

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

- Tree Survey
- Arboricultural Impact Assessment
- Tree Constraints Plan
- Tree Protections Plan

SITE LOCATION:

38 Midfields Drive
Burgess Hill
West Sussex
RH15 8EN



Date of Issue:
August 2024

Arboricultural Impact Assessment (BS:5837)

for...

Mr. Ross Parsons

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1.0 Introduction / Background:

1.1 Introduction

- 1.1.1 The principal author of this Arboricultural Impact Assessment, (AIA), is Nicholas Eddison BA, DipArb, Senior 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.

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1.2 Instruction

- 1.2.1 We are instructed by Mr. Ross Parsons, ('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'); after the 'Recommendations' section in this report, (section 10, below), a draft Arboricultural Method Statement, ('AMS'), is provided, however, a further, more detailed AMS report may be required by the Local Planning Authority, ('LPA'), as a condition of granting of planning permission.
- 1.2.3 Instruction follows an 'Invalid Application' letter, received by Mr. Andrew Swaisland, of Hills Architectural Design, (the client's architects), on 31st July 2024, which requested the provision of an arboricultural report, (as well as other items), so that the application for planning permission could be validated, (see Appendix 4 for a screenshot of the relevant sections of this letter).

1.3 Scope of project

- 1.3.1 The development site, ('the Site'), is part of the existing property at 38, Midfields Drive, Burgess Hill, West Sussex, RH15 8EN. 38, Midfields Drive is a residential property comprising of a detached, single-storey house with off-street parking to the front, a garage attached to the western elevation of the house and gardens to the rear. The Site is shown on existing block plans, produced by Hills Architectural Design, (see Appendix 2). The proposed development is to extend the existing property by adding a single-storey extension to the rear, extend the existing roof and add a loft conversion to the house.
- 1.3.2 The scope of this project is fourfold:
- 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 Arboricultural Impact Assessment, ('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

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- IV. Provide a draft AMS which will provide guidance on methodologies to ensure the implementation of the design plan does not negatively impact any 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.

Table 1: Document and Plans Provided / Referenced

Document Description	Reference Number	Prepared By	Date
Existing Plan & Elevations	MD-24-002	Hills Architectural Design	07/2024
Proposed Plans	MD-24-003	Hills Architectural Design	07/2024
Location & Block Plans	MD-24-001	Hills Architectural Design	07/2024
38 Midfields Drive – Tree Constraints Plan	STC-38MD-TCP-01	The Sussex Tree Company	26/08/2024
38 Midfields Drive – Tree Retention and Protection Plan	STC-38MD -TRPP-01	The Sussex Tree Company	26/08/2024

1.1.5 The report publishes: research methodology, findings and recommendations in relation to all existing trees and hedgerows which may be impacted by the proposed development; quantifies these trees / hedgerows according to their estimated life expectancy and 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 / hedgerows that are to be retained; and suggests appropriate mitigation for any trees / hedgerows to be removed. More detailed protection methodologies and mitigation strategies could be presented as a separate, detailed AMS report document.

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)

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1.6 Access conditions

- 1.4.1 Access to all parts of the property was unimpeded. Access to 3rd party land was required and was permitted. Access to public land was not required to complete the tree survey.

2.0 Planning Policy and Legislation

2.1.1 *National Planning Policy Framework (NPPF)*: When determining planning applications, local planning authorities, (LPAs), should aim to conserve and enhance biodiversity. 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. Opportunities to incorporate biodiversity in and around developments should be encouraged (Paragraph 118).

2.1.2 When determining planning applications, LPAs aim to apply the following principles:

*Planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, **unless the need for, and benefits of, the development in that location clearly outweigh the loss** (paragraph 118).*

2.1.3 There are no trees, groups of trees or hedgerows which require removal in order to implement the design plans. Because of this, the principles for refusal within the NPPF would not be considered applicable.

2.2 Statutory Tree Protections

2.2.1 The LPA's online planning constraints map was accessed and consulted 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 There are no statutory protections on trees, groups of trees or hedgerows located at the site, nor are there for any 3rd party tree contained within the tree survey.

2.2.3 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 when referring "to the felling of fruit trees or trees standing or growing on land comprised in an orchard, **garden**, churchyard or public open space."

2.3.2 As there are no proposed tree removals, felling licence restrictions are not applicable.

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) provides 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 23rd August 2024, who surveyed all the significant trees and hedgerows 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 1.5m above ground level; where this is not possible, this is indicated in the survey sheet data). The owner of the site was 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 within the grounds of the existing property at 38, Midfields Drive, Burgess Hill, West Sussex, RH15 8EN. 38, Midfields Drive is a residential property, consisting of a detached single-storey brick under tile house, with a garage building attached to the property's western elevation, off-street parking to the front of the house and gardens to the rear. Midfields Drive is a residential road located within the centre of Burgess Hill. The Site is at the rear of the existing house and within the existing garden of the property. The majority of the gardens are lawned. There is a wooded area, (G1 on the survey), occupying approximately 50% of the garden's western boundary, (the majority of the property's trees are located within this wooded area). There is a hedge, (H1 on the survey), occupying the entirety of the property's rear, northern boundary. To the northeast of the garden there is a group of Oak trees, (all of which are located in a 3rd party property, Bridge Cottage), which are recorded on the tree survey, (T10 – T14). There is side access to the property's rear garden via a gate at the eastern side of the house. The Site and its location can be seen on the drawing, Existing and Proposed Block Plans, (Appendix 2).

3.2.2 Site topography:

- The Site is flat.
- The property is roughly triangular-shaped. The western boundary is approximately 50m in length; the northern boundary is approximately 22m in length; and the eastern boundary is approximately 46m in length.
- There are areas of pre-existing hard surfacing at the front and rear of the house; at the front, this can be described as 'off-street parking'; at the rear, this can be described as a patio area.
- Any additional construction activity, (including the storage of construction materials), is to occur either on the off-street parking at the front of the house or within the existing garden, outside the Root Protection Areas, ('RPAs'), of any retained tree / hedgerow.
- All of the Site will be affected by the proposed development works.

- 3.2.3 The site's underlying geology is predominantly Clay:

Superficial deposits: no superficial deposits recorded.

Bedrock geology: Weald Clay Formation - Mudstone. Sedimentary bedrock formed between 133.9 and 126.3 million years ago during the Cretaceous period.

4.0 Planning Proposal

- 4.1.1 The planning proposal is to add a single-storey extension onto the rear elevation of the existing house at 38, Midfields Drive, to provide a self-contained annexe; and to add a roof extension and a loft conversion, with triple dormers to the rear elevation and 3 roof lights to the front elevation, with a high level window to each side elevation.

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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 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, groups of trees or as hedgerows, where these trees were aerodynamically, culturally or visually important as hedgerows. The tree numbers associated with each tree are cross-referenced within the schedule and plans at Appendix 1 and 2 respectively. The complete method of data collection for the tree survey is provided at Appendix 6.

5.2 Summary of Data

- 5.2.1 The overall survey includes records of 14no. individual trees, 1no. group of trees and 1no. hedgerow. There are four trees classified as category A, five trees and one hedgerow classified as category B and five trees and one group of trees classified as category C. Of the category A trees, none impact the design proposal for the proposed development works; all category A trees are scheduled for retention. Of the five category B trees and one category B hedgerow, none impact the design proposal, but two may be minimally affected by the proposed development works in so far as there may be minimal encroachment into their RPAs by the erection of construction scaffolding. Of the five category C trees and one category C group of trees, none impact the design proposal, but one may be minimally affected by the proposed development works in so far as there may be minimal encroachment into its RPA by the erection of construction scaffolding. The application considers all trees, groups of trees and hedgerows located on or within influencing distance of the proposed development area.
- 5.2.2 H1, (Cherry, *Prunus* spp. – category C), is a semi-mature specimen located within G1. It has a less than optimal rooting area, due to the presence of concrete debris and is partially suppressed by juvenile specimens of Blackthorn, (growing as part of G1). T1 is an

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unremarkable example of the species. T1 is scheduled for retention.

- 5.2.3 T2, (Field Maple, *Acer campestre* – category C), is a mature specimen located within G1. T2 is heavily ivy-clad and historically has been unsympathetically topped at approximately 4m AGL. T2 is an unremarkable example of the species. T2 is scheduled for retention.
- 5.2.4 T3, (Field Maple, *Acer campestre* – category C), is a semi-mature specimen located within G1. T3 is heavily ivy-clad and historically has been unsympathetically topped at approximately 4m AGL. T3 is an unremarkable example of the species. T3 is scheduled for retention.
- 5.2.5 T4, (Field Maple, *Acer campestre* – category C), is a mature specimen and a 3rd party tree located in neighbouring property to the west of the Site. T4 has historically been unsympathetically topped at approximately 4m AGL. T4 is an unremarkable example of the species. T4 is scheduled for retention.
- 5.2.6 T5, (Field Maple, *Acer campestre* – category C), is a semi-mature specimen located within G1. T5 is heavily ivy-clad and historically has been unsympathetically topped at approximately 4m AGL. T5 is an unremarkable example of the species. T5 is scheduled for retention.
- 5.2.7 T6, (Yew, *Taxus baccata* – category B), is a semi-mature specimen located within G1. T6 bifurcates at approximately 1m AGL, is partially suppressed by adjacent trees and is ivy clad. T6 is a satisfactory example of the species. T6 is scheduled for retention.
- 5.2.8 T7, (Hornbeam, *Carpinus betulus* – category A), is a mature specimen located within G1. T7 bifurcates from ground level. T7 is ivy clad. 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 and a 3rd party tree located in neighbouring property to the west of the Site. T8 is a remarkable example of the species. T8 is scheduled for retention.
- 5.2.10 G1, (Blackthorn, *Prunus spinosa*, Holly, *Ilex aquifolium*, Field Maple, *Acer campestre*, Holm oak, *Quercus ilex* – category C), is a group of juvenile specimens located along the northern half of 38, Midfields Drive's rear western boundary and encroaching up to 6m eastwards into the garden area. None of G1's individual specimens locations, nor their canopy spreads, are shown on the TCP or TRPP, as all of the specimens DBH's are below the specifications given as suitable for recording in the BS:5837 document. G1 is recorded, indicatively, to give locational context to T1 – T8. G1 is an unremarkable group of specimens. G1 is scheduled for retention.
- 5.2.11 T9, (Oak, *Quercus robur* – category A), is a mature specimen located in the northern section of 38, Midfields Drive's rear garden and there is a tree house constructed around its lower stem region. T9 is a remarkable example of the species. T9 is scheduled for retention.
- 5.2.12 H1, (Leyland Cypress, *X Cupressocyparis leylandii* – category B), is a semi-mature hedgerow located along 38, Midfields Drive northern boundary. H1 is a satisfactory example of the species. H1 is scheduled for retention.
- 5.2.13 T10, (Oak, *Quercus robur* – category B), is a mature specimen located in a 3rd party garden to the northeast of the Site, Bridge Cottage. T10 has recently undergone a significant

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pruning operation. T10 has two large wounds in the lower stem region. T10 is a satisfactory example of the species. T10 is scheduled for retention.

5.2.14 T11, (Oak, *Quercus robur* – category B), is a mature specimen located in a 3rd party garden to the northeast of the Site, Bridge Cottage. T11 has recently undergone a significant pruning operation. T11 has a large wound in the lower stem region. T11 is a satisfactory example of the species. T11 is scheduled for retention.

5.2.15 T12, (Oak, *Quercus robur* – category B), is a mature specimen located in a 3rd party garden to the northeast of the Site, Bridge Cottage. T12 has recently undergone a significant pruning operation. T12 has a large wound in the lower stem region. T12 is a satisfactory example of the species. T12 is scheduled for retention.

5.2.16 T13, (Oak, *Quercus robur* – category B), is a mature specimen located in a 3rd party garden to the northeast of the Site, Bridge Cottage. T13 has recently undergone a significant pruning operation. T13 has an unbalanced crown. T13 is a satisfactory example of the species. T13 is scheduled for retention.

5.2.17 T14, (Oak, *Quercus robur* – category A), is a mature specimen located in a 3rd party garden to the northeast of the Site, Bridge Cottage. T14 bifurcates at ground level and has 2 distinct, co-dominant stems. T14 is a remarkable example of the species. T14 is scheduled for retention.

5.2.18 The location of each tree / group of trees and their associated constraints including canopy spread and root protection areas are illustrated on the Tree Constraints Plan at Appendix 2.

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	1	6
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).	5	1	0	6
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	14	1	1	16

5.2.19 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, still be

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considered to be of a lower category given its maturity, condition or overall impact to the application site.

- 5.2.20 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.
- 5.2.21 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.
- 5.2.22 Retention of trees is considered desirable, wherever possible, as it ensures continuity of tree cover and provides a mature landscape to the proposed development.

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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 and canopy spreads of all trees and groups are shown in Appendix 1, (Tree Survey Schedule), and Appendix 2, (Tree Constraints Plan).
- 6.1.2 The Arboricultural Impact Assessment considers the development proposals and how they relate to the trees on the site. Any tree and design conflicts are highlighted, and possible remedial action suggested if appropriate. The proposed design is shown on the both the Tree Constraints Plan and the Tree Removal and Protection Plan in Appendix 2.

6.2 Tree Removal

- 6.2.1 The current outline design plan does not require the removal of any tree, group of trees or hedgerow. Table 3 lists the number and quality category of trees / hedgerows which require removal in order to facilitate the proposed development and those to be retained.

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Table 3: Arboricultural implications of the proposed development

	Tree / Group of trees / Hedgerow Quality Category			
	A	B	C	U
Trees to be removed				
Groups of trees to be removed				
Hedgerows to be removed				
Totals	0	0	0	0
Trees to be retained	T7, T8, T9, T14	T6, T10, T11, T12, T13	T1, T2, T3, T4, T5,	
Groups of trees to be retained			G1	
Hedgerows to be retained		H1		
Totals	4	6	6	0

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, and the RPA should be guided from Annex D of BS5837:2012.
- 7.1.2 The RPA is an area in which no ground works should be undertaken without due care in relation to the retained tree(s) and 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 and its exact location will depend upon arboricultural considerations and ground conditions.
- 7.1.3 The RPA for the trees and hedgerows have been calculated as prescribed by BS5837:2012 and 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 and 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 and total area for the RPA as square metres are shown.

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- 7.1.5 The design plan does not require any tree removals, nor are there any significant constraints upon it imposed by the RPAs of any trees. There may be minimal constraints in so far as there may be a requirement to site the feet of scaffolding in the peripheral sections of 3 trees. Should the design plan require this, mitigatory measures can be devised and employed to ensure that the scaffold feet do not compact the affected areas of the trees' RPAs. These can be illustrated in a detailed AMS, should the LPA require this, as a planning condition.
- 7.1.6 As there are no new incursions into the RPA of any retained trees, the recommendations in the British Standard document BS:5837, section 7.4.2..3 are met, *"New permanent hard surfacing should not exceed 20% of any existing unsurfaced ground within the RPA"*

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7.2 Existing RPA Incursions

- 7.2.1 There are no existing incursions into the RPAs of any retained tree.

7.3 Proposed demolition works & level changes within the RPAs

- 7.3.1 In order to implement the design proposals no demolition works are required within the RPA of any retained tree.
- 7.3.2 For all demolition / construction works, any plant and machinery, if used, will be either be sited on existing hard standing or outside the RPA of any retained tree.
- 7.3.3 Any spoil created by excavation works will not be stored within the RPA of retained trees; ideally, spoil created will be removed from the site contemporaneously as created.
- 7.3.4 There are no proposed level changes within the RPAs of retained trees.

7.4 Proposed construction of the new extension to 38, Midfields Drive

- 7.4.1 The construction of the new extension is potentially constrained by siting of scaffold feet within the RPAs of 3 trees, as detailed above in section 7.1.5.
- 7.4.2 As detailed above in sections 7.1.5 and 7.1.6, the recommendations of BS:5837, (section 7.4.2.3), are met.
- 7.4.3 Where there is no pre-existing hard surfacing protecting the RPAs of retained trees / groups of trees / hedgerows, tree protection fencing will be installed beyond the extremities of the unprotected RPAs throughout the property in order to ensure no unplanned, detrimental incursions occurs to retained trees / groups of trees / hedgerows.
- 7.4.4 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.

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- 7.4.5 Tree protection fencing must be erected prior to the commencement of active demolition and construction works and remain in situ until completion of the proposed development project.
- 7.4.6 Locations of tree protection fencing can be found on the Tree Retention and Protection Plan at Appendix 2.
- 7.4.7 Specifications for the design of tree protection fencing and precautionary signage to be attached to this fencing can be found in Appendix 3.

7.5 Construction scaffolding

- 7.5.1 The construction of the new extension may require the siting of scaffolding feet within the RPAs of other retained trees, as well as T14. These are T2, T12 and T13. Mitigatory strategies for distributing weight to avoid soil compaction must be adopted if these encroachments occur. These could be described in a detailed Arboricultural Method Statement, ('AMS'), if so required by the LPA.

7.6 Infrastructure

- 7.6.1 Due to the details provided for this application there is insufficient information relating to below ground infrastructure available at present to comment. If services need to enter RPAs 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 and form, shadowing and 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 In order to implement the design proposals there is no requirement to prune the above ground parts of any retained tree.
- 8.1.3 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 retained trees / group of trees / hedgerows on the proposed development in this regard, as the proposed extension is constructed as a predominantly north-facing structure and the proposed loft conversion, with associated different types of windows, is to be constructed within the footprint of the existing house – meaning there will be no shading above and beyond what presently exists for the existing structure.

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8.2 Impact on Amenity

- 8.2.1 As there are no trees, groups of trees or hedgerows to be removed 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. Most of the retained trees / groups of trees / hedgerows do not impact on the proposed new development in terms of future growth, (assuming the hedgerows are maintained according to the existing maintenance schedule).
- 8.3.2 There is a minor potential that the future growth of T3 – T5 may be a constraint; this can be mitigated by suitable future pruning.

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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 and maple trees, (though not Japanese Maples) – therefore there is no impact on the site or its users, as all the Field Maples at the Site are located well away from any proposed built structures.

9.0 Conclusions

- 9.1.1 This tree assessment and AIA is prepared in relation to the full planning application and includes trees, T1 – T14, group of trees, G1 and hedgerow H1.
- 9.1.2 Wherever possible trees / hedgerows should be retained. In terms of the current site layout plan, there is conflict with seven trees and one hedgerow.
- 9.1.3 In order to implement the design proposal there is not a requirement to fell any tree, group of trees or hedgerow.
- 9.1.4 In order to implement the design proposals there are no new incursion into the RPAs of any retained tree and therefore the recommendations of BS:5837 concerning new permanent incursions into RPAs of retained trees, (section 7.4.2.3), are met.

10.0 Recommendations

- 10.1 The installation of tree protective fencing must occur prior to commencement of operations. This will ensure conflict with retained trees does not occur.

- 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 will remain on the Site will be dependent upon the quality and maintenance of any protection system that is put in place. A detailed AMS may be required to explain how the necessary tree protection will be implemented.
- 10.5 An indicative draft Tree Retention and Protection Plan ('TRPP', at Appendix 2) is provided; however, this is subject to alteration following a final decision notice and, if deemed necessary by the LPA, a detailed method statement.
- 10.6 It is critical that all protective fencing is installed and erected, and the Construction Exclusion Zone, (CEZ), enforced prior to the commencement of any works on-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 and monitoring works – and 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 Outline Arboricultural Method Statement

11.1 Scope of works

11.1.1 Installation of Tree Protection Fencing –

- I. Tree Protection Fencing is to be installed along the dark blue dashed line, as shown in the TRPP, (see Appendix 2).
- II. Tree Protection Fencing is to be installed before any materials or machinery are brought onto the site, and before any excavation and development occurs. Once installed tree protection fencing is not be removed or altered without prior recommendation by the project arboriculturist and, where necessary, approval from the local planning authority.
- III. Tree Protection Fencing is to be fit for the purpose of excluding demolition and construction activity and appropriate to the degree and proximity of work taking place around the retained tree. Barriers are to be maintained to ensure that they remain rigid and complete – for compliant specification of tree protection fencing, see Appendix 3.
- IV. Signs indicating the purpose of the fencing must be fixed to it and remain in situ for the duration of the proposed development.

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- V. The areas within or beyond the tree protection fencing are designated as a Construction Exclusion Zone, (CEZ), where all demolition and construction activity is excluded, including storage of materials harmful chemicals, spoil or aggregates.
- VI. The existing driveway is to remain in situ for the duration of demolition works to the garage and construction work to the new dwelling occur.

11.2 Phasing of works

11.2.1 Trees works associated with this mitigation project shall occur in the following order:

Table 4: Phasing of works

Timescale	Task	Responsibility
Pre-development	Erection of protective barriers as agreed and approved	To be arranged by developer, with sign off from project arboriculturalist
Pre-development	Carry out supervisory visit or remote inspection, (and report findings and recommendations if necessary / required)	To be arranged by developer, with sign off from project arboriculturalist
During demolition and construction phases of development	Carry out supervisory visits or remote inspections as agreed, (and report findings and recommendations if necessary / required)	To be arranged by developer, with project arboriculturalist
Post development	Phased removal of protective barriers	To be arranged by developer, with sign off from project arboriculturalist
Post development	Inspect retained / replanted trees and carry out remedial tree work, (if necessary)	To be arranged by developer, with sign off from project arboriculturalist and operations undertaken by arboricultural contractor, if required.

11.3 Arboricultural supervision

11.3.1 A pre-commencement meeting, (either in person or remotely, via suitable digital media), is to be held between the contractors and the project arboriculturalist. The local planning authority arboricultural officer is to be given reasonable notice of the pre-commencement meeting so they may also attend. The purpose of the pre-commencement meeting shall be:

- To clarify the tree protection methodology with the site manager.
- To sign off that the tree protection barriers have been installed in the correct locations and to the agreed specification.

- 11.3.2 If significant root growth is disturbed during demolition / construction activities that are not within the scope of this report, the work must cease until the project arboriculturist is consulted. Roots greater than 25mm in diameter or dense / matted fibrous roots are considered significant root growth. It must be remembered that whilst RPAs are part of industry best practice, tree root growth is influenced by a number of factors and may not conform to expected ideals.
- 11.3.3 No machinery, materials or temporary site buildings are to be stored within the RPAs of any retained trees, groups of trees or hedgerows.
- 11.3.4 No corrosive materials or chemicals which dissolve in water are to be stored within the RPAs of any retained trees, groups of trees or hedgerows.
- 11.3.5 If at any time during the construction process, damage is inadvertently caused to a tree, group of trees or hedgerow, the project arboriculturist must be notified to assess the likely implications and to prescribe potential remedial measures. Damage can be in the form of chemical or fuel spillage, mechanical damage to either the above ground parts of the tree or the roots, fire or any other unforeseen circumstance.

12.0 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.

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13.0 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

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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 

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Schedule 2: BS:5837 Tree Survey:

Client Name: Rob Parsons
Site: 38, Midfields Drive, Burgess Hill, West Sussex, RH15 8EN
Tags: n / a
Ref: Full planning application

Consultant: N. Eddison
Survey Date: 23.08.2024

Tree No.	Species	Common name	Height (m)	DBH (mm)	Crown Spread (North)	Crown Spread (East)	Crown Spread (South)	Crown Spread (West)	Crown Height AGL	Root Protection Area Radius (m)	Root Protection Area (m ²)	Age	Bat habitat potential	Condition	Risk	Category	Remedial Recommendations	Notes
T1	<i>Prunus spp.</i>	Cherry	9.5	177	3	3	3	3	1.75	2.12	14.17	Semi-mature	Low	Fair	Low	C2	NWR	Significant amount of concrete immediately adjacent to the root/stem junction; partially suppressed by adjacent Blackthorn, (part of G1); historically has been topped at approx 4m AGL; located in G1
T2	<i>Acer campestre</i> ;	Field Maple	8.5	385	3	3	3	3	4	4.62	67.06	Mature	Medium	Fair	Low	C2	Sever and remove a 300mm section of ivy from around the entire circumference of the tree's basal region	Heavily ivy-clad; historically has been topped at approx 4m; located on G1
T3	<i>Acer campestre</i> ;	Field Maple	8.5	148	3	3	3	3	2.5	1.78	9.91	Semi-mature	Medium	Fair	Low	C2	Sever and remove a 300mm section of ivy from around the entire circumference of the tree's basal region	Heavily ivy-clad; historically has been topped at approx 3m; located in G1
T4	<i>Acer campestre</i> ;	Field Maple	8.5	442	4	6	4	3	3	5.30	88.38	Mature	Medium	Fair	Low	C2	NWR	3rd party tree; historically has been topped at approx 4m AGL
T5	<i>Acer campestre</i> ;	Field Maple	7.5	189	1	3	3	1	2	2.27	16.16	Semi-mature	Low	Fair	Low	C2	Sever and remove a 300mm section of ivy from around the entire circumference of the tree's basal region	Bifurcates at GL; ivy-clad; suppressed by adjacent trees; locatd in G1
T6	<i>Taxus baccata</i>	Yew	6	176	1	2	3	2	1.5	2.11	14.01	Semi-mature	Low	Good	Low	B2	Sever and remove a 300mm section of ivy from around the entire circumference of the tree's basal region	Bifurcates at approx 1m AGL; ivy-clad; partially suppressed by adjacent trees; located in G1
T7	<i>Carpinus betulus</i>	Hornbeam	16	599	4	4	4	4	1.75	7.19	162.32	Mature	Medium	Good	Low	A1	Sever and remove a 300mm section of ivy from around the entire circumference of the tree's basal region	Bifurcates at GL; ivy-clad; located in G1
T8	<i>Quercus robur</i>	Oak	19	535	8	8	8	8	5	6.42	129.49	Mature	Medium	Good	Low	A1	NWR	3rd party tree

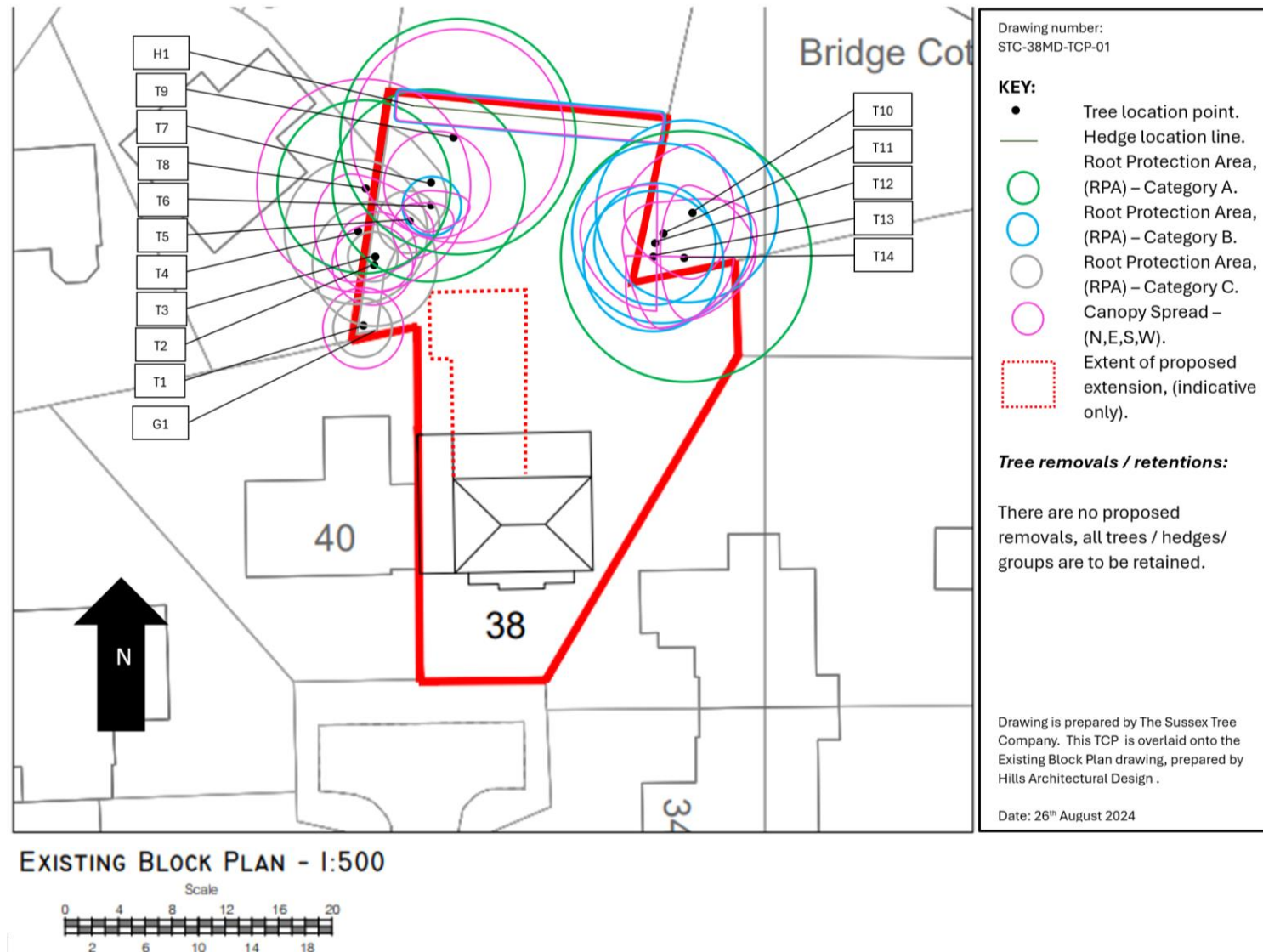
38 Midfields Drive, Burgess Hill, West Sussex, RH15 8EN

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Tree No.	Species	Common name	Height (m)	DBH (mm)	Crown Spread (North)	Crown Spread (East)	Crown Spread (South)	Crown Spread (West)	Crown Height AGL	Root Protection Area Radius (m)	Root Protection Area (m²)	Age	Bat habitat potential	Condition	Risk	Category	Remedial Recommendations	Notes
G1	<i>Prunus spinosa</i> ; <i>Ilex aquifolium</i> ; <i>Acer campestre</i> ; <i>Quercus ilex</i>	Blackthorn; Holly; Field Maple; Holmoak	4	75	0.5	0.5	0.5	0.5	0.5	0.90	2.54	Semi-mature	Low	Good	Low	C2	NWR	Understorey specimens along wooded boundary area
T9	<i>Quercus robur</i>	Oak	16.5	730	8	8	8	6	4	8.76	241.08	Mature	Medium	Good	Low	A1	Widen frame surrounding lower trunk region to remove direct contact with stem	Has treehouse construction surrounding stem at approx 1.5m AGL
H1	<i>X Cupressocyparis leylandii</i>	Leyland Cypress	2.5	94	1	1	1	1	0	1.13	4.00	Semi-mature	Low	Good	Low	B2	NWR	3rd party hedge; section facing property is well maintained
T10	<i>Quercus robur</i>	Oak	18.5	570	5	3	5	5	2	6.84	146.98	Mature	Low	Fair	Low	B2	NWR	3rd party tree; 2 major wounds in lower stem region, 1 from GL to approx 1.5m AGL; has recently been pruned; grows as part of a stand of Oaks
T11	<i>Quercus robur</i>	Oak	18.5	560	2	3	7	7	5	6.72	141.87	Mature	Low	Fair	Low	B2	NWR	3rd party tree; large vertical wound from GL to approx 2m AGL; has recently been pruned; growing as part of a stand of Oaks
T12	<i>Quercus robur</i>	Oak	11.5	379	4	0	5	6	3	4.55	64.98	Semi-mature	Low	Fair	Low	B2	NWR	3rd party tree; large vertical wound from GL to approx 1.5m AGL; has recently been pruned; grows as part of a stand of Oaks
T13	<i>Quercus robur</i>	Oak	15.5	433	0	2	5	4	6	5.20	84.82	Semi-mature	Medium	Fair	Low	B2	NWR	3rd party tree; has sparse crown, partially due to recent pruning; unbalanced crown; grows as part of a stand of Oaks
T14	<i>Quercus robur</i>	Oak	20	782	5	5	5	2	1.75	9.38	276.65	Mature	High	Good	Low	A1	NWR	3rd party tree; bifurcates at GL; co-dominant stems; has recently been pruned; grows as part of a stand of Oaks

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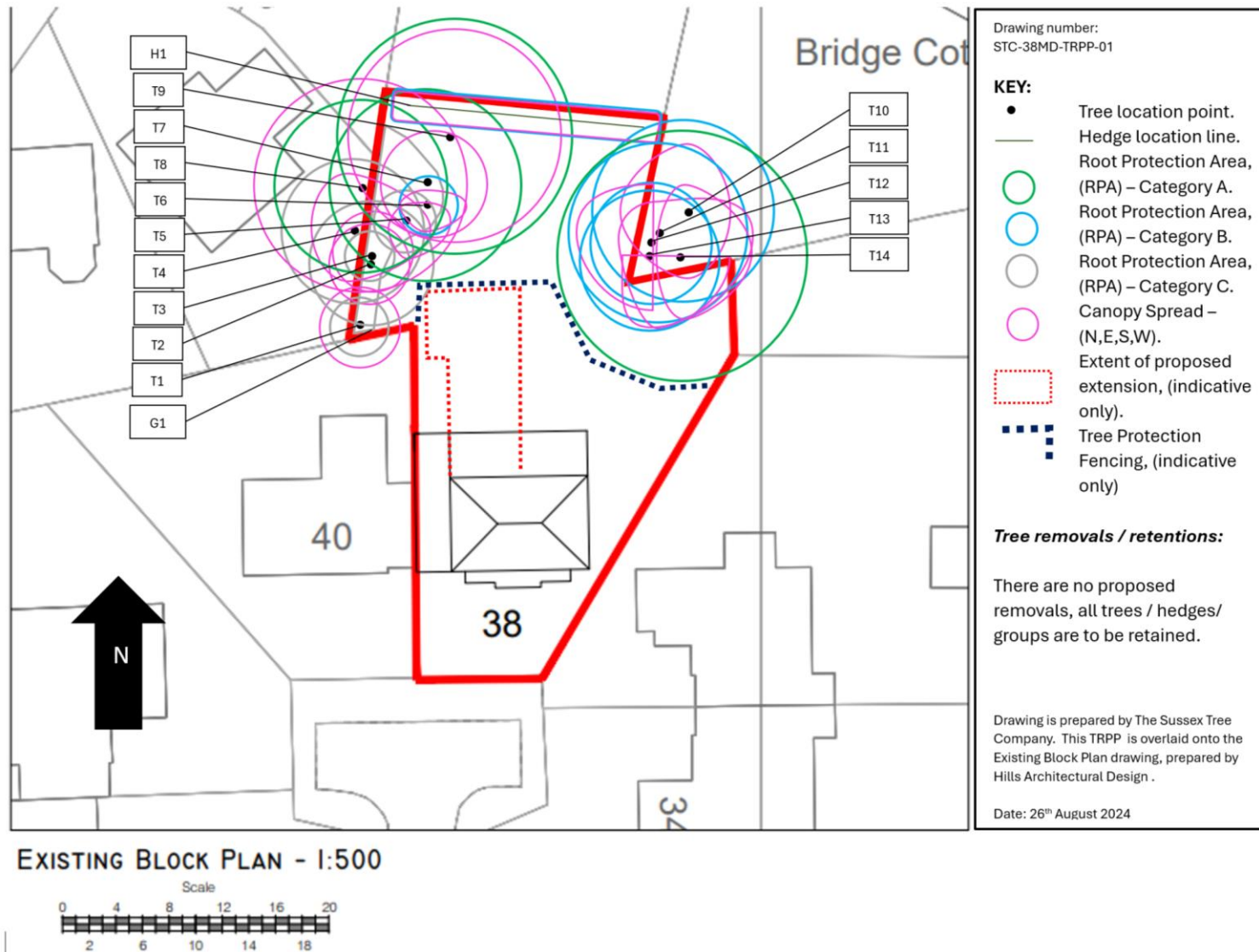
Appendix 2: Plans – Tree Constraints Plan:



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Appendix 2: Plans – Tree Protection Plan:



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Appendix 2: Plans – Location and Block Plans:



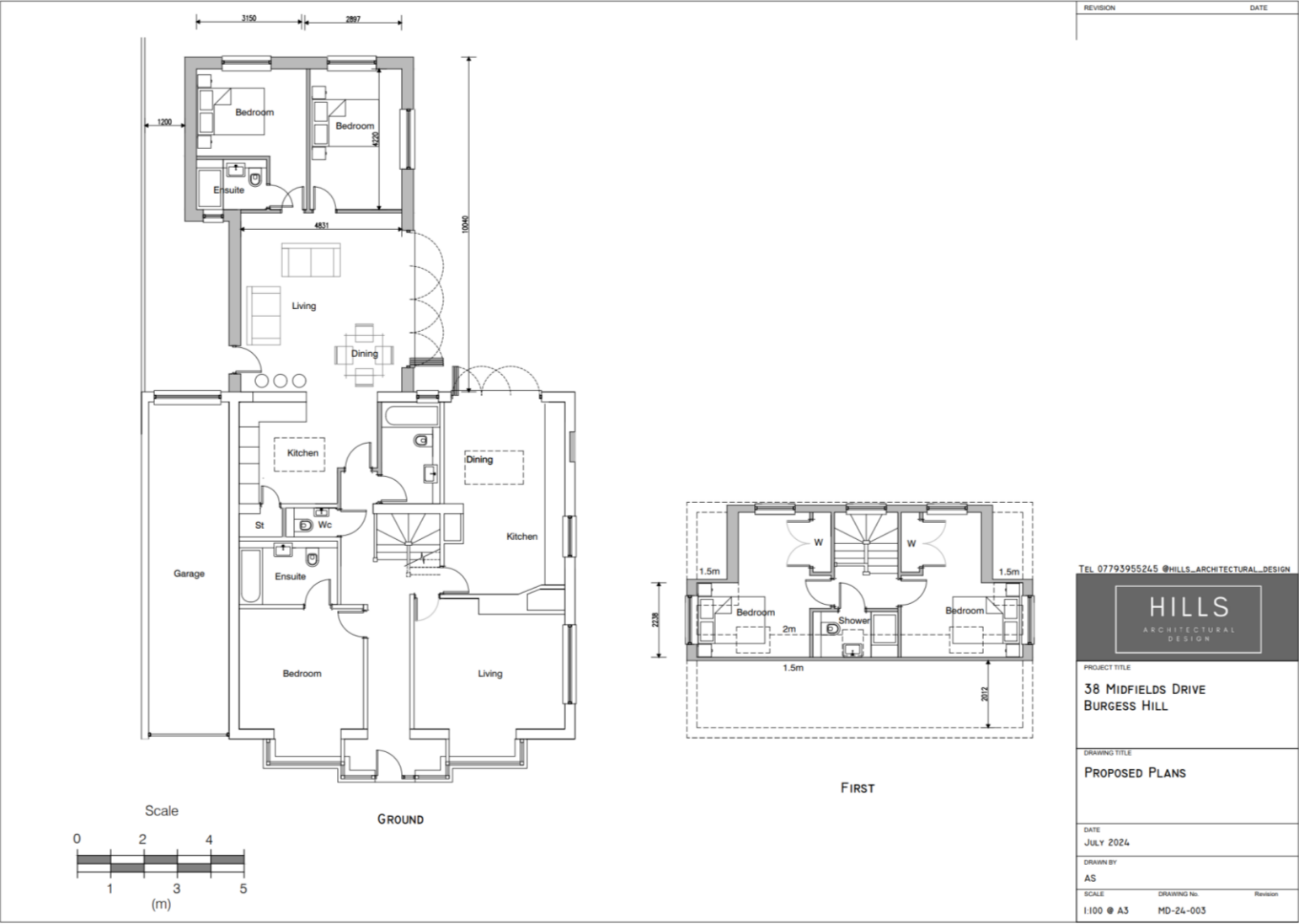
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Appendix 2: Plans – Existing Plans and Elevations:



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Appendix 2: Plans – Proposed Plans:

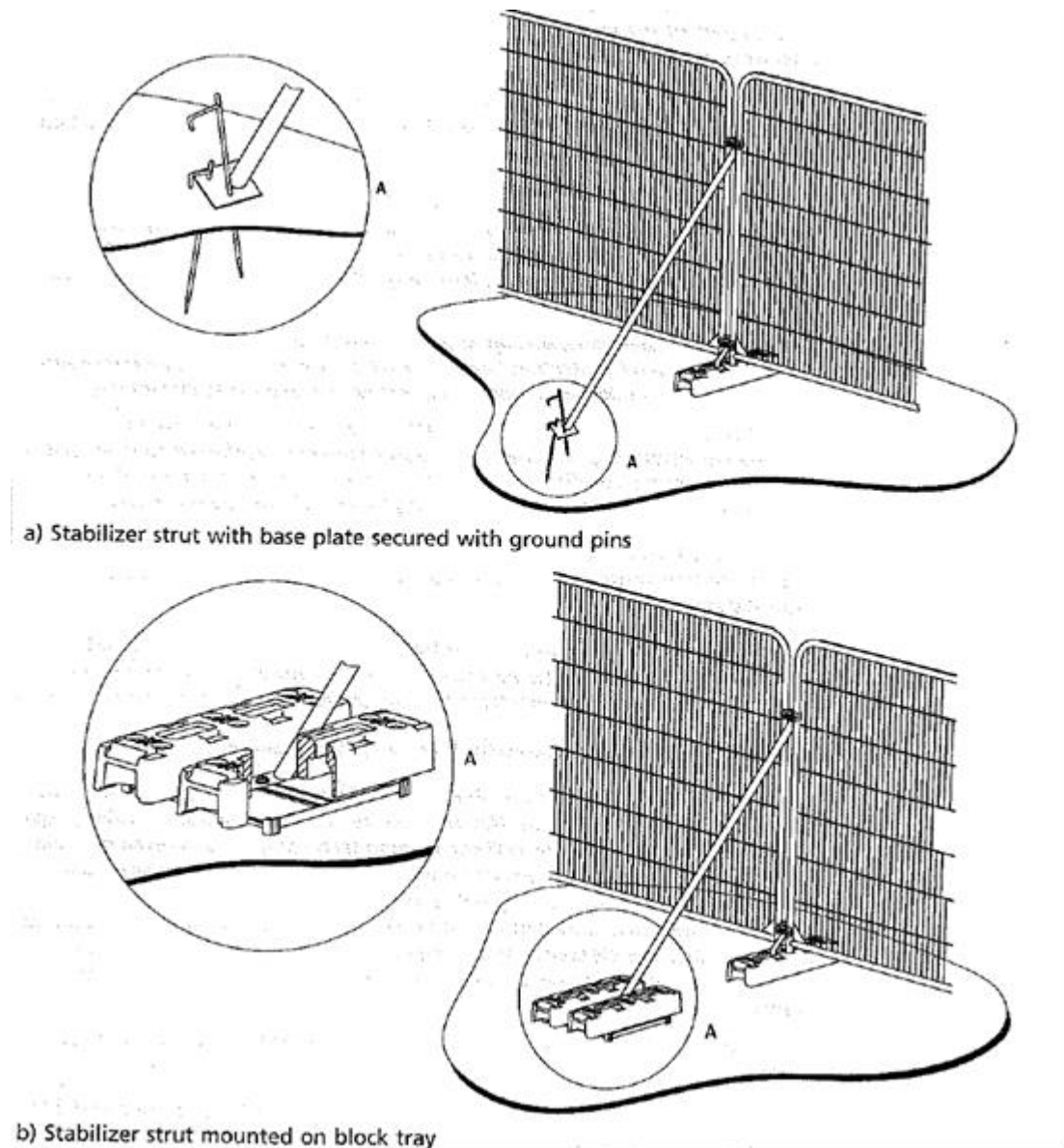


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Appendix 3 Tree Protection:

Tree Protection Fencing – specifications:

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



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Tree Protection Fencing – signage:

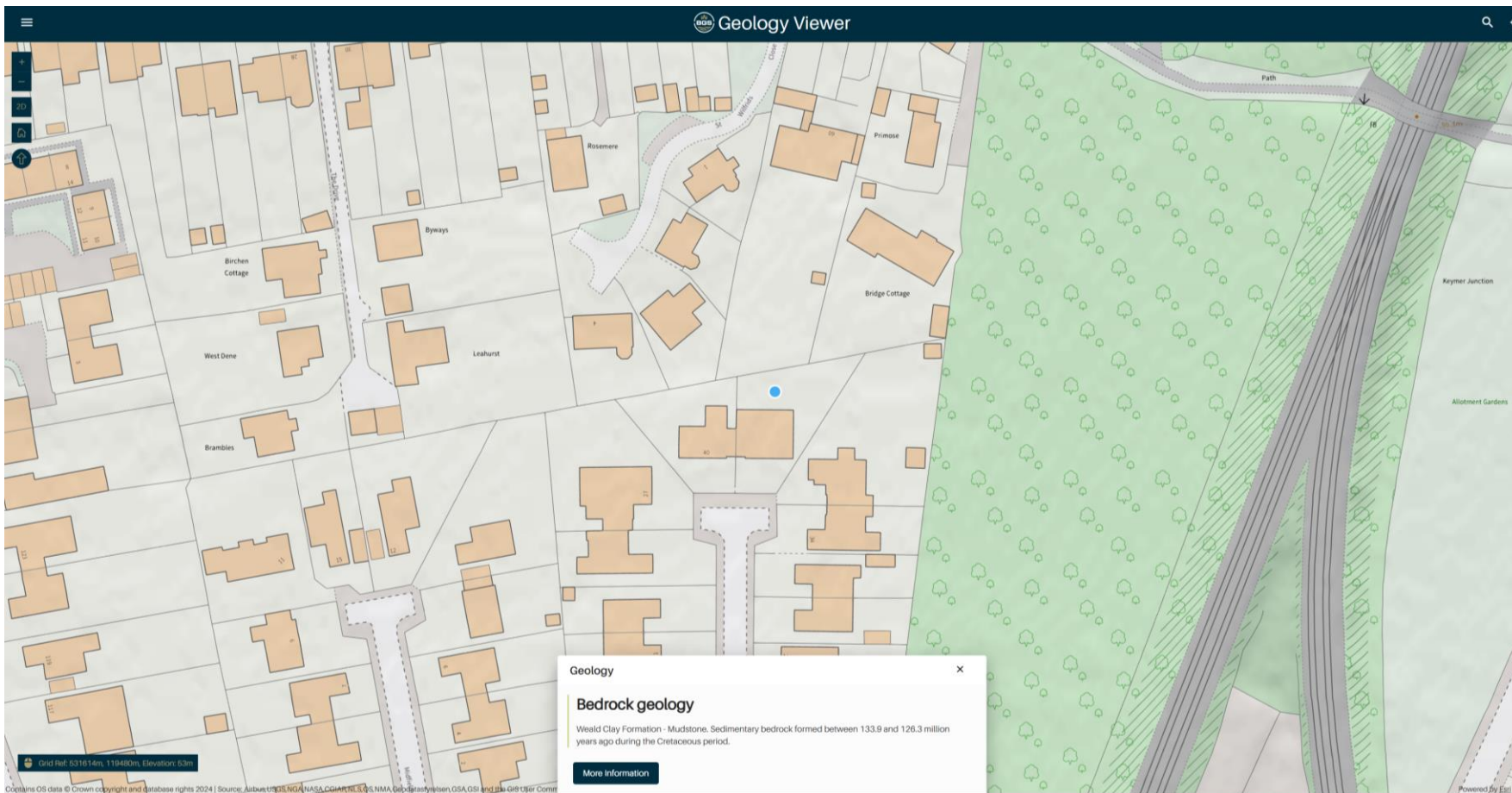


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Appendix 4: Screenshots relevant to the proposed development: BGS Underlying Geology:



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Invalidation letter:



Oaklands
Oaklands Road
Haywards Heath
West Sussex
RH16 1SS

Switchboard 01444 458166
DX 300320 Haywards Heath 1
www.midsussex.gov.uk

Mr Ross Parsons
c/o Mr Andrew Swaisland
Hills Architectural Design
45 Sycamore Drive
Burgess Hill
RH15 0GG

CONTACT: Wendy Little
PHONE: 01444 477115
E-MAIL: planningvalidation@midsussex.gov.uk
DATE: 31st July 2024

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Town and Country Planning Act 1990 (as amended)
Town and Country Planning (Development Management Procedure) (England)
Order 2015

Dear Mr Andrew Swaisland

REFERENCE: DM/24/1853

DESCRIPTION: SINGLE STOREY REAR EXTENSION TO PROVIDE SELF CONTAINED ANNEXE. ROOF EXTENSION AND LOFT CONVERSION WITH TRIPLE DORMER TO REAR ELEVATION, 3X ROOF LIGHTS TO FRONT ELEVATION AND HIGH LEVEL WINDOW TO EACH SIDE ELEVATION.

LOCATION: 38 MIDFIELDS DRIVE BURGESS HILL WEST SUSSEX RH15 8EN

The application was received on 30th July 2024.

Having assessed the documents provided with this application, it has unfortunately been deemed invalid. To enable us to register your application, please address the following matters:

1. Please provide an Arboricultural Tree Report see link to our local list for guidance (page19) <https://www.midsussex.gov.uk/media/8497/msdc-local-list-september-2022.pdf>
2. Please provide an existing and proposed roof plan for the development at a scale of 1:50 or 1:100.
3. Please confirm agreement to the following amended description -'Single storey rear extension to provide self contained annexe. Roof extension and loft conversion with triple dormer to rear elevation, 3x roof lights to front elevation and high level window to each side elevation'.
4. Please can you clarify why the red line on your location and block plan includes part of land shown as number 60 St Wilfrids Road on our mapping system.

Planning Services Division

Ann Biggs
Assistant Director Planning and Sustainable Economy

38 Midfields Drive, Burgess Hill, West Sussex, RH15 8EN

Appendix 5: Report Limitations, (1.5.2 – 1.5.19)

- 1.5.2 The observations, assessments and analyses made are valid from the time of inspection. These, and any recommendations made, are subjected to the timescales detailed elsewhere in this report, applicable from time of surveying.
- 1.5.3 This is an arboricultural report and as such no reliance should be given to comments relating to buildings, engineering or soil.
- 1.5.4 This is not an arboricultural health and 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 and assessments of condition, (in this report), are valid for 12 months from the date of site-survey. Any appraisals, and conclusions based thereon, will be invalidated and 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 and the like are outside the scope of this report. Topographical surveying for the development project has not been undertaken, as far as STC is aware. Existing and proposed new extension plans were provided to STC by Hills Architectural Design.
- 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 and are beyond the scope of this report.
- 1.5.11 Where further inspections of particular trees, (or features), 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 and 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 and as such are subject to change through the natural

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occurrence of growth, maturation and senescence – as well as in response to naturally occurring events outside of human control and 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; 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 as a result 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 response was that there are no statutory protections to trees at the Site, in terms of TPOs or Conservation Area status.
- 1.5.15 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 and/or the author of this report to enable the appropriate remedial action.
- 1.5.16 The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act 2000 provides statutory protection to birds' nests whilst under construction or in use, and 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 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 and 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.
- 1.5.17 This is an arboricultural report and therefore does not rely on ecological or archaeological data. If either is commented upon within the report further professional advice should be sought
- 1.5.18 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 and 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.
- 1.5.19 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 and 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, and on the supplied drawings.
- Assessment is based around the useful life expectancy of the tree(s) and their condition and 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, and, if possible, using Pythagoras' theory of trigonometry.
- Where, due to local constraints such as impenetrable vegetation or tree location in 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.

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Ash die-back disease

- Following reports of ash dieback disease, first reported in 2012 and 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), and 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>

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 and 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 and 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 and 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
 - 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 and physiological health, as well as any significant pre-existing external environmental impacts. The categorisation used is:
 - n/a
 - Dead
 - Poor
 - Fair
 - Good

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- **Risk Rating:** an assessment of the observed hazards presented by the tree/group of trees and associated features, and 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 and 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 and 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).
- **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 and 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

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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 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

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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.

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.

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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.

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 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
City and Guilds: Signing and Guarding, (Chapter 8)

ii. Practical/relevant experience

9 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 20 years' experience as a practicing Climbing Arborist; in the domestic, commercial and civil arenas.

Over the preceding 9 years the author has undertaken and delivered

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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.

iii.

Continuing professional development

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

- 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.

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