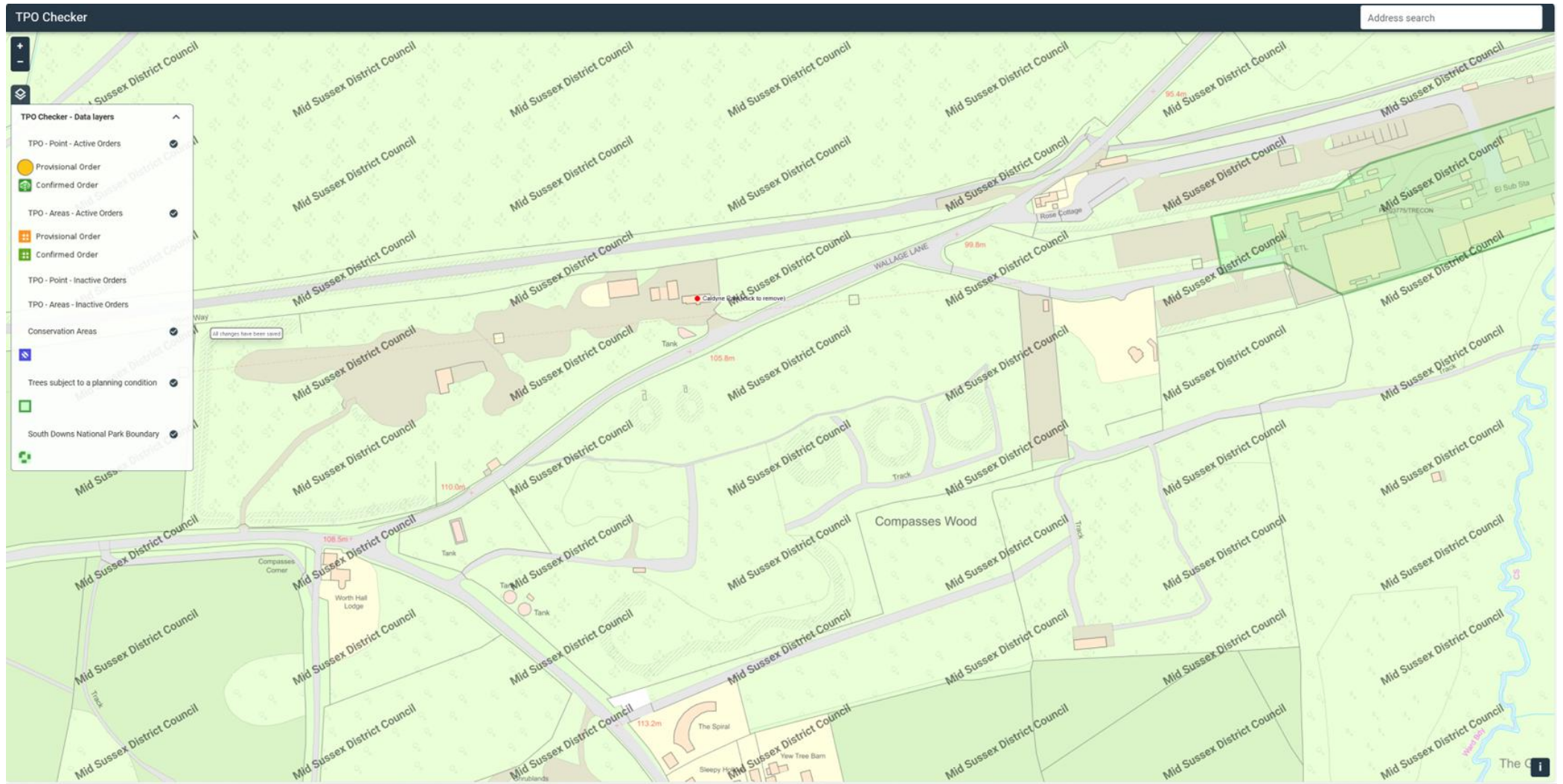
MAGIC Map screenshot, (showing Ancient Woodland designation for sections of the proposed development Site):



Land at Caldine Park, Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ

Arboricultural Impact Assessment (BS:5837)

LPA's TPO/Conservation Area checker screenshot:



Land at Caldine Park, Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ

Appendix 5: Report Limitations, (1.5.2 – 1.5.19)

- 1.5.2 The observations, assessments & analyses made are valid from the time of inspection. These, & any recommendations made, are subject to the timescales detailed elsewhere in this report, applicable from time of surveying.
- 1.5.3 This is an arboricultural report & as such no reliance should be given to comments relating to buildings, engineering or soil.
- 1.5.4 This is not an arboricultural health & safety survey, a more detailed survey of internal decay detection etc. can be supplied but would be subject to a further fee.
- 1.5.5 This is a report which accompanies a planning application and provides no detail specifically in relation to the health and safety of the trees.
- 1.5.6 This report does not comment on the effects of surveyed trees in relation to any issues of subsidence or heave.
- 1.5.7 The analysis of the tree's / trees' status & assessments of condition, (in this report), are valid for 12 months from the date of site-survey. Any appraisals, & conclusions based thereon, will be invalidated & need reviewing in the event of material change/s to the site or site usage which result in any impact to the trees, (including their rooting zones), from the time of site-surveying, however minor. Consultation with The Sussex Tree Company, (STC), will be necessary, for clarification purposes, if there is any doubt as to whether any such changes materially affect the trees.
- 1.5.8 Formal assessment of topography, drainage, service conduits, soil conditions & the like are outside the scope of this report. If topographical surveying for the development project has been undertaken, the results of this have not been shared with STC. Existing Site Plans & Proposed Site Plans were provided to STC by the Client / Client's representatives.
- 1.5.9 Other specialist arboricultural surveys (e.g., root collar examination or sonic tomography) have not been made and are beyond the scope of this report.
- 1.5.10 Specific laboratory investigations of soil properties (plasticity index, moisture content, suction pressure) have not been made & are beyond the scope of this report.
- 1.5.11 Where further inspections of particular trees, (or features of trees), are made as recommendations in this report, an additional or updated report must be submitted following these inspections; either as a new report or part of a re-edit of the comprehensive report. The findings for the re-inspected trees are **only** valid for 12 months from the time of re-inspection. Any inspections are chargeable.
- 1.5.12 Trees are growing dynamic structures. Whilst reasonable effort is made to identify

defects within the trees inspected, no guarantee can be given as to the absolute safety or otherwise of any individual tree. No tree is ever absolutely safe due to the unpredictable laws & forces of nature. As a result of this, natural failure of intact trees will occur; extreme climatic conditions can cause damage to even apparently healthy trees.

- 1.5.13 Trees are living organisms & as such are subject to change through the natural occurrence of growth, maturation and senescence – as well as in response to naturally occurring events outside of human control & influence. When the inspected tree/s experience naturally occurring events materially affecting their status, the findings in this report will be invalidated; re-inspection may be necessary to meet the thresholds for duty-of-care liabilities. Such events can be, (but are not limited to): strong, storm winds; extremely heavy, sustained and unusual rainfall resulting in sustained waterlogging of rooting zones; significant periods of drought/low rainfall; or heavy, settled snowfall. Any re-inspections are chargeable.
- 1.5.14 This report will seek to clarify the existence or otherwise of statutory protections on trees for the site and publish findings. However, should any operational works be commissioned because of the survey it is incumbent on the contractor undertaking those works to seek clarification from the Local Planning Authority and give any notifications / seek any permissions should protections be in place and not covered by the granting of the proposed project's planning permissions. The LPA, (Mid-Sussex District Council), has been contacted to determine whether any statutory protections to trees at the Site exist; their on-line TPO / Conservation Area checking information was accessed & it shows that there are no statutory protections to trees at the Site; however, sections of the Site are designated as Ancient Woodland – these areas are indicated on associated plans.
- 1.5.15 Should any tree works be commissioned as a result of recommendations made in the Tree Survey the commissioned contractors should adhere to BS:3998 – 2010: Tree work; Recommendations.
- 1.5.16 On undertaking the recommended works, the arborist / tree surgeon must without delay report any defects that become apparent while climbing or working on the tree/s in question. Those defects must be reported immediately to the relevant project manager, landowner &/or the author of this report to enable the appropriate remedial action.
- 1.5.17 The Wildlife and Countryside Act 1981, as amended by the Countryside & Rights of Way Act 2000 provides statutory protection to birds' nests whilst under construction or in use, & any contents therein. Any species listed in the Conservation of Habitats and Species Regulations 2017, are also protected, (commonly known as 'European Protected Species' – 'EPS'). Some may create habitats within trees. This is particularly relevant to bats as trees and features of trees can provide roosts. All bats and their roosts are protected. Whilst this report does make an assessment to the likelihood or otherwise of bat roosts, this is indicative & cannot be relied upon, as all observations are made from ground level. It is incumbent on any contractor

undertaking operational works to ensure appropriate aerial checks are made for EPS before commencement of works with the potential to disturb or destroy a roost.

- 1.5.18 This is an arboricultural report & therefore does not rely on ecological or archaeological data. If either is commented upon within the report further professional advice should be sought.
- 1.5.19 To achieve the study objectives stated in this report, STC were required to base our conclusions on the best information available during the period of the investigation & within the limits prescribed by our client in the agreement. No investigative method can completely eliminate the possibility of obtaining partially imprecise or incomplete information. Thus, we cannot guarantee that the investigations completely defined the degree or extent of e.g., species abundances or habitat management efficacy described in the report.
- 1.5.20 All rights in this report are reserved for the commissioning client and The Sussex Tree Company. The report or its constituent contents may not be lent, sold, hired out or divulged to any 3rd party not directly involved with the development project unless permission is sought and obtained from The Sussex Tree Company.

Appendix 6: Arboricultural Survey – methodologies:

Arboricultural survey

- On-site analysis follows the VTA practice, developed by Prof. Dr. Claus Mattheck and published by Lonsdale, (VTA: 1999); all observations are made from ground level.
- Assessment uses the guidance for survey requirements & categorisation uses the Cascade Chart for Tree Quality Assessment, (Appendix 1), both taken from BS 5837: 2012. Recorded trees have been given a reference number which can be found within the Tree Survey, & on the supplied drawings.
- Assessment is based around the useful life expectancy of the tree(s) & their condition & their contribution to the amenity value of the environment – categorised using four letters, the values of which are described in Appendix 1, Schedule 1.
- Branch spread, in general, has been measured on four sides together correlating to the compass points: north; east; south; west. Stem diameters are measured at 1.5m above ground.
- Current tree heights have been measured using a HAGLOFF clinometer, except where trees are inaccessible, when measurements will have been estimated, &, if possible, using Pythagoras' theory of trigonometry.
- Where, due to local constraints such as impenetrable vegetation or tree location in

Arboricultural Impact Assessment (BS:5837)

private property to which direct access to trees was not possible, field data will have been estimated and referenced in the data with shading, (grey) and an (E) beside the figure.

Ash die-back disease

- Following reports of ash dieback disease, first reported in 2012 & caused by the fungus *Hymenoscyphus fraxineus*, there is concern over the future health of ash trees in the UK. Any categorisation of ash trees within this survey are based around the condition at the time of surveying and life expectancy in a normal environment.
- Where Ash trees are found to have the disease, they will fall into a C or U category, (dependent on contemporary research findings), & be reported to the Forestry Commission, as well as the client.
- More information can be found on the Forestry Commission's web page: <http://www.forestry.gov.uk/planthealth>

34

Glossary / key to interpreting tree survey data sheet

- **Tree/group of trees number:** where trees have historic tree-tag numbers attached to their stems, the tag number is used for identification. Where there are not tags, a number is attributed to each tree or group of trees surveyed and corresponds to marked areas on the Tree Location Plan(s).
- **Species:** the botanical & common names for each tree or group of trees is provided.
- **Height:** an estimated height is given in metres; although a clinometer is used, these devices are not infallible. Precise ways to obtain tree height are by either climbing to the highest growth tip & measuring from there to ground level; or to using Pythagoras' theory of trigonometry to mathematically calculate height – however, the Haglöf clinometer STC LLP use estimates within tolerable levels of accuracy.
- **DBH range:** an estimation of the tree's diameter at breast height is given, measured in millimeters and in ranges of 75mm. The typical DBH reading is taken at around 4.5ft or 1.37m AGL – diameters are taken at 'breast height' to avoid potential inaccurate readings at ground level, where buttressing of roots is common for many species.
- **Age Class:** a subjective judgment on the extent of maturation of each tree or group of trees surveyed; each value is based on the report author's knowledge of the particular species of tree in question & is judged against the average length of life for the species in an 'ideal' or 'usual' surrounding environment. The categorisation used is:
 - Newly planted
 - Juvenile
 - Semi-mature

Land at Caldyne Park, Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ

Arboricultural Impact Assessment (BS:5837)

- Mature
 - Over-mature
 - Veteran
 - Dead specimen
-
- **Bat Habitat Potential:** an assessment of the tree or its features and the likelihood whether these present a suitable potential habitat for bats or other EPS. The categorisation used is:
 - n/a
 - Low
 - Medium
 - High
-
- **Condition:** an appraisal of the tree or group of trees present overall structural status & physiological health, as well as any significant pre-existing external environmental impacts. The categorisation used is:
 - n/a
 - Dead
 - Poor
 - Fair
 - Good
-
- **Risk Rating:** an assessment of the observed hazards presented by the tree/group of trees & associated features, & the categorisation of the severity of risk these present to persons or property. The categorisation used is:
 - Low – potential risk to damage persons or property is within tolerable levels; harm is not likely to occur within the next 12-24 months
 - Medium – potential risk to damage persons or property is of a medium likelihood; harm may occur within the next 6-12 months
 - High – potential risk to damage persons or property is of a high likelihood; harm may occur within the next 3-6 months
 - Immediate – potential risk to damage persons or property is immediately likely; harm may occur immanently
-
- **Remedial recommendations:** enacting the recommendations for work given will mitigate or remove any hazard observed & lower the tree/group of trees' risk rating to tolerable levels; this does not apply where the recommendation given is for further surveying, analysis or investigation – in such instances the report's recommended instructions must be followed and delivered, as if the risk rating for the tree/groups of trees were 'immediate'. Further recommendations made as a result of the re-surveying, assessment, analysis or investigation also must be followed & delivered to lower the tree/group of trees' risk rating to tolerable levels, (any associated timeframes will apply from the date of the re-surveying, assessment or investigation).

Arboricultural Impact Assessment (BS:5837)

- **Abbreviations and glossary:** certain commonly used phrases have been abbreviated for ease of delivering this survey. These are listed below. Certain technical terms used in arboriculture may appear in this report & their precise meaning may not be familiar to ‘lay-people’, so the author has supplied brief explanations. These are listed in the glossary below:

Abbreviations:	NWR –	No works recommended
	GL –	Ground level
	AGL –	Above ground level
	DBH –	Diameter at breast height
	VTA –	Visual tree analysis
	DOC –	Duty of Care
	CODIT –	Compartmentalisation of dysfunction/damage in trees

Glossary:

Access Facilitation Pruning – *description of an arboricultural operational task* – A one-off tree pruning operation necessary to provide access for operations on site, which, when complete, are without significant adverse impact on tree physiology or amenity value.

Aerial investigation and report – *a description of arboricultural consultancy practice* – to undertake an investigation of aerial sections of a tree, not observable from ground level, using a systematic approach; to analyse structural integrity and any observable features – recommended when the VTA analysis from ground level is incomplete/inconclusive and the consultant has seen a feature/s which require further investigation to decide on a risk-rating and/or works priority.

Arboriculturalist – *description of professional status* – person who has gained expertise in the field of trees, (with particular reference to construction projects), through relevant education, training and experience.

Arboricultural Impact Assessment (AIA) – *arboricultural consultancy task for trees on development sites* – a study, undertaken by an arboriculturalist, to identify, evaluate and

possibly mitigate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of any site layout proposal.

Arboricultural Impact Assessment (BS:5837)

37

Arboricultural Method Statement – *arboricultural consultancy task for trees on development sites* – a document describing the methodology for the implementation of any aspect of development that has potential to result in loss of or damage to a retained or newly installed tree.

Bifurcated – *description of tree architecture* – when a tree has 2 distinct stems.

Cambium/cambial – *description of tree morphology* – the layer of cellular structure immediately behind the bark, where vascular tissues are created.

Cavity – *description of tree morphology* – a feature of a tree's architecture that is an incursion into the interior wood in some way, shape or form, usually formed as a result of a branch tearing away from the tree, pathogenic incursion or animal incursion, (or combination of all of these).

Canker – *description of tree morphology* – an area of bark/wood that exhibits dysfunctional growth patterns, often with localised degradation in structural integrity.

Construction Exclusion Zone – *arboricultural consultancy terminology* – an area based on the RPA where access is prohibited for the duration of the enabling and construction phases of a development project

Crown – *description of tree architecture* – the part of the tree distinct from the roots and stem(s), where most of the tree's leaves are, supported by primary, secondary, tertiary branches and twigs/shoots.

Drop-crotching – *description of arboricultural operational practice* – to prune a tree by selecting branches with terminal growth as the reduction's desired length from crown perimeter.

Epicormic – *description of tree morphology* – a type of branch/shoot growth emergent from adventitious buds or parenchyma tissue present within the layer of wood immediately below the tree's bark, (cambium). These branches attach to the tree's branches/stems in a way that is structurally much weaker than branch attachments made in the normal course of a tree's development.

Ganoderma applanatum – *a tree pathogen* – commonly known as the artist's bracket, artist's conk or bear bread. It is a wood-decay fungus that causes rot of the tree's heartwood. Its fruiting bodies

are hard brackets that appear white at first and then later brown in colour.

https://en.wikipedia.org/wiki/Ganoderma_applanatum

Internal investigation and report – a description of arboricultural consultancy practice – to undertake an investigation of the trees internal wood/wood structures using specialist equipment; either a Resistograph drill machine or a tomograph machine. These will give readings that when analysed that can be interpreted by the arboricultural consultant to make judgments about the integrity or otherwise of the tree's internal wood structures and deduce/extract from these the likelihood of failure and/or recommendations to mitigate risks.

38

Kretzschmaria deusta – a tree pathogen – commonly known as 'brittle cinder' is a fungus and plant pathogen. It is a 'soft rot', preferentially degrading the cellulose, then later both the cellulose and lignin that make up wood cells. It colonises the lower stem and/or roots of living trees through injuries or by root contact with infected trees. It can result in sudden breakage/complete failure from the root/stem junction in otherwise apparently healthy trees.

https://en.wikipedia.org/wiki/Kretzschmaria_deusta

Lesion – description of tree morphology – a small area of dysfunctional bark tissue.

Limb – description of tree morphology – branch.

Management recommendations – arboricultural consultancy task for trees surveyed – comments based on VTA observations, on the condition of the tree, group or woodland and recommendations for future works.

Monolith – description of arboricultural operational practice – to partially fell a tree, but leave a designated length, (above ground level), of stem standing; the remaining section is not considered a hazard and will become a site for wildlife habitation.

Re-trenchment pruning – description of arboricultural operational practice – crown reduction in late-mature and senescent trees to anticipate or keep pace with decline in the crown.

Root Protection Area, (RPA) – arboricultural consultancy terminology – a layout design tool showing the minimum area needed around a tree's stem to protect its subterranean rooting structures so as to maintain the tree's future viability, if left undisturbed.

Root/stem junction – *description of tree morphology* – where the root and the stem join.

Scaffold – *description of tree morphology* – a primary branch; one that grows directly from the stem and acts as a support for secondary branching

Self-set – *description of a tree's origins* – when the tree has been naturally propagated, in other words, not planted by human agency.

Tree Constraints Plan – *a description of arboricultural consultancy task for trees on development sites* – a scale drawing showing the pre-existing trees, groups of trees and hedges, (and other landscape features), on the site of a proposed development as well as the footprint of the proposed development, thereby illustrating what, if any, constraints the tree-scape imposes.

Tree Protection Plan – *a description of arboricultural consultancy task for trees on development sites* – a scale drawing incorporating finalised design proposals for a development, showing locations and dimensions of retained trees, their RPAs and the location of tree and landscape protection measures; also, the locations of any new trees to be installed, (and any tree and landscape protection measures required for these).

Trifurcated – *description of tree architecture* – when a tree has 3 distinct stems

Union – *description of tree morphology* – a site within the tree's architecture where 2 branches or stems, (or combination of both), originate

Veteran Tree – *arboricultural specific terminology* – a tree that, by recognised criteria, shows up to 4 features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned. These might be large girth, habitat features, signs of crown retrenchment and hollowing of the stem.

Wound-wood/reaction wood – *description of tree physiology* – a type of wood grown by trees, distinct from wood grown in the usual course of development, and in reaction to a wounding event, as part of the CODIT defense strategy trees have. Wound-wood has greater strength properties than wood grown in the usual course of development.

Arboricultural Impact Assessment (BS:5837)

40

Land at Caldyne Park, Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ

Appendix 7: Summary of author's qualifications and experience

The author, Nicholas Eddison, has the following qualifications and experiences and has undertaken CPD as described, below:

i. Qualifications

BA (Honours): Politics, Philosophy and History, (Birkbeck College, University of London)

Level 4 Diploma in Arboriculture, (Merrist Wood)

LANTRA Professional Tree Inspection Certificate

Arboricultural Association Assessor for the Approved Contractor scheme

Assessor for the Level 4 qualification at Tree Life AC

Arboricultural Association Certificate in Undertaking Aerial Tree Inspections

Named Manager in the Arboricultural Association's approved contractor scheme for a medium/large business

Arboricultural Association Certificate in Risk Assessment for Commercial Arboriculture

Arboricultural Association Certificate in Subsidence Reporting in relation to Trees

Certificate in Bat Awareness Training: compliant with BS: 8596: 2015 – Surveying for Bats in Trees and Woodland

Arboricultural Association Certificate in Assessing Tree Risk – Likelihood of Failure

Arboricultural Association Certificate in Assessment of Tree Forks

NPTC Level 2 Certificates in: Chainsaw Cross-Cutting and Maintenance; Felling and Processing Trees up to 380mm; Tree Climbing and Aerial Rescue; Use of chainsaw from a Rope and Harness

Level 2 Award in Basic Electrical Knowledge, (Arboriculture)
City and Guilds: Signing and Guarding, (Chapter 8)

ii. Practical/relevant experience

10 years as a practicing Arboricultural Consultant
5.5 years at director level as an Arboricultural Director
Assessor for the Arboricultural Association's Approved Contractor scheme.
Trainer of chainsaw maintenance and cross-cutting at Brinsbury College.
Over 30 years' experience as a practicing Climbing Arborist; in the domestic, commercial and civil arenas.
Over the preceding 10 years the author has undertaken and delivered multiple Tree Condition Survey Reports; BS:5837 Tree Surveys and Arboricultural Reports in support of planning applications; Aerial Inspection Reports; Subsidence Reports; Resistograph Internal Investigation Reports; Tree Hazard Assessment Report; also worked as Project Arboriculturalist for civil development projects.

42

iii. Continuing professional development

The author periodically attends courses and lectures in order to maintain his knowledge base and to further his learning and development. Examples of recently attended CPD events:

- Taught sessions for Thorough Inspection of LOLER equipment, (Arboriculture)
- Regular CPD sessions required for Assessors of the Arboricultural Association's Approved Contractor scheme.
- Arboricultural Association's seminar on the Approved Consultant scheme
- a training day for AutoCAD and the 'Keytree' application, from Keysoft solutions – September 2019;
- the most recent meeting of TDAG, (Trees in Design Action Group) – September 2019;
- a seminar in morphophysiology of trees at Barcham tree nursery – summer 2019;
- Arboricultural Association's Subsidence Reporting course – Spring 2019;
- Arboricultural Association's Aerial Tree Inspection course – Spring 2019; the
- Arboricultural Association's Business Masterclass – Winter 2019;
- and Claus Mattheck's farewell lecture at Loughborough University in the summer of 2018.

The Sussex Tree Company:

We are providers of specialist services to the Arboricultural and Development industries in the UK:

Arboricultural Consultancy: all requirements are serviced

Business-to-business advice and assistance for the arboricultural industry:

- For achieving compliance and award of Arboricultural Association approved contractor status
- For developing efficient and ergonomic business systems
- For developing efficient and intuitive financial reporting and management systems

All of the 3 service offerings improve businesses and generate increased growth in revenues, profits and in professionalism

Development and Construction: we are a 'single-point of contact' for all tree-related requirements; from design/pre-planning to post-handover

Visit our website at www.thesussextreecompany.co.uk for a comprehensive overview



Land at Caldyne Park, Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ

Arboricultural Impact Assessment (BS:5837)

45

Land at Caldyne Park, Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ

Arboricultural Impact Assessment (BS:5837)

46

Land at Caldyne Park, Turners Hill Road, Crawley Down, West Sussex, RH10 4NQ