



Gladman

**Land at Henthorn Road, Clitheroe, Lancashire**

**Arboricultural Assessment**

July 2018

**FPCR Environment and Design Ltd**

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## 1.0 INTRODUCTION

- 1.1 This report has been prepared by FPCR Environment and Design Limited on behalf of Gladman to present the findings of an Arboricultural Assessment and survey of trees located at land at Henthorn Road, Clitheroe, Lancashire, BB7 2QF (hereafter referred to as the site), OS Grid Ref SD 730 407 (access gate off Henthorn Road). The survey was carried out on Thursday 17th May 2018.
- 1.2 The tree survey and assessment of existing trees has been carried out in accordance with guidance contained within British Standard 5837:2012 '*Trees in Relation to Design, Demolition and Construction - Recommendations*' (hereafter referred to as BS5837). The guidelines set out a structured assessment methodology to assist in determining which trees would be deemed either as being suitable or unsuitable for retention.
- 1.3 The guidance also provides recommendations for considering the relationship between existing trees and how those trees may integrate into designs for development; demolition operations and future construction processes so that a harmonious and sustainable relationship between any retained trees and built structures can be achieved.
- 1.4 The purpose of the report is therefore to firstly present the results of an assessment of the existing trees' arboricultural value, based on their current condition and quality and to secondly provide an assessment of impact arising from the proposed development of the site.
- 1.5 This report has been produced to accompany a planning application for a residential development and has included an assessment of any impact to the tree cover. The survey has therefore focused on any trees present within or bordering the site that may potentially be affected by the future proposals or will pose a constraint to any proposed development.
- 1.6 The site is located at the urban fringe to the south of Clitheroe bounding Henthorn Road on its south eastern boundary. Part of the south western boundary adjoins the curtilage of the neighbouring Siddows Hall. The survey area is currently a permanent pasture agricultural field bounded by hedgerows with occasional trees. In the north eastern corner of the site, a drain-cum-brook flows in a southerly direction, being culverted beneath Henthorn Road.
- 1.7 No direct consultation with Ribble Valley Borough Council, the local planning authority, has taken place. However, it is understood having used the online search facility on their website that the survey area is not located within the Clitheroe Conservation Area (including later extension). No online details are available regarding Tree Preservation Orders within the borough. Before any tree works are undertaken confirmation of the online information should be sought from the local authority.

## 2.0 METHODOLOGY

- 2.1 The survey of trees has been carried out in accordance with the criteria set out in Chapter 4 of BS5837. The survey has been undertaken by a suitably qualified and experienced arboriculturalist and has recorded information relating to all those trees within the site and those adjacent to the site which may be of influence to any proposals. Trees were assessed for their arboricultural quality and benefits within the context of the proposed development in a transparent, understandable and systematic way.
- 2.2 Trees have been assessed as groups or woodlands where it has been determined appropriate. The term group has been applied where trees form cohesive arboricultural features either aerodynamically, visually or culturally including biodiversity or habitat potential for example parkland or wood pasture. An assessment of individual trees within groups or woodlands has been made where a clear need to differentiate between them, for example, in order to highlight significant variation between attributes including physiological or structural condition or where a potential conflict may arise.
- 2.3 Trees have been divided into one of four categories based on Table 1 of BS5837, '*Cascade chart for tree quality assessment*'. For a tree to qualify under any given category it should fall within the scope of that category's definition (see below). Category U trees are those which would be lost in the short term for reasons connected with their physiology or structural condition. They are, for this reason not considered in the planning process on arboricultural grounds. Categories A, B and C are applied to trees that should be of material considerations in the development process. Each category also having one of three further sub-categories (i, ii, iii) which are intended to reflect arboricultural, landscape and cultural or conservation values accordingly.
- 2.4 **Category (U) – (Red):** Trees which are unsuitable for retention and are 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 within this category are:
- Trees that have a serious irremediable structural defect such that their early loss is expected due to collapse and includes trees that will become unviable after removal of other category U trees.
  - Trees that are dead or are showing signs of significant, immediate or irreversible overall decline.
  - Trees that are infected with pathogens of significance to the health and/ or safety of other nearby trees or are very low-quality trees suppressing adjacent trees of better quality.
  - Certain category U trees can have existing or potential conservation value which may make it desirable to preserve.
- 2.5 **Category (A) – (Green):** Trees that are considered for retention and are of high quality with an estimated remaining life expectancy of at least 40 years with potential to make a lasting contribution. Such trees may comprise:
- Sub category (i) trees that are particularly good examples of their species, especially if rare or unusual, or are essential components of groups such as formal or semi-formal arboricultural features for example the dominant and/or principal trees within an avenue.

- Sub category (ii) trees, groups or woodlands of particular visual importance as arboricultural and / or landscape features.
- Sub category (iii) trees, groups or woodlands of significant conservation, historical, commemorative or other value for example veteran or wood pasture.

2.6 **Category (B) – (Blue):** Trees that are considered for retention and are of moderate quality with an estimated remaining life expectancy of at least 20 years with potential to make a significant contribution. Such trees may comprise:

- Sub category (i) trees that might be included in category A but are downgraded because of impaired condition for example the presence of significant though remediable defects, including unsympathetic past management and storm damage.
- Sub category (ii) 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.
- Sub category (iii) trees with material conservation or other cultural value.

2.7 **Category (C) – (Grey):** Trees that are considered for retention and are of low quality with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150mm. Such trees may comprise:

- Sub category (i) unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.
- Sub category (ii) trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value or trees offering low or only temporary / transient screening benefits.
- Sub category (iii) trees with no material conservation or other cultural value.

### **Tree Schedule**

2.8 Appendix A presents details of any individual trees, groups and hedgerows found during the assessment including heights, diameters at breast height, crown spread (given as a radial measurement from the stem), age class, comments as to the overall condition at the time of inspection, BS5837 category of quality and suitability for retention and the root protection area.

2.9 General observations particularly of structural and physiological condition for example the presence of any decay and physical defect and preliminary management recommendations have also been recorded where appropriate.

### **Hedgerows**

2.10 For the purposes of this assessment, a hedgerow is described as any boundary line of trees or shrubs less than 5m wide at the base and are managed under a regular pruning regime. Hedgerows and substantial internal or boundary hedges (including evergreen screens) have been recorded including lateral spread, height and stem diameter(s). Where trees are present within a hedgerow that are significantly different in character from the remainder, these have been identified and recorded separately.

- 2.11 A tree survey in accordance with BS5837 does not assess hedgerows against the Hedgerow Regulations 1997 or specifically from an ecological perspective, and is outside the scope of this assessment.

### **Other Considerations**

- 2.12 It may be necessary during detailed design to undertake further assessment and accurate positioning of woody species within hedgerows and tree groups to assist structural calculations for foundation design of structures in accordance with current building regulations.
- 2.13 The exact position of individual trees or species included as part of a tree group or hedgerow should be checked and verified on site prior to any decisions for foundation design, tree operations or construction activity being undertaken. Further survey work would be required for calculating foundation depths in accordance with NHBC Chapter 4.2 Building near Trees.

### **Conditions of Tree Survey**

- 2.14 The survey was completed from ground level only and from within the boundary of the site. Aerial tree inspections or the internal condition of the stem/s or branches were not undertaken at this stage as this level of survey is beyond the scope of the initial assessment. Evaluation of tree condition given within this assessment applies to the date of survey and cannot be assumed to remain unchanged. It may be necessary to review these within 12 months, in accordance with sound arboricultural practice.

### **Site Plans**

- 2.15 The individual positions of trees and groups have been shown on the Tree Survey Plan. The positions of trees are based on a topographical / land survey, as far as possible, supplied by the client. Where topographical information has not identified the position of trees and hedgerows, their relation to any existing surrounding features has been plotted using a global positioning system and aerial photography to provide approximate locations. The crown spread, root protection area and shade pattern (where appropriate) are also indicated on this plan.
- 2.16 As part of this assessment, a Tree Retention Plan has been prepared to show the outline scheme in relation to the existing tree cover allowing an assessment of any potential conflicts. The plan also identifies any trees or sections of hedge which would be required to be removed or retained as part of the proposed development.
- 2.17 The Detailed Access Arrangement Plan shows the location of the detailed access position in relation to the surrounding tree cover allowing the identification of any potential conflicts through implementation of the site access.

### **Tree Constraints and Root Protection Areas**

- 2.18 Below ground constraints to future development are represented by the area surrounding the tree containing sufficient rooting volume for the specimen to have the best chance of survival in the long term which is identified as the root protection area (RPA). The RPA has been calculated in accordance with section 4.6 of BS5837 and requires suitable protection in order for the tree to be successfully incorporated into any future scheme.

- 2.19 Where groups of trees have been assessed, the Root Protection Area has been shown based on the maximum sized tree in any one group and so may exceed the Root Protection Area required for some of the individual specimens within the group. Further detailed inspection of the individual trees forming a group may be required where development impacts upon the group.
- 2.20 Above ground constraints such as the current crown spread of the trees and an illustration of the shade pattern (where appropriate) have been considered and identified within the Tree Survey Plan and Tree Retention Plan indicates their potential area of shading influence.

### 3.0 RESULTS

- 3.1 A total of eleven individual trees, three groups of trees and four hedgerows were surveyed as part of the Arboricultural Assessment. Trees were surveyed as individual trees and groups of trees where examples are clearly present as per the description. Refer to the Tree Survey Plan and Appendix A – Tree Schedule for full details of the trees included in this assessment.
- 3.2 The table below summarises the trees assessed. Several of the trees have been discussed in more detail following the table, owing to their physical condition or arboricultural significance. The tree cover is illustrated further along and photographs have been included below.

#### Results Summary

**Table 1: Summary of Trees and Hedgerows by Retention Category**

|                                       | Individual Trees | Total | Groups of Trees & Hedgerows | Total |
|---------------------------------------|------------------|-------|-----------------------------|-------|
| Category U - Unsuitable               |                  | 0     |                             | 0     |
| Category A (High Quality / Value)     | T1, T4, T8, T11  | 4     |                             | 0     |
| Category B (Moderate Quality / Value) | T2, T3, T7, T9   | 4     | G1, G2, H1, H2, H3, H4      | 6     |
| Category C (Low Quality / Value)      | T5, T6, T10      | 3     | G3                          | 1     |

- 3.3 The site boundaries are defined by four mature hedgerows of a moderate quality (category B) from which occasional tree groups of a fair condition were observed. The tree cover on site lies on the Southern and Western boundaries, consisting of mostly moderate to low quality early mature trees. A high percentage of the tree cover lies within an offsite group growing within the gardens of Siddows Hall.

#### Category A - High Quality Trees

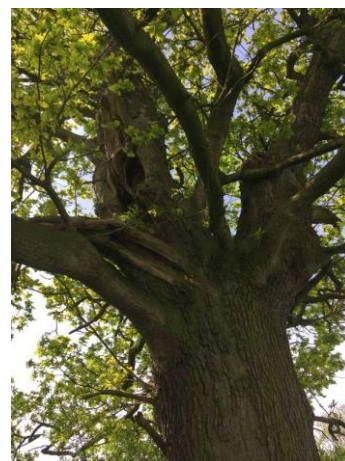
- 3.4 Tree T1 was a Category A oak growing from amongst hedgerow H2 and which was considered to be an early field boundary. This tree is of the highest value as a sole specimen and notwithstanding the neighbouring electricity service wayleave has room for retention into full maturity.

**Photograph 1: Tree T1 growing from hedge H2**



- 3.5 T4 stood at 14m and was free from any structural defects displaying particularly good form. In comparison T8 stands at 26m and by virtue of its mature proportions, was considered prominent in the landscape. T8 possessed a large stem diameter for its species, exceeding 1000mm at 1.5m, a feature which is attributable to an over-maturing age which, should its retention be safeguarded, may transition into a veteran specimen. However, the tree currently lacks enough attributable features, something which may develop with time and targeted veteran management.
- 3.6 T11 is a category A mature oak standing at 17m and was located on the northernmost boundary of the site. There was evidence of previous livestock poaching around the base of the main stem which also possessed a substantial basal flair. The opening between the root buttress had revealed the lower stem of the tree to be substantially hollow. Overall, the tree exhibited good vigour with minimal deadwood overhanging the site, however a single hanging dead branch was noted in the lowest crown on northern side and as such remedial management, in the interests of safety should the site be developed, would be recommended.

**Photograph 2: Tree T11 and close up view of cavity on main stem**



**South West Tree Cover**

- 3.7 T2 to T8 inclusive along with an outgrown hedge surveyed as G1, were regarded as being off-site within the garden, curtilage to the neighbouring Siddows Hall. The early mature copper beech T4 and the over mature ash T8 aforementioned are especially notable within this collection.
- 3.8 Although some of the component trees were in poor condition (either in terms of physiological or suspected structural configuration), collectively they form a prominent landscape feature that provides excellent screening from the existing hall grounds and could play a valuable role in protecting the historic landscape character of the hall whilst helping to better integrate the proposed development into the local landscape.

**Photograph 3: Trees T2 to T8 inclusive****Hedgerows and Groups**

- 3.9 Hedge H1 lies along the Eastern boundary (adjacent to Henthorn Road) and has been subjected to regular management in the past. It displayed a boxy profile with consistent structure, only interrupted by an established gateway acting as the primary entrance to the site.
- 3.10 Hedge H3 growing along the western boundary had been fenced at some distance from the hedge, limiting access for maintenance and as a result is becoming outgrown. Located along this hedge line (H3) were trees associated with seasonal ponds, such as a single ash tree (T10). This tree exhibited unusual form with multiple areas of dieback and decay. This category C tree also hosted King Alfred's cake fungus (*Daldinia concentrica*) a saprophytic deadwood decomposer.

**Photograph 4: Ash tree T10**



- 3.11 Hedge H4 provided a significant boundary to an existing development on the adjoining side, its dense structure caused it to have high screening potential for the proposed new development. The fencing running alongside the hedge has resulted in dense blackthorn suckering which in time will swamp the original hedgerow, meaning active management in the interest of a proposed site development would be recommended.
- 3.12 Tree group G3 represents fragmented individual hawthorn trees growing upon the embankment adjacent to the brook in the north eastern corner of the survey area. This is a low quality (category C) group of trees in fair condition, offering limited landscape value and restricted future potential in any prospective development.

## **4.0 ARBORICULTURAL IMPACT ASSESSMENT**

- 4.1 The following paragraphs present a summary of the tree survey and discussion of particular trees and groups recorded in the context of any proposed development in the form of an Arboricultural Impact Assessment in accordance with section 5.4 of BS5837. Any final tree retentions will need to be reconciled with the advice contained within this report.
- 4.2 The AIA has been based upon the Development Framework Plan which shows the proposals for an outline residential development. The Development Framework Plan identifies the extent of the proposed development parcels, the access point off Henthorn Road and the indicative location and extent of the sustainable drainage pond.
- 4.3 An overlay of the Development Framework Plan has been incorporated in the Tree Retention Plan to assist in identifying the relationship and any potential conflicts between the proposals and the existing trees and hedgerows.
- 4.4 The existing field access point off Henthorn Road will be utilised for the main site access point (including during the construction phase), however the existing gap within the hedgerow would need to be widened slightly to facilitate a standard width road specification and pedestrian footpath along both sides. This would require the removal of two small sections of the hedgerow H1, approximately 13.1m in total.
- 4.5 A new circular recreational footpath will be provided around the edge of the developable area and shall look to connect to existing footpaths to the north and west, utilising existing gaps in the boundary hedgerows. At present these potential footpath links are subject to land owner agreements and as such the small sections of hedgerow to be lost or widened are indicative. Regardless of this, the cutting back or creation of gaps in the hedgerows should not be seen as a constraint.
- 4.6 With the exception of the minor losses required along the southern hedgerow to provide vehicular and pedestrian links to the development, all of the trees (both individual and groups) are shown to be retained, along with almost the entirety of the hedgerows. Furthermore, proposed landscape buffers have been illustrated around the extents of the development area to provide adequate stand-off from any built element, sufficient growth space for retained trees, where required, and reasonable access to undertake future maintenance of hedgerows.
- 4.7 The land is gently undulating, generally rising to the North West but with localised slopes down to the brook in the eastern corner. No ground level changes should be proposed within the root protection areas of retained trees and hedgerows and further consideration should be given to this matter in a reserved matters application. Including avoiding any potentially negative impact upon trees and hedgerows as a result of changes in the site's hydrology.
- 4.8 The indicative shading patterns shown on the Tree Retention Plan, illustrate that only those trees along the southern boundary with Siddows Hall (T5 - T8) will cast shade on the illustrative developable area. Although the potential shading influence is minimal, it would be expedient to propose longer rear gardens along this boundary or position dwelling to front onto this tree cover and avoid principal windows on the south and western elevations of dwellings in this area.

### New Tree Planting

- 4.9 New tree planting will be provided as part of the development. The purpose and function of this new tree planting should be understood from the start of any design stages so that key objectives from a landscape perspective can also be achieved.
- 4.10 A future landscaping scheme should consider the use of both native tree species (for their low maintenance requirements and nature conservation value) and ornamental species (for their contribution to urban design and amenity value). Species choices should be selected on the basis of their suitability for the final site use.
- Furthermore, during the design process consultation should be made with the Local Planning Authority to obtain information on their tree strategy and incorporate the planting proposals with any local policies and initiatives and/or Biodiversity Action Plans (BAP).
- 4.11 Careful consideration would need to be given to the following: ultimate height and canopy spread, form, habit, density of crown, potential shading effect, colour, water demand, soil type and maintenance requirements in relation to both the built form of the new development and existing properties. Through careful species selection, the landscape scheme shall reduce the risk of trees being removed in the future on the grounds of nuisance.
- 4.12 Tree planting should also be avoided where they may obstruct overhead power lines or cables. Any underground apparatus should be ducted or otherwise protected at the time of construction to enable trees to be planted without resulting in future conflicts.

### Tree Management

- 4.13 The layout of the development is currently reserved for subsequent approval. In the course of a reserved matters application pursuant to layout, a review of the relationship between the layout and the retained trees should be undertaken by a qualified arboriculturalist to assess the existing tree cover and prepare a schedule of tree works.
- 4.14 All retained trees should be subjected to sound arboricultural management as recommended within section 8.8.3 of BS5837 *Post Development Management of Existing Trees*, where there is a potential for public access in order to satisfy the landowner's duty of care. Additionally, inspections annually and following major storms should be carried out by an experienced arboriculturalist or arborist to identify any potential public safety risks and to agree remedial works as required.
- 4.15 All tree works undertaken should comply with British Standard 3998:2010 and should therefore be carried out by skilled tree surgeons. It would be recommended that quotations for such work be obtained from Arboricultural Association Approved Contractors as this is the recognised authority for certification of tree work contractors.
- 4.16 All vegetation and, particularly, woody vegetation proposed for clearance should be removed outside of the bird-breeding season (March - September inclusive) as all birds are protected under the Wildlife and Countryside Act, 1981 (as amended) whilst on the nest. Where this is not possible, vegetation should be checked for the presence of nesting birds prior to removal by an experienced ecologist.

## 5.0 TREE PROTECTION MEASURES

- 5.1 Retained trees will be adequately protected during works ensuring that the calculated root protection area for all retained trees can be appropriately protected through the erection of the requisite tree protection barriers. Measures to protect trees should follow the guidance in BS5837 and will be applied where necessary for the purpose of protecting trees within the site whilst allowing sufficient access for the implementation of the proposed layout. These have been broadly summarised below.

### General Information and Recommendations

- 5.2 All trees retained on site will be protected by suitable barriers or ground protection measures around the calculated RPA, crown spread of the tree or other defined constraints of this assessment as detailed by section 6 and 7 of BS5837.
- 5.3 Barriers will be erected prior to commencement of any construction work and before demolition including erection of any temporary structures. Once installed, the area protected by fencing or other barriers will be regarded as a construction exclusion zone. Fencing and barriers will not be removed or altered without prior consultation with the Project Arboriculturalist.
- 5.4 Any trees that are not to be retained as part of the proposals should be felled prior to the erection of protective barriers. Particular attention needs to be given by site contractors to minimise damage or disturbance to retained specimens.
- 5.5 Where it has been agreed, construction access may take place within the root protection area if suitable ground protection measures are in place. This may comprise single scaffold boards over a compressible layer laid onto a geo-textile membrane for pedestrian movements. Vehicular movements over the root protection area will require the calculation of expected loading and the use of proprietary protection systems.
- 5.6 Confirmation that tree protective fencing or other barriers have been set out correctly should be gained prior to the commencement of site activity.

### Tree Protection Barriers

- 5.7 Tree protection fencing should be fit for the purpose of excluding any type of construction activity and suitable for the degree and proximity of works to retained trees. Barriers must be maintained to ensure that they remain rigid and complete for the duration of construction activities on site.
- 5.8 In most situations, fencing should comprise typical construction fencing panels attached to scaffold poles driven vertically into the ground. For particular areas where construction activity is anticipated to be of a more intense nature, supporting struts, acting as a brace should be added and fixed into position through the application of metal pins driven into the ground to offer additional resistance against impacts.
- 5.9 Where site circumstances and the risk to retained trees do not necessitate the default level of protection an alternative will be specified appropriate to the level / nature of anticipated construction activity. The recommended methods of fencing specifications for this site have been illustrated in Appendix B.

- 5.10 It may be appropriate on some sites to use temporary site offices, hoardings and lower level barrier protection as components of the tree protection barriers. Details of the specific protection barriers for the site can be provided should the application be approved, as part of a site specific Arboricultural Method Statement for a Reserved Matters application and in accordance with the guidance contained within BS5837.

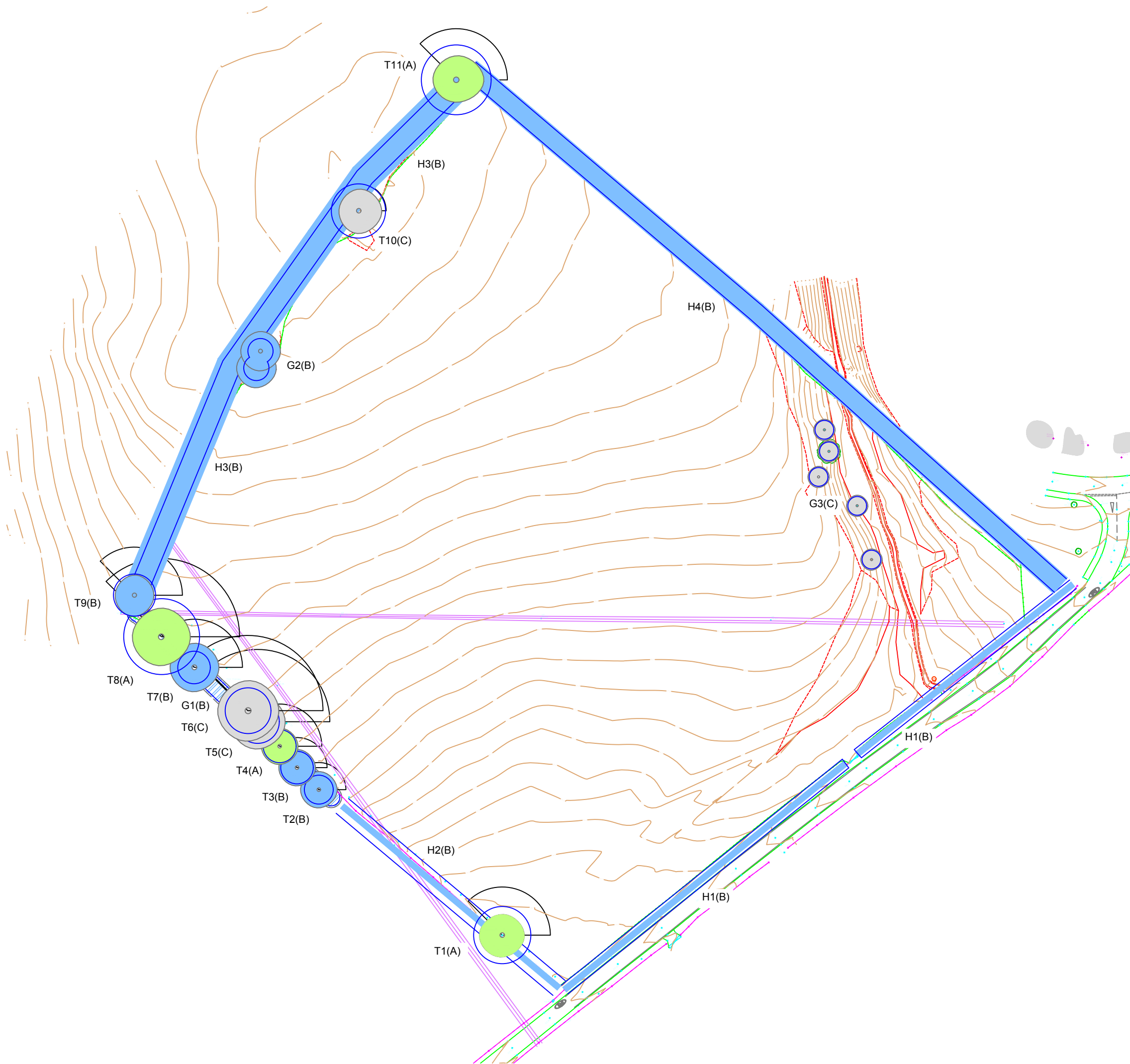
#### **Protection outside the exclusion zone**

- 5.11 Once the areas around trees have been protected by the barriers, any works on the remaining site area may be commenced providing activities do not impinge on protected areas.
- 5.12 All weather notices should be attached to the protective fencing to indicate that construction activities are not permitted within the fenced area. The area within the protective barriers will then remain a construction exclusion zone throughout the duration of the construction phase of the proposed development. Protection fencing signs can be provided upon request.
- 5.13 Wide or tall loads etc should not come into contact with retained trees. Banksman should supervise transit of vehicles where they are in close proximity to retained trees.
- 5.14 Oil, bitumen, cement or other material that is potentially injurious to trees should not be stacked or discharged within 10m of a tree stem. No concrete should be mixed within 10m of a tree. Allowance should be made for the slope of ground to prevent materials running towards the tree.
- 5.15 No fires will be lit where flames are anticipated to extend to within 5m of tree foliage, branches or trunk, taking into consideration wind direction and size of fire.
- 5.16 Notice boards, telephone cables or other services should not be attached to any part of a retained tree.
- 5.17 Any trees which need to be felled adjacent to or are present within a continuous canopy of retained trees, must be removed with due care (it may be necessary to remove such trees in sections).

## **6.0 CONCLUSION**

- 6.1 The site comprises an agricultural pasture field bounded by well-developed hedges which contain occasional deciduous trees. Where the site adjoins the grounds of Siddows Hall in the western corner, mature trees were recorded along the boundary, which collectively form a significant amenity providing landscape value from an arboricultural perspective.
- 6.2 The current development proposals are outline only, with the only reserved matter being the point of access. At this stage only two small sections of hedgerow would be removed to provide the main vehicular access from Henthorn Road.
- 6.3 All the trees and the hedgerows would be retained, with only small section of H1 to be removed to facilitate the access. All of these retained trees have been provided sufficient stand-offs from the developable area. Proposed green space around the peripheries of the site would provide sufficient access to retained trees and hedges for ongoing management along with the capacity for new tree planting to supplement the boundaries trees.

- 6.4 The outline development proposal should be considered acceptable on arboricultural grounds. The proposals have shown that all the existing trees could be successfully retained provided they are given due consideration within a reserved matters application.



Category U - Trees / Groups Unsuitable for Retention  
(BS 5837:2012)



Category A - Trees / Groups of High Quality  
(BS 5837:2012)



Category B - Trees / Groups of Moderate Quality  
(BS 5837:2012)



Category C - Trees / Groups of Low Quality  
(BS 5837:2012)



Hedgerow  
(Colour indicates BS5837:2012 Category)



Root Protection Area (The RPA has been altered where appropriate to reflect underground constraints)



Individual / Group Number and BS5837:2012 Category



Indicative Shade Pattern (in accordance with BS5837:2012 where appropriate)

All dimensions to be verified on site. Do not scale this drawing, use figured dimensions only. All discrepancies to be clarified with project Arboriculturalist. Drawing to be read in conjunction with Arboricultural Assessment and Appendix A - Tree Schedule.

Drawing has been produced in colour and is based on digital information in .dwg format, aerial images and/or GPS location where appropriate. A monochrome copy should not be relied upon. The exact position of individual trees or species included as part of a tree group, woodland or hedgerow should be checked and verified on site prior to any decisions for foundation design, tree operations or construction activity being undertaken. Further survey work would be required for calculating foundation depths.

Trees are living organisms that change over time, the condition of all trees illustrated herein, are to be checked by the project Arboriculturalist should works commence 12 months after the date of this survey.

SOME TREES MAY BE SUBJECT TO STATUTORY CONSTRAINTS. IT IS THEREFORE ADVISED THAT NO WORKS SHOULD BE UNDERTAKEN TO ANY TREES ILLUSTRATED HEREIN WITHOUT FIRST OBTAINING THE RELEVANT AUTHORISATION TO DO SO UNLESS AGREED AS PER THE APPROVED PLANS THROUGH PLANNING CONSENT.

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project  
Henthorn Road  
Clitheroe

drawing title  
TREE SURVEY PLAN

scale  
1:1250 @ A3

drawn  
EKP

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drawing number

rev

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|        |  |
|--------|--|
| T1 (A) |  |
| G1 (A) |  |



Indicative Shade Pattern (in accordance with BS5837:2012 where appropriate)

All dimensions to be verified on site. Do not scale this drawing, use figured dimensions only. All discrepancies to be clarified with project Arboriculturalist. Drawing to be read in conjunction with Arboricultural Assessment and Appendix A - Tree Schedule.

Drawing has been produced in colour and is based on digital information in .dwg format, aerial images and/or GPS location where appropriate. A monochrome copy should not be relied upon. The exact position of individual trees or species included as part of a tree group, woodland or hedgerow should be checked and verified on site prior to any decisions for foundation design, tree operations or construction activity being undertaken. Further survey work would be required for calculating foundation depths.

Trees are living organisms that change over time, the condition of all trees illustrated herein, are to be checked by the project Arboriculturalist should works commence 12 months after the date of this survey.

SOME TREES MAY BE SUBJECT TO STATUTORY CONSTRAINTS. IT IS THEREFORE ADVISED THAT NO WORKS SHOULD BE UNDERTAKEN TO ANY TREES ILLUSTRATED HEREIN WITHOUT FIRST OBTAINING THE RELEVANT AUTHORISATION TO DO SO UNLESS AGREED AS PER THE APPROVED PLANS THROUGH PLANNING CONSENT.

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Gladman Developments

Henthorn Road  
Clitheroe

## TREE RETENTION PLAN

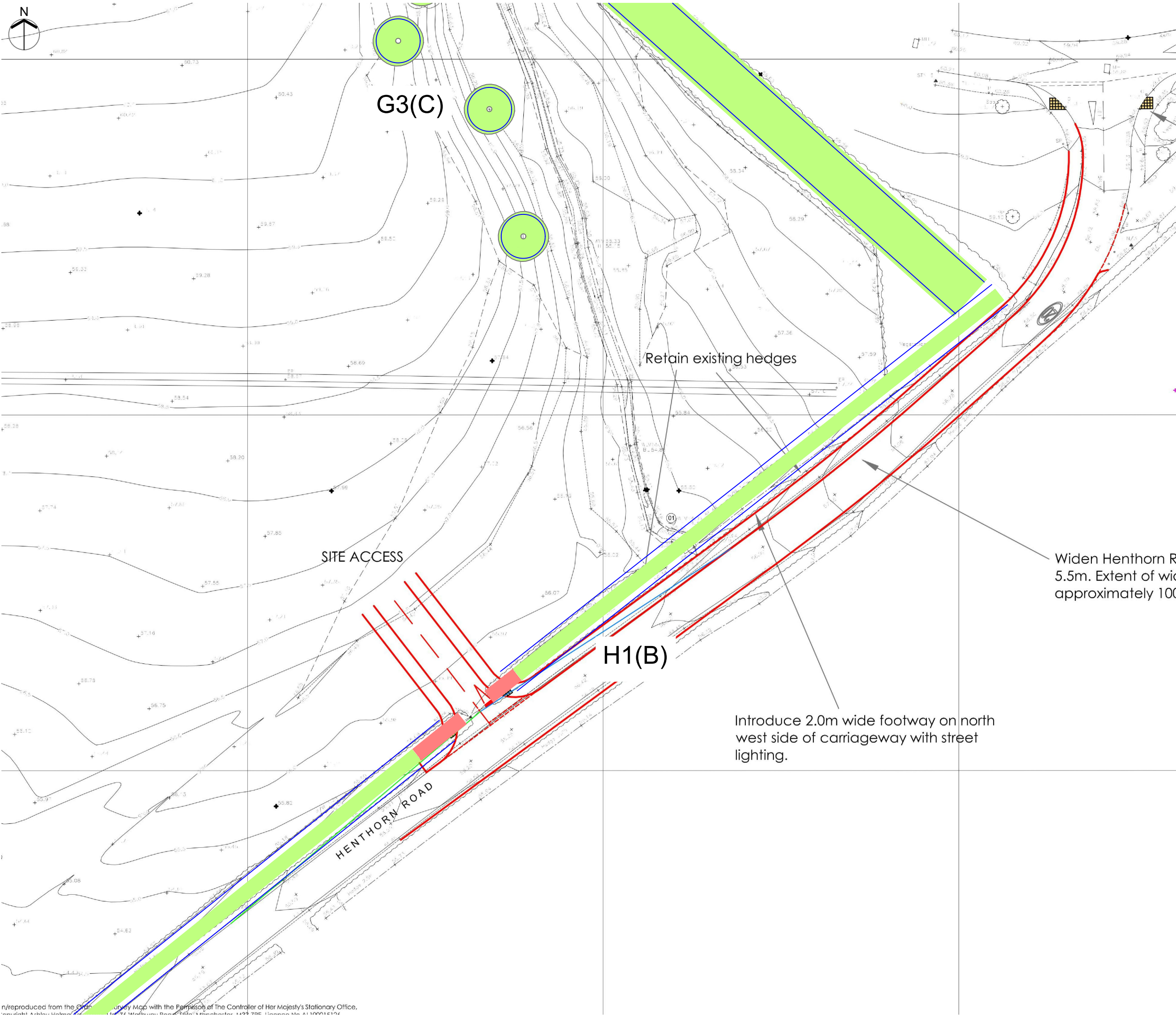
date  
August 2018

REV

**8439-T-02**

**A**

CAD file: K:\8400\8439\ARB\Plans\Tree Retention Plan.dwg

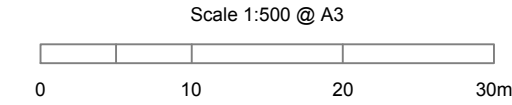


KEY

Tree/Group to be Retained

Hedgerow Proposed to be Retained and Incorporated into the New Development

T1 (A)  
G1 (A)



NOTES

All dimensions to be verified on site. Do not scale this drawing, use figured dimensions only. All discrepancies to be clarified with project Arboriculturalist. Drawing to be read in conjunction with Arboricultural Assessment and Appendix A - Tree Schedule.

Drawing has been produced in colour and is based on digital information in .dwg format, aerial images and/or GPS location where appropriate. A monochrome copy should not be relied upon. The exact position of individual trees or species included as part of a tree group, woodland or hedgerow should be checked and verified on site prior to any decisions for foundation design, tree operations or construction activity being undertaken. Further survey work would be required for calculating foundation depths.

Trees are living organisms that change over time, the condition of all trees illustrated herein, are to be checked by the project Arboriculturalist should works commence 12 months after the date of this survey.

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rev  
-

## Appendix A - Tree Schedule

| Measurements                                                                                                                                | Age Class                                                               | Overall Condition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Root Protection Area (RPA)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Height - Measured using a digital laser clinometer (m)                                                                                      | YNG: Young trees up to ten years of age                                 | G - Good: Trees with only a few minor defects and in good overall health needing little, if any attention                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <ul style="list-style-type: none"><li>• The RPA Radius column provides the extent of an equivalent circle from the centre of the stem (m).</li><li>• The RPA is calculated using the formulae described in paragraph 4.6.1 of British Standard 5837: 2012 and is indicative of the rooting area required for a tree to be successfully retained. Tree roots extend beyond the calculated RPA in many cases and where possible a greater distance should be protected.</li><li>• Where veteran trees have been identified the RPA has been calculated in accordance with Natural England guidance i.e. 15x the stem diameter, uncapped.</li></ul> |
| Stem Dia. - Diameter measured (mm) in accordance with Annex C of the BS5837                                                                 | SM: Semi-mature trees less than 1/3 life expectancy                     | F - Fair: Trees with minor rectifiable defects or in the early stages of stress from which it may recover                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Crown Radius - Measured using a digital laser clinometer radially from the main stem (m)                                                    | EM: Early mature trees 1/3 – 2/3 life expectancy                        | P - Poor: Trees with major structural and/or physiological defects such that it is unlikely the tree will recover in the long term                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Abbreviations<br>est - Estimated stem diameter<br>avg - Average stem diameter for multiple stems<br>upto - Maximum stem diameter of a group | M: Mature trees over 2/3 life expectancy                                | D - Dead: This could also apply to trees in an advanced state of decline and unlikely to recover                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                                                                                                             | OM: Over mature declining or moribund trees of low vigour               | The BS category particular consideration has been given to the following <ul style="list-style-type: none"><li>• The health, vigour and condition of each tree</li><li>• The presence of any structural defects in each tree/group and its future life expectancy</li><li>• The size and form of each tree/group and its suitability within the context of a proposed development</li><li>• The location of each tree relative to existing site features e.g. its screening value or landscape features</li><li>• Age class and life expectancy</li></ul> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                                                                                                                             | V: Veteran tree possessing certain attributes relating to veteran trees |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| Structural Condition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The following is an example of considerations when inspecting structural condition:</p> <ul style="list-style-type: none"> <li>The presence of fungal fruiting bodies around the base of the tree or on the stem, as they could possibly indicate the presence of possible internal decay</li> <li>Soil cracks and any heaving of the soil around the base</li> <li>Any abrupt bends in branches and limbs resulting from past pruning</li> <li>Tight or weak 'V' shaped forks and co-dominant stems</li> <li>Hazard beam formations and other such biomechanical related defects (as described by Claus Mattheck, Body Language of Trees HMSO Research for Amenity Trees No. 4 1994)</li> <li>Cavities as a result of limb losses or past pruning</li> <li>Broken branches or storm damage</li> <li>Damage to roots</li> <li>Basal, stem or branch / limb cavities</li> <li>Crown die-back or abnormal foliage size and colour</li> </ul> |

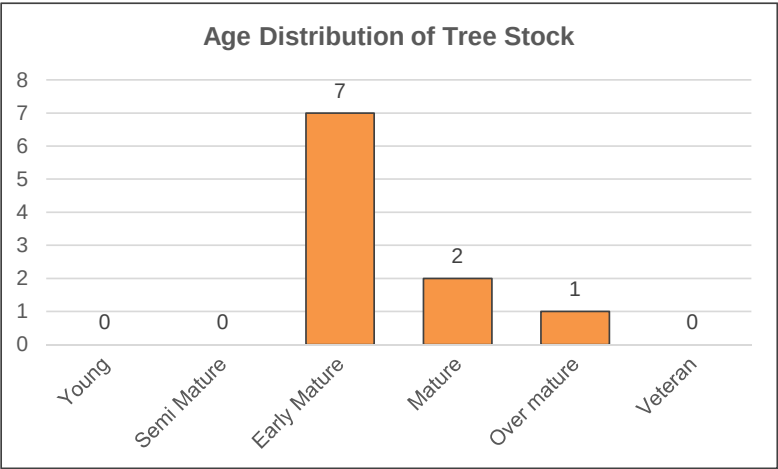
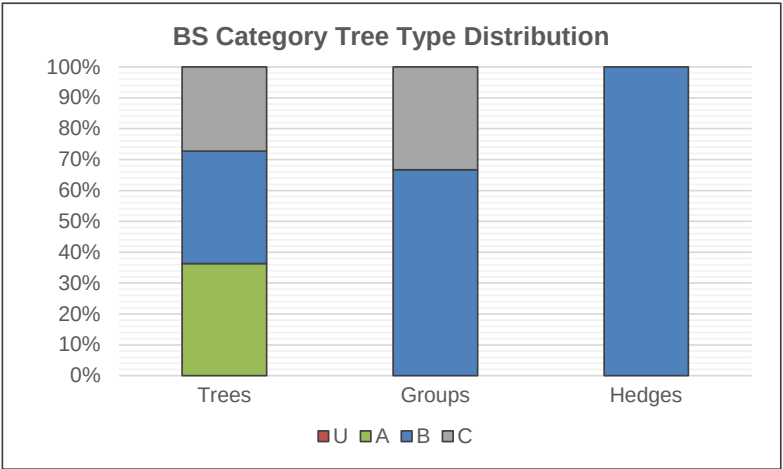
| Quality Assessment of BS Category                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Category U - Trees 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. |
| Category A - Trees of high quality with an estimated remaining life expectancy of at least 40 years.                                                               |
| Category B - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.                                                           |
| 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.               |
| Sub-categories: (i) - Mainly arboricultural value<br>(ii) - Mainly landscape value<br>(iii) - Mainly cultural or conservation value                                |

Appendix Summary

|            | Individual Trees | Totals | Tree Groups and Hedgerows | Totals |
|------------|------------------|--------|---------------------------|--------|
| Category U |                  | 0      |                           | 0      |
| Category A | T1, T4, T8, T11  | 4      |                           | 0      |
| Category B | T2, T3, T7, T9   | 4      | G1, G2, H1, H2, H3, H4    | 6      |
| Category C | T5, T6, T10      | 3      | G3                        | 1      |
|            | Total            | 11     | Total                     | 7      |

**BS Category Tree Type Distribution** displays the proportion of trees assessed in each type to enable a better understanding of the category distribution.

**Age Distribution of Tree Stock** shows the number of trees in each age category across the tree stock allowing assessment of their longevity to be made.



| Tree No                 | Species                                         | Height | Stem Dia. | Crown Radius                         | Age Class | Overall Condition | Structural Condition                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | RPA | RPA Radius | BS5837 Cat |
|-------------------------|-------------------------------------------------|--------|-----------|--------------------------------------|-----------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------------|------------|
| <b>INDIVIDUAL TREES</b> |                                                 |        |           |                                      |           |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |     |            |            |
| T1                      | English oak<br><i>Quercus robur</i>             | 16     | 790       | N - 6.5<br>S - 7<br>E - 7<br>W - 7.5 | EM        | G                 | Growing from hedge H2 with a gap of around 2m to either side of trunk. Historic livestock compaction/poaching around buttress roots due to sheltering livestock. The crown shows good vigour and is free from significant defect with only small diameter deadwood. Epicormic growth clads trunk from 2.5m to 4.5m. Presently around 4m clearance off electricity service to south west.<br><br><b>WORK RECOMMENDATION</b><br>Trim back epicormic growth to aid access for hedge cutting. | 282 | 9.5        | A (i)      |
| T2                      | Copper Beech<br><i>Fagus sylvatica purpurea</i> | 9      | 400       | Up to 6                              | EM        | P                 | Off-site tree growing from Siddows Hall. Trunk located approximately 1.5m beyond boundary fence. Clad in ivy to 9m. Although early in the growth season, poor foliage density with miniaturised leaves in uppermost crown indicating manifestation of stress over a number of years.<br><b>WORK RECOMMENDATION</b><br>Tree should be monitored.                                                                                                                                           | 72  | 4.8        | B (i)      |
| T3                      | Red Horse Chestnut<br><i>Aesculus x carnea</i>  | 10     | 450       | Up to 6                              | EM        | F                 | Off-site tree growing within Siddows Hall. Trunk set around 2.3m beyond boundary. Lightly clad in ivy. Limited windows of view, however clear necrotic seams indicating historic damage, likely due to bleeding bark canker disorder. Note: Much of site overhang is due to root sucker growth close to the boundary fence.<br><b>WORK RECOMMENDATION</b><br>Owner should sever ivy and confirm structural condition.                                                                     | 92  | 5.4        | B (i)      |
| T4                      | Copper Beech<br><i>Fagus sylvatica purpurea</i> | 14     | 460       | Up to 6                              | EM        | G                 | Off-site tree growing within Siddows Hall set back around 2m beyond fence. Limited windows of view, however trunk bifurcates at around 3m with a potentially weak main fork (certainly of acute angle). Crown exhibits good vigour and no visible defects but is part reliant upon companion shelter by adjacent ash.<br><b>WORK RECOMMENDATION</b><br>Pay particular attention to main fork during future monitoring.                                                                    | 96  | 5.5        | A (i)      |

| Tree No | Species                          | Height | Stem Dia.         | Crown Radius | Age Class | Overall Condition | Structural Condition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | RPA | RPA Radius | BS5837 Cat |
|---------|----------------------------------|--------|-------------------|--------------|-----------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------------|------------|
| T5      | Ash<br><i>Fraxinus excelsior</i> | 24     | 600               | Up to 9      | M/OM      | P                 | Off-site tree growing within Siddows Hall. Twin stems with the nearest being around 1.3m beyond fence.<br>Tree appears to be of coppice origin. The largest stem has a historic wound on the survey site side whereby a secondary branch was removed while the tree was young. This has resulted in suspected significant basal decay. Becoming densely clad in ivy. Evidence of previous branch shedding.<br><b>WORK RECOMMENDATION</b><br>Owner of tree should commission survey following severance of ivy to confirm structural configuration. Tree expected to have limited useful life expectancy, especially as within failing distance of overhead electricity service. | 163 | 7.2        | C (i)      |
| T6      | Ash<br><i>Fraxinus excelsior</i> | 25     | 450<br>280<br>350 | Up to 10     | EM        | F                 | Off-site tree growing within Siddows Hall located around 1m beyond fence. Old lapsed coppice featuring three primary stems from approximately 0.6m above ground level. The two largest stems are becoming densely clad in ivy. Collectively, the tree features a number of heavily end weighted branches including towards the neighbouring electricity service.<br><b>WORK RECOMMENDATION</b><br>Owner of tree should cut back low level scrub and sever ivy to allow thorough inspection to confirm structural configuration. In its current form, tree is considered likely to have limited useful life expectancy.                                                          | 182 | 7.6        | C (i)      |
| T7      | Ash<br><i>Fraxinus excelsior</i> | 16     | 450               | Up to 8      | EM        | G                 | Off-site tree growing within Siddows Hall located around 1.5m beyond boundary fence.<br>Limited windows of view, however trunk bifurcates at around 1.6m above ground level. Initial indications are that the fork is of reasonable configuration. Minor deadwood only within crown.<br><b>WORK RECOMMENDATION</b><br>Pay attention to fork during future monitoring.                                                                                                                                                                                                                                                                                                           | 92  | 5.4        | B (i)      |

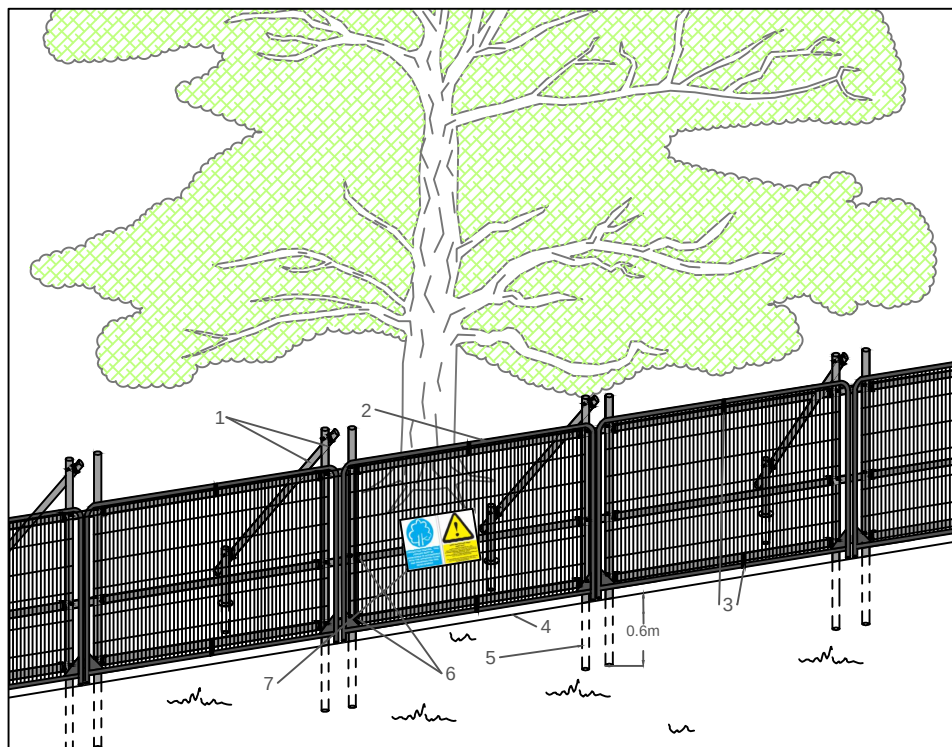
| Tree No | Species                          | Height | Stem Dia. | Crown Radius                         | Age Class | Overall Condition | Structural Condition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | RPA | RPA Radius | BS5837 Cat |
|---------|----------------------------------|--------|-----------|--------------------------------------|-----------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------------|------------|
| T8      | Ash<br><i>Fraxinus excelsior</i> | 26     | 1050      | Up to 9.5                            | OM        | F                 | Off-site tree growing within Siddows Hall. Approximate trunk centre around 1m beyond fence.<br>Limited windows of view, however openings between buttress plus swelling in lower trunk indicate that it is substantially hollow. Decay likely coalesces with opening in trunk at 2.5m on eastern side. Crown retrenching.<br>Significant initiation of epicormic growth on primary branch structure.<br>Previously pruned back to give clearance to overhead electricity service.<br><b>WORK RECOMMENDATION</b><br>Although not considered veteran at present, tree contains sufficient vigour likely to allow its retention into over maturity and would be a suitable candidate for retrenchment crown pruning, helping to limit hazard to overhead electricity service.<br>Tree's requirements must be taken into account when treating Japanese knotweed which extends up to base of trunk. | 499 | 12.6       | A (iii)    |
| T9      | Ash<br><i>Fraxinus excelsior</i> | 16     | 580       | N - 6.5<br>S - 7<br>E - 6<br>W - 6   | EM        | G                 | Growing from boundary hedge. Overgrown vegetation around base (stock fence set around 3m off original fence line). Previously cut back to give clearance to overhead electricity wires on southern side of crown which has initiated dense epicormic growth.<br><b>WORK RECOMMENDATION</b><br>No works required at present.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 152 | 7.0        | B (i)      |
| T10     | Ash<br><i>Fraxinus excelsior</i> | 9      | 750       | N - 7<br>S - 7.5<br>E - 7.5<br>W - 6 | M         | F                 | Tree of unusual form located to the northern margins of a low lying seasonal pond (dry at time of survey). Based upon twin stems with that to the north west being lightly clad in ivy whilst the much larger stem lies to the south eastern side and grows horizontal to the ground to approximately 3.5m offset from the stump before rising up with a generally multi-stemmed form. Multiple areas of dieback and decay with King Alfred's cake fungus ( <i>Daldinia concentrica</i> ) frequent on deadwood.<br><b>WORK RECOMMENDATION</b><br>Remove dead and defective branches only where necessary on health and safety grounds. Tree's primary value is on biodiversity grounds.                                                                                                                                                                                                         | 254 | 9.0        | C (i)      |

| Tree No | Species                             | Height | Stem Dia. | Crown Radius                         | Age Class | Overall Condition | Structural Condition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | RPA | RPA Radius | BS5837 Cat |
|---------|-------------------------------------|--------|-----------|--------------------------------------|-----------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------------|------------|
| T11     | English Oak<br><i>Quercus robur</i> | 17     | 970       | N - 7.5<br>S - 6.5<br>E - 9<br>W - 7 | M         | F                 | Current overhang beyond stock fence due east is 4.5m. Tree lies slightly due west of hedge H3. Evidence of previous livestock poaching around trunk base. Substantial basal flair, particularly on western side with opening between root buttress revealing lower trunk to be substantially hollow. Opening in trunk at 4.5m on northern side where decay has resulted following failure of a primary branch a great many years ago. Overall, tree has a crown growth bias to the south and currently shows good vigour. Minimal deadwood where overhanging site, however substantial part failed yet hung up deadwood in lowest crown on northern side but only overhanging hedge H3. Tree considered to be of heightened biodiversity value. | 426 | 11.6       | A (i)      |

| Group No               | Species                                                                                                                                                                                                                             | Height  | Stem Dia. | Crown Radius | Age Class | Overall Condition | Structural Condition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | RPA | RPA Radius | BS5837 Cat |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|-----------|--------------|-----------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------------|------------|
| <b>GROUPS OF TREES</b> |                                                                                                                                                                                                                                     |         |           |              |           |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |     |            |            |
| G1                     | Hawthorn<br><i>Crataegus monogyna</i><br>Blackthorn<br><i>Prunus spinosa</i><br>Hazel<br><i>Corylus avellana</i><br>Crab apple<br><i>Malus sylvestris</i><br>Holly<br><i>Ilex aquifolium</i><br>English elm<br><i>Ulmus procera</i> | Up to 6 | Up to 240 | 3.5          | SM-M      | F                 | Group relates to an outgrown hedge along boundary with Siddows Hall located to the hall side of the boundary stock fence. However, there are occasional self set elements, typically blackthorn and hawthorn, that have seeded to the site side of the fence. The sole elm is to the north western end of the group and located directly beneath overhead electricity service. The older hawthorn elements show signs of having once being managed as a low level hedge, however now all components are outgrown resulting in a tree group classification. Approximately 10m2 of Japanese knotweed ( <i>Fallopia japonica</i> ) noted to north western end of group growing from both sides of the boundary.<br><b>WORK RECOMMENDATION</b><br>If required, layering blackthorn, in particular, and minor self set elements to the survey site side of the fence may be removed (would be essential if intending to reference). Group of limited overall value, however adds to low level inter-site screening. | 26  | 2.9        | B (ii)     |
| G2                     | Goat willow<br><i>Salix caprea</i><br>Common ash<br><i>Fraxinus excelsior</i>                                                                                                                                                       | Up to 7 | Up to 350 | 6.5          | SM-EM     | F                 | Multi-stemmed goat willow growing from waterline of pond with semi-mature ash growing from pond embankment on northern edge.<br><b>WORK RECOMMENDATION</b><br>Cut back/crown lift willow if required for maintenance to pond. Species prone to layering.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 55  | 4.2        | B (ii)     |
| G3                     | Hawthorn<br><i>Crataegus monogyna</i>                                                                                                                                                                                               | Up to 6 | Up to 260 | 3.5          | EM-M      | F                 | Individual hawthorn (connected only in landscaping terms) growing on steep sided grass embankment due west of the brook course. Component trees have typical multi-stemmed form.<br><b>WORK RECOMMENDATION</b><br>No works required at present.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 31  | 3.1        | C (ii)     |

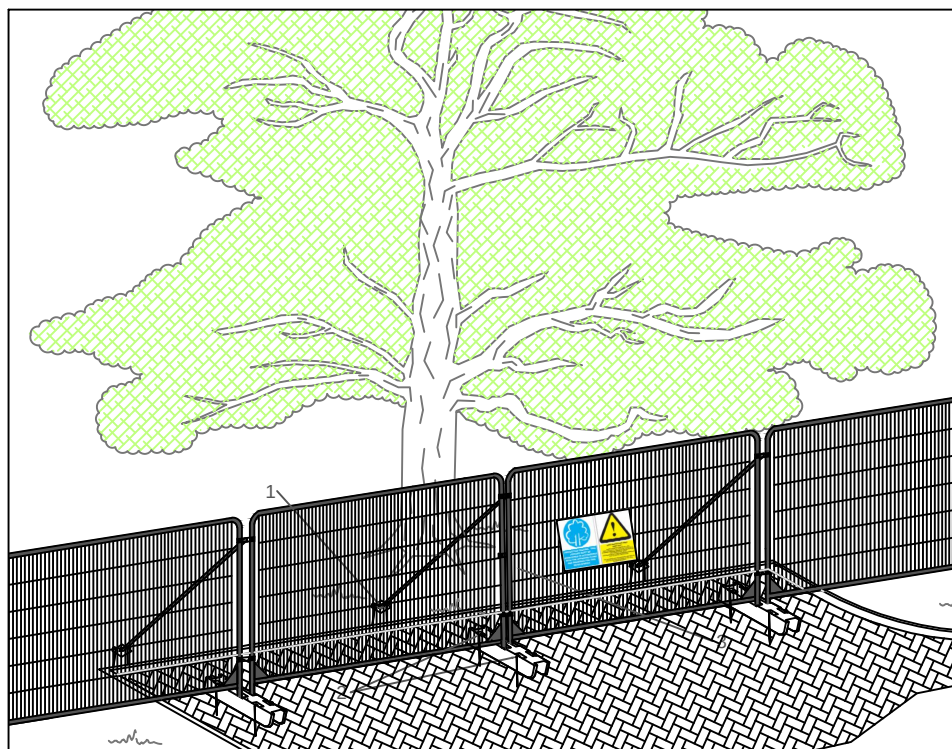
| Hedge No         | Species                                                                                                                                                                                                                                      | Height | Stem Dia. | Crown Radius | Age Class | Overall Condition | Structural Condition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | RPA | RPA Radius | BS5837 Cat |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------|--------------|-----------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------------|------------|
| <b>HEDGEROWS</b> |                                                                                                                                                                                                                                              |        |           |              |           |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |     |            |            |
| H1               | Hawthorn<br><i>Crataegus monogyna</i><br>Dog rose<br><i>Rosa canina</i><br>Common ash<br><i>Fraxinus excelsior</i><br>Blackthorn<br><i>Prunus spinosa</i><br>Guelder rose<br><i>Viburnum opulus</i><br>Crab apple<br><i>Malus sylvestris</i> | 1.8    | Up to 150 | 1            | M         | G                 | Hedge growing along boundary adjacent to Henthorn Road. Previously laid south west to north east. Subsequently managed by regular flailing with a boxy rectangular profile with only slightly tapering side growth. Hedge is of consistent structure along length with only the single, long established gateway entrance into the survey area. Although centre line of hedge is clearly discernible, some suckering has taken place of both hawthorn and blackthorn on the north western side.<br><b>WORK RECOMMENDATION</b><br>Continue regular hedge management to maintain in a dense consolidated form to maintain clearance to carriageway.                                                                                                | 10  | 1.8        | B (ii)     |
| H2               | Blackthorn<br><i>Prunus spinosa</i><br>Hawthorn<br><i>Crataegus monogyna</i><br>Dog rose<br><i>Rosa canina</i><br>Elder<br><i>Sambucus nigra</i><br>Holly<br><i>Ilex aquifolium</i><br>Hazel<br><i>Corylus avellana</i>                      | 3      | Up to 270 | 1            | M/OM      | G                 | Hedge dividing two permanent pasture fields with indications of being an early field boundary.<br>For much its length, the base of the hedge is slightly raised above that of the grass sward to either side and shows previous management both by virtue of laying, typically in a south easterly to north westerly direction, but also some regeneration by coppicing. A high proportion of loose stone is noted along this boundary, although there is no obvious indication of a previous wall.<br>Poached areas of ground where sheep have sheltered beneath and occasional associated bark damage.<br>In recent times, hedge has been managed by cutting back with an agricultural flail with a varying upper height of around 1.8m to 2m. | 33  | 3.2        | B (ii)     |

| Hedge No | Species                                                                                                                                                                                                                                                                                                         | Height | Stem Dia. | Crown Radius | Age Class | Overall Condition | Structural Condition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | RPA | RPA Radius | BS5837 Cat |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------|--------------|-----------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------------|------------|
| H3       | Hawthorn<br><i>Crataegus monogyna</i><br>Crab apple<br><i>Malus sylvestris</i><br>Dog rose<br><i>Rosa canina</i><br>Elder<br><i>Sambucus nigra</i><br>Blackthorn<br><i>Prunus spinosa</i><br>Holly<br><i>Ilex aquifolium</i>                                                                                    | 7      | Up to 270 | 5            | M         | F                 | <p>Heights range from 2.5-7m. Considerably outgrown, particularly at the south western end of the hedge, however consistent enough in its form and previous management to warrant a hedgerow designation. Current fence stands off boundary, limiting access for maintenance. Two clumps of crab apple exist to the Siddows Hall side of the electricity service wayleave, whilst closest to the service pole itself there are a number of self set ash approaching semi-maturity which inevitably will require management to curtail their spread towards the service. Previously laid in a north easterly direction. Occasional gaps of up to 3–4m, some of which have been infilled with deadwood/brush, although not woven into a pukka dead hedge.</p> <p><b>WORK RECOMMENDATION</b><br/>Where accessible, continue to clip back main body of hedge growth on at least the side faces to consolidate growth.</p> | 33  | 3.2        | B (ii)     |
| H4       | Hawthorn<br><i>Crataegus monogyna</i><br>Dog rose<br><i>Rosa canina</i><br>Common ash<br><i>Fraxinus excelsior</i><br>Elder<br><i>Sambucus nigra</i><br>Blackthorn<br><i>Prunus spinosa</i><br>Sycamore<br><i>Acer pseudoplatanus</i><br>Holly<br><i>Ilex aquifolium</i><br>English elm<br><i>Ulmus procera</i> | 4.5    | Up to 250 | 3.5          | M         | G                 | <p>Heights range from 2.5-4.5m. Old boundary hedgerow separating survey site from existing development off Yarrow Crescent, Brun Crescent and Blakewater Road.</p> <p>New fence line has been established with an offset of up to 6m to the south west of the original hedge line, following which the hedge has become increasingly outgrown with the section beyond the line of the brook on the Henthorn Road side becoming infilled between the original hedge and the fence by, in particular, blackthorn scrub.</p> <p>Ash and sycamore saplings within are less than 100mm in diameter whilst the majority of the elm growth is within approximately 100m of Henthorn Road.</p> <p><b>WORK RECOMMENDATION</b><br/>Should active management be promoted then the clearance of blackthorn scrub will be necessary between the hedge and the fence.</p>                                                           | 28  | 3.0        | B (ii)     |



### Standard specification for protective barrier

1. Standard scaffold poles
2. Heavy gauge 2m tall galvanized tube and welded mesh infill panels
3. Panels secured to scaffold frame with wire ties
4. Ground level
5. Uprights driven into the ground until secure (min depth of 0.6m)
6. Standard scaffold clamps
7. Construction Exclusion Zone signs



### Above ground stabilising systems

1. Stabiliser strut with base plate secured with ground pins
2. Feet blocks secured with ground pins
3. Construction Exclusion Zone signs

### NOTES

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## APPENDIX B PROTECTIVE FENCING SPECIFICATIONS

CAD file: S:\Arb resources\Basic Templates\Tree Protection\Appendix B - Protective Fencing A4.dwg