

Land at Hoodlands Farm, Harry Stoke



Tyler
Grange

Arboricultural Impact
Assessment
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Summary

- S.1. This Arboricultural Impact Assessment has been prepared by Tyler Grange Group Limited on behalf of BoKlok to accompany a full planning application for new residential development at Hoodlands Farm, Harry Stoke.
- S.2. This report provides details of a tree survey and assesses the impact of the proposed development towards existing trees. This report has been guided by the recommendations set out within the British Standard BS5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations' to accord with industry best practice.
- S.3. This report identifies that only low value trees (Category C and Category U) require removal to facilitate the development. The removals include 18 trees which are predominantly located internally and are situated to provide limited visual amenity to the site and its wider locality. The planting of 61 new trees is proposed to replace those removed. This far exceeds the number of replacements required under the South Gloucestershire Council's Supplementary Planning Document for Trees and New Development.
- S.4. The site's boundary hedgerows will be subject to management works and native infill planting to facilitate the development and to improve their overall structure and continuity. The hedgerows present adjoining the existing access will be retained with additional planting provided as part of a new green lane that is proposed once the proposed temporary access road is downgraded.
- S.5. The proposed access from Hambrook Lane has been assessed in terms of its potential impacts towards a high value oak and a moderate value oak located adjacent. The assessment demonstrates that the access can be implemented without resulting in adverse harm to the trees subject to adoption of the mitigation and protection measures included within this report.
- S.6. There are no significant issues identified within the tree survey and this assessment that should prohibit the proposed development on arboricultural terms and therefore the development is considered supportable from an arboricultural perspective. This is subject to the adoption of the tree protection measures as detailed within this report.



Section 1: Introduction

Purpose

- 1.1 This Arboricultural Impact Assessment has been prepared by Tyler Grange Group Ltd on behalf of BoKlok. It forms part of a planning application for new residential development at Hoodlands Farm in Harry Stoke.
- 1.2 Full planning permission is sought for the development of a new housing scheme on the site, with associated access and landscaping. The proposed development layout is shown at **Appendix 1**.
- 1.3 This report provides details of a tree survey of the site and assesses the impact of the proposed development towards existing trees. This report has been guided by the recommendations set out within the British Standard BS5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations' (hereafter referred to as BS5837).
- 1.4 The application is to be submitted to South Gloucestershire Council (SGC). SGC's local planning policy and national planning policy pertinent to trees is set out at **Appendix 2**.



Section 2: Tree Survey Findings

Site Description

- 2.1 The site is demarcated by the red line boundary as shown on the Tree Constraints Plan (11857/P01e) (TCP) located to the rear of this report. It is centred on National Grid Reference ST 63556 79477.
- 2.2 The site comprises a single pastoral field surrounded by hedgerows and trees. There is an existing residential building on the site with outbuildings, hard-surfaces and associated soft-landscaping. The site is accessed from Hambrook Lane, which comprises a compacted hardcore surfaced track with hedgerows at either side. Beyond the site boundaries are currently agricultural fields. The land adjoining the northern, eastern and southern site boundaries is subject to an approved outline permission (Ref: PT16/4782/O submitted by Crest Nicholson) for residential development across the wider East of Harry Stoke application site.



Figure 1. Satellite image of the site with approximate boundary (Imagery © 2020 Google Maps).



Tree Survey Summary

- 2.3 A series of tree surveys of the site have completed in accordance with BS5837 and the methodology as detailed at **Appendix 3** by a suitably qualified Arboricultural Consultant of Tyler Grange.
- 2.4 The initial survey was completed in October 2018 and the most recent survey was completed in June 2021 to obtain up-to-date tree survey data.
- 2.5 A measured topographical survey was used to inform the location of trees and their surrounding context. The topographical survey of the Hambrook Lane junction was updated in June 2021 to obtain additional detail to inform the arboricultural impact assessment in this area.
- 2.6 The distribution of the trees and hedgerows surveyed is illustrated on the **Tree Constraints Plan (TCP) (See Plan 1)**, which includes plotted details of their constraints to new development in accordance with BS5837, including:
- Tree quality gradings¹;
 - Root Protection Areas (RPAs)²;
 - Tree canopy spreads³; and
 - Tree shading⁴.
- 2.7 Findings for each of the trees surveyed are detailed in the Tree Survey Schedule (**See Appendix 5**). This provides a tabulated record of the trees surveyed, including; reference numbers, species composition, tree dimensions, life stage, physiological and structural condition, and the arboricultural value of each survey entry.

Tree Quality Gradings

- 2.8 The trees surveyed have been categorised using the 'cascade chart for tree quality assessment' (**See Appendix 4**) recommended by the BS5837. The grading system allows informed decisions to be made concerning the design and impact of the development in relation to the arboricultural value of the trees surveyed.
- 2.9 No veteran or ancient trees are present on / within influence of the site.

Category A Trees

- 2.10 Category A trees are denoted by a 'Green' tree canopy outline as illustrated on the TCP and include T1 (English oak) and T15 (English oak). Both trees represent particularly good examples of the species with arboricultural and landscape qualities.

¹ The value of arboricultural features surveyed in accordance with the methodology set-out Appendix 3.

² a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority. See further explanation at Appendix 3.

³ Dimensions of the trees crown spread and clearance from ground level. See further explanation at Appendix 3.

⁴ Shade cast by existing trees which may affect the availability of sunlight and daylight within a new development. See further explanation at Appendix 3.



- 2.11 Tree T1 is located at the north-western corner of the main site within the boundary hedgerow. It forms a substantial mature oak tree which is in good overall condition for its age and the species. It is a 'stand-out' tree when compared to the surrounding moderate value trees within the boundary hedgerows.
- 2.12 Tree T15 is another substantial fully mature English oak tree located in the hedgerow on the western side of the access track. It is located next to the access gate and forms standalone principal feature of the surrounding locale. The tree has been previously crown lifted over the existing access track however its overall canopy remains well-balanced and in good physiological condition.

Category B Trees

- 2.13 Trees of moderate arboricultural value (Category B) are denoted by a Blue tree canopy outline as illustrated on the TCP. These include trees T2, T7, T9, T11, T16, T17, T18 and T20 which lack the special qualities necessary to merit category A designation.
- 2.14 Trees T2, T7, T9 and T11 are mature ash noted to be in good condition considering the presence of ash dieback on the site which is affecting other ash trees. They offer maturity and structural diversity across the boundary hedgerows, whilst not representing trees with notable or distinct arboricultural qualities. This is also the case for trees T18 and T19, which are an early mature oak (T17) and mature ash (T18) located at the northern side of Hambrook Lane.
- 2.15 Tree T16 is a mature oak tree located on a steep bank at the junction of the access and Hambrook Lane. The tree forms multiple stems from its base and one major stem has previously failed or been removed leaving a large dead stub. The tree has been previously crown reduced to avoid conflict within overhead cable located directly above it. The tree offers a moderate degree of visual amenity to Hambrook Lane however, it is not considered to be a high value feature.
- 2.16 Tree T20 is located at the southern side of Hambrook Lane within the hedgerow. It forms multiple stems from its base into a well-established crown and canopy. The crown to the north-west is stunted from previously trees which have now been removed to facilitate adjacent construction works. The tree is semi-mature and offers good future potential as a roadside tree however it lacks any special visual or landscape qualities.

Category C Trees and Hedgerows

- 2.17 Trees of low arboricultural value trees are denoted by a Grey tree canopy outline as illustrated on the TCP. These include trees T3, T4, T5, T8, T10, T12, T13, T14, and groups G1 and G2, and hedgerows H1 – H10.
- 2.18 Trees T3, T4, T5, T8 are mature ash trees that show early symptoms of ash dieback. This was evident through sparsity in canopies and a reduction in shoot extension. Tree T8 was in a more advanced stage of dieback. Such trees have reduced future potential as a result.
- 2.19 Tree T10 is a mature ash which has been heavily and unsympathetically pruned away from overhead telephone line resulting in a poor overall form and condition.
- 2.20 Tree T12 is a pear tree which has a limited live crown / canopy remaining and poor overall form affecting its future potential. It is also situated to provide limited visual amenity.



- 2.21 Trees T13 and T14 include an early mature English oak and goat willow respectively which were planted on the edge of a small swale feature. Both trees are in average condition however are situated internally within the site to provide limited visually amenity and maturity to the wider locale.
- 2.22 Groups G1 and G2 comprise ornamentally planted trees within the rear garden and frontage of the residential dwelling. Such trees lack maturity and represent unremarkable specimens. A larger western red cedar and eucalyptus within group G2 are considered a detracting species from the native species mix and arrangement of tree cover across the site and its locality. Poor pruning works to these trees has also affected their future potential and appearance.
- 2.23 Hedgerows H1, H2, H4, H5 and H6 form the boundaries of the main site parcel. Predominant woody species in the hedgerows include native hawthorn, blackthorn, apple, plum, hazel, elm, dogwood and field maple. The hedgerows have been previously cut back at the lower canopies to height of 2m-2.5m and heras fencing installed to secure the site. There is then an unmanaged canopy overhang of between 2-3m extending wider than the lower portions of the hedge. The hedgerows are largely in average condition, with sections of dead elm and bramble clad evident. They would benefit from improved management, including a combination of sympathetic flail cutting to reduce the canopy overhang width and height, with infill planting of weaker areas, to encourage denser growth, resulting in a more robust hedge with better continuity.
- 2.24 Hedgerow H3 comprises screen planting of Leyland cypress and western red cedar. The hedge is considered detracting amongst the surrounding hedgerow arrangement and species mix.
- 2.25 Hedgerows H7 and H8 align the existing access track. They have been previously cut back from the access side. Hedgerows H9 and H10 are align Hambrook Lane and include a high proportion of elm which is in a cycle of decline and regeneration as a result of Dutch elm disease. There is also a heavily bramble clad section of H10 located opposite the site's access track.

Category U Trees

Category U trees are denoted by a Red tree canopy outline as illustrated on the TCP and include trees T6 and T19. Tree T6 is an early mature ash located in the eastern boundary hedgerow and is in significant irremediable decline from ash dieback. Tree T19 is a dead elm tree (from Dutch elm disease) located in the hedgerow at the southern side of Hambrook Lane. The removal of Category U trees is recommended due to their condition irrespective of the proposed development.

Tree-related Designations

- 2.26 Following a background check of available online mapping, the presence or absence of tree-related designations is detailed in **Table 2** below.



Table 2: Tree-related Designations

Designation Type	Tree Reference Numbers
Tree Preservation Order ⁵	The site's trees (not hedgerows) fall within an 'Area' Tree Preservation Order which covers the wider Harry Stoke development area.
Conservation Area ⁶	None
Ancient Woodland ⁷	None
Woodland Habitat ⁸	None

Tree Constraints Summary

2.27 The baseline tree survey as detailed above was used as a tool during the design process to minimise the impact on existing trees from new development. The key considerations in terms of the design included the following:

- The proposed access from Hambrook Lane and its implications towards trees T15 and T16.
- The main development area and its proximity to the site's boundary trees, including high and moderate value trees, and the lower value hedgerow that has collective enclosure merit.

2.28 The main opportunities arising from the survey and development design included the following:

- New tree planting to increase the species diversity which currently includes a high proportion of ash that has limited future potential. This will assist in optimising the tree stock resilience by diversifying the species mix, thus the potential for losses through plant pathogens is reduced.
- New tree planting to increase canopy cover and the creation of new arboricultural features such as a new tree avenue along Hambrook Lane and internal trees within the development area.
- Improved management of the site's boundary hedgerows, including re-shaping and infill planting to maintain continuity.

⁵ A Tree Preservation Order is an order made by a local planning authority in England to protect specific trees, groups of trees or woodlands in the interests of amenity. An Order prohibits the any works and damage to trees (with some exceptions) without the local planning authority's written consent. More information can be found online <https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas#tree-preservation-orders--general>.

⁶ Trees in a conservation area that are not protected by an Order are protected by the provisions in section 211 of the Town and Country Planning Act 1990. These provisions require people to notify the local planning authority, using a 'section 211 notice', 6 weeks before carrying out certain work on such trees, unless an exception applies. More information can be found online <https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas#tree-preservation-orders--general>.

⁷ Ancient woods are areas of woodland that have persisted since 1600 in England and Wales, and 1750 in Scotland. The Magic Maps website <https://magic.defra.gov.uk/MagicMap.aspx> has been used to search for ancient woodland on or adjacent to a site.

⁸ Spatial data of woodlands identified under the Priority Habitat Inventory (England) Published by Natural England. The Magic Maps website <https://magic.defra.gov.uk/MagicMap.aspx> has been used to search for woodland on or adjacent to a site.



Section 3: Arboricultural Impact Assessment

3.1. The baseline tree constraints as detailed previously formed part of the overall design phase of the proposed development layout with respect to minimising impact of arboricultural features of value. This assessment has considered details of the following proposals for the development which are submitted separately with the application:

- Proposed Site Layout (**See Appendix 1**)
- Proposed access arrangement at Hambrook Lane (submitted separately)
- Proposed Cut and Fill, Drainage and Engineering Designs prepared by Structa (submitted separately)
- Proposed Landscape Masterplan prepared by JTP Studios (submitted separately)

Tree Retention, Removal and Replacement Planting

3.2. A Tree Retention and Removal Plan (**See Plan 2**) identifies the existing trees to be retained, removed, or pruned to facilitate the development and associated works.

3.3. Tree removal will be limited to low value trees only (category C and category U). This includes 18 trees and sections of hedgerow which have low arboricultural value. All high (category A) and moderate (Category B) value trees will be retained and protected as part of the development.

3.4. The removals predominantly include trees located internally within the field parcel, the existing residential garden area and curtilage soft landscaping. Such trees are situated to provide limited visual amenity and lack any maturity. The boundary trees and hedgerows will be largely retained to conserve a green enclosure to the site and their contribution to wider network of tree and hedgerow lines in the locality.

3.5. A minimum of 31 new trees is required to accord with the replacement planting SPD. The proposed Softworks Landscape Masterplan (submitted separately) for the main development proposes 61 new trees of differing sizes and species for the various landscape uses. This includes 26 semi mature and ANS specimen trees, 13 smaller species trees, 11 pleached trees and 11 feathered trees. There are also 14 new trees proposed along the access road from Hambrook Lane which will be planted once it is downgraded to a foot/cycle way. There will be a total of 75 new trees planted within the application area which demonstrates accordance with the replacement tree planting SPD and the associated arboricultural benefits.

3.6. The proposed tree removals are detailed in the **Table 3** overleaf. This includes the re-planting requirements that has been assessed in accordance with the adopted SPD Tree Replacement Policy (See **Figure 2** overleaf).



Trunk diameter of tree lost to development (cm measured at 1.5m above ground level)	Number of replacement trees
Less than 15cm	0-1
15-19.9cm	1
20-29.9cm	2
30-39.9cm	3
40-49.9cm	4
50-59.9cm	5
60-69.9cm	6
70-79.9cm	7
80+cm	8

Figure 2. Tree replacement requirements based on stem diameter of trees to be removed, as extracted from adopted SPD 'Trees and Development sites'.

Table 3: Proposed Tree Removal and Replacement Planting Requirements

Tree Number	BS5837 Grading Category / stem diameter (cm)	Compensatory planting to accord with adopted Tree Replacement Policy.	Description / Reason for Removal
T12 (Pear)	C	2	Proposed development area, including associated access roads, garden spaces and landscaping.
T13 (English Oak)	C	4	
T14 (goat willow)	C	4	
G1a (whitebeam)	C	1	
G1b (corkscrew willow)	C	2	
G1c (silver birch)	C	1	
G1d (silver birch)	C	2	
G1e (silver birch)	C	1	
G1f (eucalyptus)	C	3	
G1g (western red cedar)	C	3	
G2a (elm)	C	1	
G2b (cherry)	C	1	
G2c (silver birch)	C	2	
G2d (silver birch)	C	1	
G2e (silver birch)	C	1	
G2f (silver birch)	C	2	
T6 (common ash)	U	0	Due to poor condition.
T19 (elm)	U	0	Proposed access (dead tree).
Total	18		31



Proposed Hedgerow Works

- 3.7. Some of the site's boundary hedgerows will be partially removed and trimmed to facilitate the development. The Tree Retention and Removal Plan (**See Plan 2**) identifies the areas of hedgerow removal and trimming.
- 3.8. The sections of removal and trimming works is required at the site's northern, eastern, and southern boundaries to accommodate potential new access links into the future Crest Nicholson development and the long-term usability of the residential garden spaces.
- 3.9. The extent of trimming works has been informed by survey work to establish where a suitable line of trimming works lies without affecting the overall structure and continuity of hedges. As the hedgerows are currently unmaintained, they have become 'top-heavy' and would benefit from some reshaping works to become more robust. There are also weaker areas of hedgerow present which would benefit from infill planting, including sections of dead elm. There is an existing heras fence installed along the hedgerows and the lower parts of the hedges have been trimmed back to the heras fence line up to 2m-2.5m. The proposed garden fence boundaries will tie into the heras fencing line to avoid any additional trimming works in the lower parts of the hedge. The trimming works will include the upper parts of the hedgerow where it has become overgrown with a leggy spread and height.
- 3.10. The existing access track from Hambrook Lane will be widened and resurfaced to form a new temporary vehicular access. Once the alternative access is provided into the site from the adjacent Crest Nicholson development, the proposed vehicular access will be downgraded to form a narrower cycle / footpath.
- 3.11. The hedgerows aligning the access road (H7 and H8) have been cut back from the existing access track and subsequently reduced in width from the findings of a previous tree survey completed in 2019. The Tree Retention and Removal Plan (**See Plan 2**) shows the extent of hedgerow works to facilitate the proposed temporary vehicular access. The hedgerows will be retained and subject to very minor trimming works on the western side hedge (H8) and a section of removal in a localised southern part of H7 to accommodate the new access alignment from the junction.
- 3.12. Details of the proposed works to the surveyed hedgerows in included in Table 4 below.

Table 4. Proposed Hedgerow Works

Hedgerow Number	Description of Works	Mitigation / Compensation
H1	<p>Partial Removal - 4.3m section removed to accommodate future cycle path connection into adjacent land.</p> <p>Trimming – 100m length of site side hedge to be trimmed back to plot boundary fence line. This will include trimming works to the overgrown upper parts of the hedgerow to reshape and reduce in height of 5-6m.</p>	Trimming works will serve to reshape the hedge for future robustness and continuity. The proposed Softworks Landscape Masterplan includes for new native hedge infill planting to plug gaps and weaker areas of the hedgerow for future strengthening. There are sections of dead elm to remove and replace.



H2	<p>Partial removal – 5m section to be removed at southern end to facilitate future vehicular access route into adjacent land.</p> <p>Trimming – 64m length of site side hedge to be trimmed back to plot boundary fence lines and open space boundary. This will include trimming works to the overgrown upper parts of the hedgerow to reshape and reduce in height of 5-6m.</p>	Trimming works will serve to reshape the hedge for future robustness and continuity. The proposed Softworks Landscape Masterplan includes for new native hedge infill planting to plug gaps and weaker areas of the hedgerow for future strengthening.
H3	<p>Removal – full removal of an 80m length of planted Leyland cypress hedgerow.</p>	This hedgerow was planted as a screen around the existing yard / compound. It is considered to be an incongruous feature amongst the native hedgerows present at the site's boundaries and wider area.
H4	<p>Trimming – 48m length of site side hedge to be trimmed back to plot boundary fence line. This will include trimming works to the overgrown upper parts of the hedgerow to reshape and reduce in height of 5-6m.</p>	Trimming works will serve to reshape the hedge for future robustness and continuity. The proposed Softworks Landscape Masterplan includes for new native hedge infill planting to plug gaps and weaker areas of the hedgerow for future strengthening. There are sections of dead elm to remove and replace.
H5	<p>Partial removal – 10m section to be removed to facilitate future vehicular access route into adjacent land.</p> <p>Trimming – 26m length of site side hedge to be trimmed back to plot boundary fence lines. This will include trimming works to the overgrown upper parts of the hedgerow to reshape and reduce in height of 5-6m.</p>	Trimming works will serve to reshape the hedge for future robustness and continuity. The proposed Softworks Landscape Masterplan includes for new native hedge infill planting to plug gaps and weaker areas of the hedgerow for future strengthening.
H6	<p>Partial Removal – 8m section removed to facilitate turning vehicular turning head.</p>	The proposed Softworks Landscape Masterplan includes for new native hedge infill planting to plug gaps and weaker areas of the hedgerow for future strengthening.
H7	<p>Partial Removal – 30m section to be removed at access side of hedge to facilitate the proposed temporary vehicular access.</p>	The hedgerow will not be punctured and a minimum at 2.5m width of hedgerow retained at the point of removal. Native infill planting is proposed along the entire length of the hedgerow as part of the Softworks Landscape Masterplan for the foot/cycle way.
H8	<p>Trimming – 75m length of access side of hedge to be trimmed back to facilitate the proposed vehicular access and footpath. The depth of trimming work will be a maximum of 0.5m.</p>	The hedgerow will be retained at a width of c.2m and above. Native infill planting is proposed along the entire length of the hedgerow as part of the Softworks Landscape Masterplan for the foot/cycle way.
H9	<p>Trimming – 3m section at the corner of the hedge will be trimmed back to facilitate the proposed footway of the access road.</p>	The hedgerow will be retained with infill planting proposed as part of the Softworks Landscape Masterplan for the foot/cycle way.
H10	<p>Partial Removal – 15m section will be removed at the northern side of the hedgerow to facilitate the proposed</p>	The section to be removed predominately comprises bramble with limited woody species present. The hedgerow will not be



	<p>widening of Hambrook Lane and the associated footway.</p> <p>Trimming – 27m length at the northern side of the hedge to be trimmed back to facilitate the proposed footpath. The depth of trimming work will be a maximum of 1.5m and a 3.75m width of hedgerow will be retained.</p>	<p>punctured, and infill planting will be provided as part of the softworks landscaping.</p>
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Proposed Tree Pruning

Main Development Area

- 3.13. Tree pruning works are identified on the Tree Retention and Removal Plan (**See Plan 2**) and relate to trees T3, T15 and T16.
- 3.14. A large mature ash tree (T3) will be heavily pruned to reduce its canopy to tie in with the hedgerow as shown on the Tree Retention and Removal Plan (**See Plan 2**). Following the tree survey update, early symptoms of ash dieback were noted in the canopy of the tree through sparsity and poor vigour. It is therefore a lower quality tree (category C) with reduced future potential. Given the proximity of the proposed dwelling and garden space, retaining the tree crown in this condition is not recommended. As opposed to fully removing the tree, a heavy reduction is proposed to avoid creating a gap in the hedge and to allow the tree to decline naturally whilst reducing the risk of tree failure.
- 3.15. Symptoms of ash dieback was also observed in retained trees T4, T5, T8. Trees T4 and T5 showed early stages of ash dieback whereas tree T8 showed more advanced stages of decline. These trees are not directly affected by the proposed development and therefore no pruning or management is proposed at this stage. Should the trees begin to decline and become a health and safety risk, their removal or other tree management works should be sought. Should planning consent be granted, it is recommended that these trees, along with the remaining ash trees on-site, are re-surveyed before construction works begin to identify any management requirements.

Access from Hambrook Lane – Tree T15

- 3.16. The proposed temporary access from Hambrook Lane will involve widening and resurfacing of the existing access track to form a new vehicular and footpath access. A detailed assessment has been undertaken to determine the extent of the crown lifting works required to facilitate construction vehicular access and the delivery of the modular homes into the site. The assessment has been based on the Access Road Sections prepared by Structa which have been submitted separately with the application. This includes details of the road position, along with existing and proposed levels.
- 3.17. It is understood that the proposed access will be implemented before the arrival of the modular homes, and therefore the clearance required must be taken from the finished level of the proposed access beneath the tree. The impact of any tree pruning works must also be viewed alongside the requirement for a no-dig surface to protect the rooting environment of the tree.



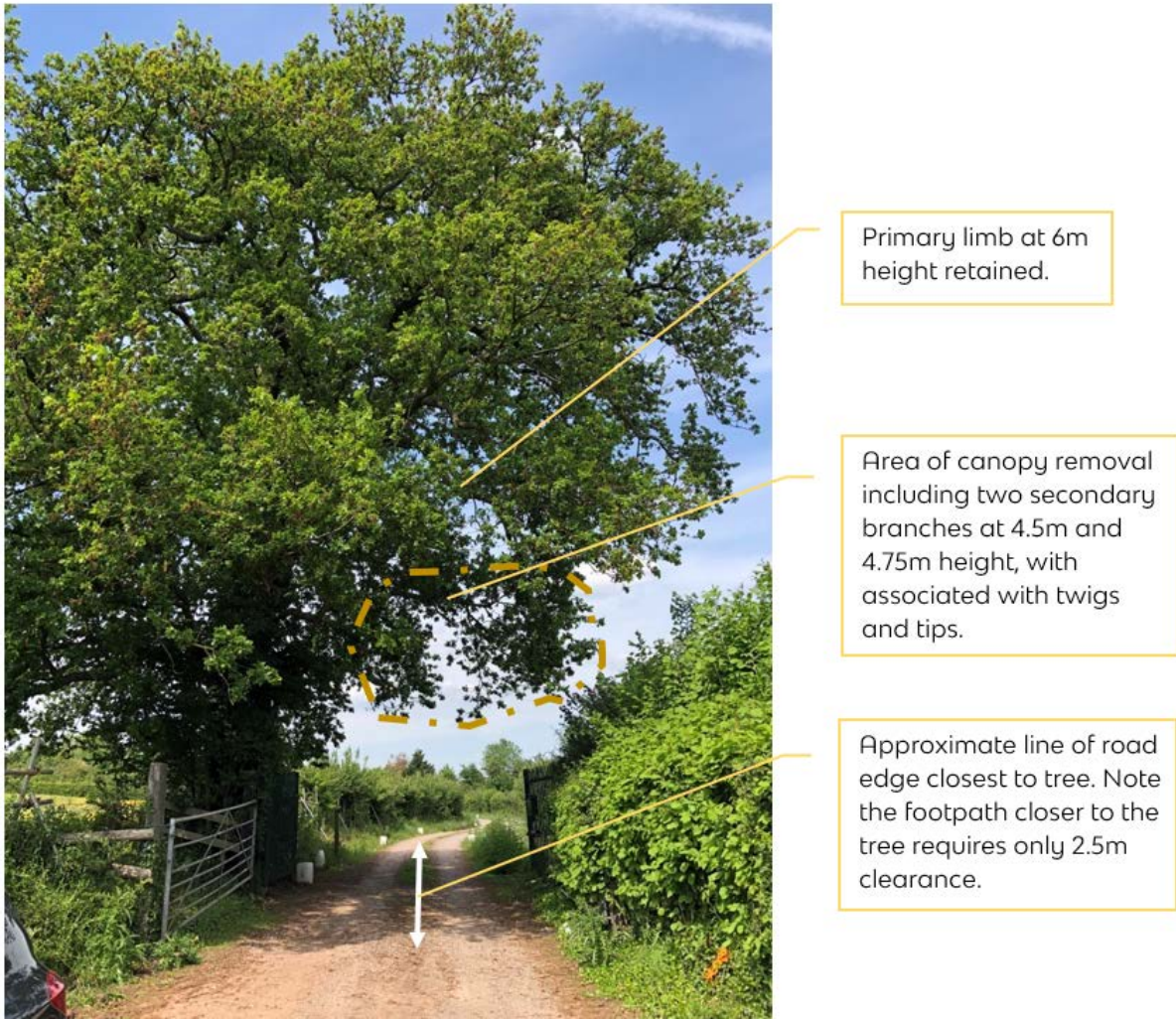


Figure 3. Image of tree T15 with canopy clearance requirements.

- 3.18. The proposed access road level will be a maximum of 47.500. The existing track surface beneath the canopy of the tree is measured between 46.91 and 47.05. There will therefore be an increase in road height of up to 500mm beneath the canopy of the tree to facilitate the build-up of a 200mm no-dig construction within the RPA.
- 3.19. The canopy clearance of the tree, as measured to its east over the track is detailed in Figure 3 above. Following construction of the road, the crown clearance will be 4m to the first secondary limb, 4.25m to next secondary limb and 5.25m to the next larger limb.
- 3.20. This assessment shows that only two secondary branches with their associated twigs will require pruning to facilitate the clearance needed for the modular homes. This area removal is illustrated on Figure 3, which demonstrates that only a very small proportion of the overall tree canopy will be removed. This will have a negligible impact towards to trees health and appearance. It will also be possible, as part of constructing the road surface, to maximise the removal of the existing track surface, to allow the proposed level to sit a low as possible. The assessment therefore shows a worse-case scenario.



Access from Hambrook Lane – Tree T16

- 3.21. Tree T16 is located at the top edge of a steep bank sloping upwards from Hambrook Lane and the existing access track. The canopy overhangs into Hambrook Lane and to the west over the existing access track.
- 3.22. The proposed access road level will be a maximum of 46.600 beneath the canopy of the tree. The existing track surface beneath the canopy of the tree is measured at 46.000. There will therefore be an increase in road height of up to 600mm beneath the canopy of the tree to facilitate a 200mm no-dig construction within the RPA. It is important to note that the increase in road levels has been maximised to reduce the 'cut effect' into the bank on which the tree is located. Bringing the road levels higher means there is a reduced amount of cut into the bank as addressed later in this report. The impact on tree canopy is considered less sensitive to the tree's health than the impact on tree roots that may be present within the bank.

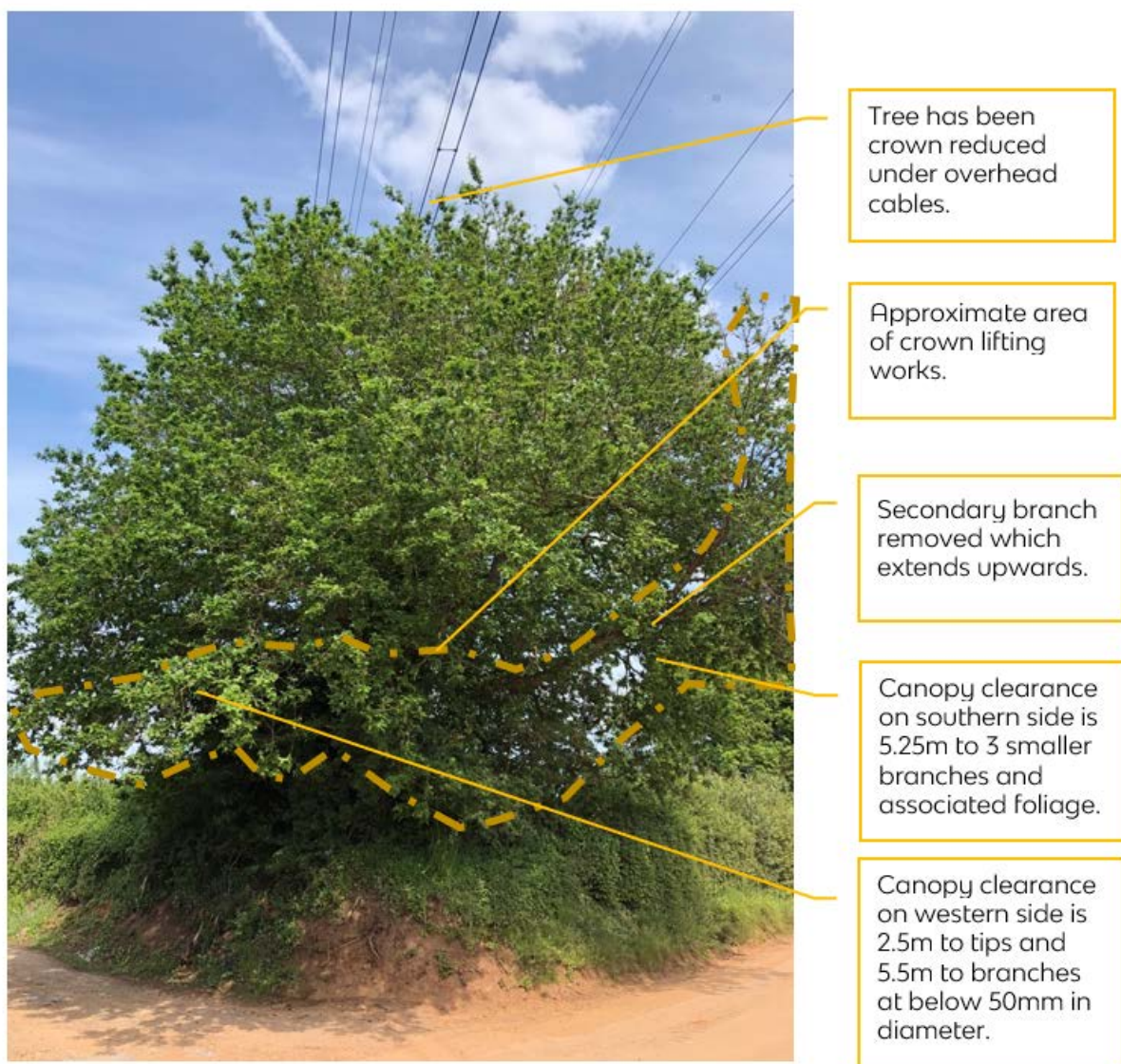


Figure 4. Image of tree T16 with canopy clearance requirements.

- 3.23. The canopy clearance of the tree, as measured to its south and west over Hambrook Lane and the track is detailed in Figure 4 below. This assessment shows that only the lower proportion of the



crown will require pruning and a good level of crown will be retained. The pruning work relates to secondary branches with no primary branches requiring removal. While a degree of pruning is work is required to facilitate the access of modular homes, the extent of the pruning is not considered detrimental to the overall health of the tree. There will be a slight impact to the appearance of the tree however a large majority of the crown will be retained to maintain visual amenity to Hambrook Lane.

Works within Root Protection Areas

- 3.24. The design of proposed development has been informed by the tree constraints information to avoid and minimise impacts towards trees.
- 3.25. The proposed buildings and roads have been located outside the RPAs of all trees. Where incursions within RPAs have been unavoidable in the design process, these include more light-weight structures (such as paths and parking bays) at the edges of the RPAs which do not represent a detrimental impact and can be suitably mitigated.
- 3.26. The proposed levels strategy prepared by Structa has also sought to avoid level changes / groundworks within the RPAs by using a series of retaining walls and slopes at the boundaries. For the site's levels to work there are pinch points within the RPAs which are unavoidable and can be suitably mitigated.
- 3.27. The proposed drainage and services scheme prepared by Structa has also been informed by the tree constraints to avoid siting drainage runs and features within RPAs as far as possible. There will be a requirement to place a foul water connection from the site to Hambrook Lane which will pass through the RPAs of trees T15 and T16, however this has been designed to alleviate the impact and will be subject to further assessment as part of detailed design. There will be a minor incursion into the RPA of low value tree T4 to accommodate a surface water run however the impact can also be appropriately mitigated as indicated in Table 5 below and the supporting Tree Protection Plan.
- 3.28. A **Tree Protection Plan (TPP) (See Plan 2)** has been prepared to set out the tree protection requirements and working methodology for the trees during the construction stage. This includes the plotted RPAs of trees in relation the layout of the development and the protection measures required to avoid harm to trees.
- 3.29. The Table below identifies where works within RPAs are required together with the recommendations for mitigation to avoid damage to the rooting environments. These recommendations have been incorporated into the Arboricultural Method Statement included within the Tree Protection Plan. Due to the complexity of implementing the new road adjacent to trees T15 and T16 this is addressed separately beneath the table.



Table 5: Works with Root Protection Areas

Tree Number	Type of Development	Mitigation to Avoid Impacts
T1 (Category A)	Section of car parking bays at very fringe of RPA.	Given the location and limited extent of the incursions the surfaces can be implemented without detrimental impacts to the tree. The area of incursion will be excavated in accordance with the AMS (sensitively by hand and overseen by an appropriately qualified arboricultural consultant) to avoid damage to any tree roots potential present.
T2 (Category B)	Hard landscaping at very fringe of RPA.	
T3 (Category C)	Cycle link located within RPA to the west.	This tree will be heavily pruned due to its poor condition however protection measures as set-out within the AMS will be adopted to accommodate the cycle link.
T4 (Category C)	Drainage run and shared private drive to north eastern portion of the RPA.	Both the drainage run and hard surface area will be excavated sensitively in accordance with the AMS. This is a low value tree however efforts will be made to retain the tree during construction.
T11 (Category B)	Section of car parking bay at very fringe of RPA.	Given the location and limited extent of the incursions the surfaces can be implemented without detrimental impacts to the tree. The area of incursion will be excavated in accordance with the AMS (sensitively by hand and overseen by an appropriately qualified arboricultural consultant) to avoid damage to any tree roots potential present.
T3, T4, T5, T7, H1, H2, H4, H5	New soft landscaping including open space creation and residential gardens.	New landscaping will require only the top turf layers / vegetation to be removed for re-seeding. As set-out in the AMS, any cultivation of the ground will be completed by hand in the RPAs and not level changes will occur. Digging of fence post holes to form the garden boundaries will also be completed by hand to avoid damaged to tree roots.

Tree T15 – Construction of new Access Road and Foul Water Connection

- 3.30. The tree is located on the western side of the track and the tree’s stem is almost touching the edge of the track with a gate post located in between. The track is made up of compacted hardcore and it is unknown how deep this is within the RPA before reaching the sub-soil. Given the presence of the track there is already a pre-existing impact towards the rooting environment of the tree and therefore, in principle, resurfacing the track within a new surface will represent no additional impact if the design and implementation adheres to good arboriculture practice.
- 3.31. The principle of protecting the tree is to avoid excavation into the root-able soil beneath the existing access, whilst avoiding raising levels high enough to require more substantial crown lifting works.
- 3.32. Cross-sections of the proposed road have been prepared by Structa and are issued separately with the application (See extract below at Figure 5 below). This provides a section through the road at the point of the tree, including the existing track and verge levels alongside the proposed new access road and footpath. The sections show that the new road will be constructed using a 200mm no-dig cellular confinement system, which will avoid any excavation into the RPA, other than minor levelling / preparation of the track surface to built-up on to. The footpath, which is located on the tree side, will be constructed on a 75mm Cellweb system. The footpath will be raised and 1:2 slope will be formed to tie the level into the base on the tree. The fill and grading will be located on top of the existing track and therefore no impacts around the base of the tree is required. The



kerbs for the road will be secured via steel anchors driven into the ground which will also serve to minimise excavation into the subsoil of the RPA.

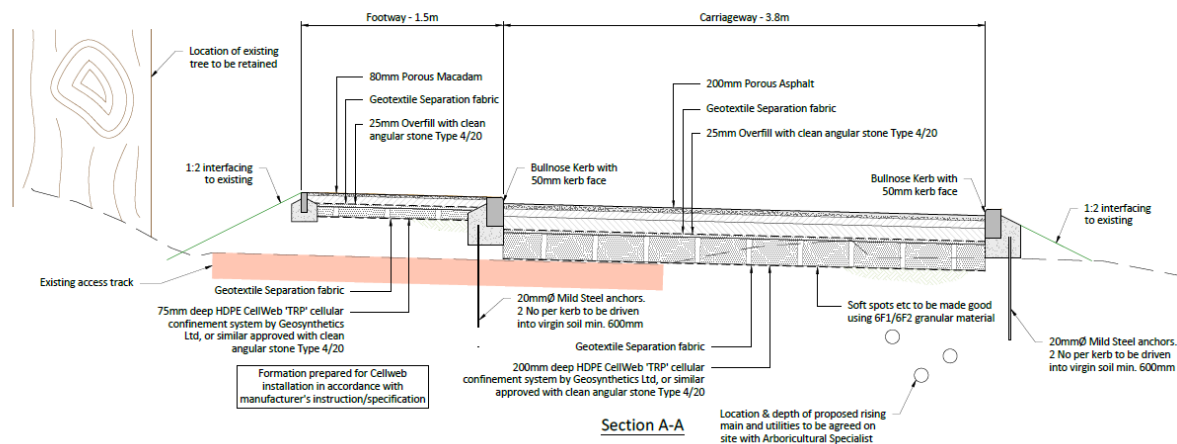


Figure 5. Extract of cross-sections prepared by Structa for proposed road next to tree T15.

- 3.33. The raising of the levels has been determined to allow a build-up over the existing access track whilst avoiding more substantial crown lifting works. The pruning works required have been addressed previously within this report which consider the cross-sections and proposed level increase.
- 3.34. The proposed road also incorporates a chicane traffic calming feature to give the tree more space around its stem, which is an improvement on the existing scenario where the track is up against the tree's stem. This will allow the lower stem / base of the tree more space to grow in the long-term without it conflicting with the new road structure and the pedestrians and vehicles using it.
- 3.35. The drainage strategy requires a foul water connection within the access road to connect the main development area to Hambrook Lane. This will be located within the RPA of the tree which is considered unavoidable as the RPA spans across the land ownership of the access route. The alignment of the drainage has been located on the far side of the access away from the tree to mitigate the impact on tree roots potentially present beneath the access road. The implementation of the foul water connection will require further arboricultural advice as part of its detailed design. At this stage, the proposal is to feed to drainage beneath the rooting system using a micro-drilling method. This will avoid the impacts associated with a trench located at the upper soil margins where tree roots are more likely to be present. The Tree Protection Plan and AMS stipulates that a boring technique is required, and that further site investigation is required to ensure that the foul water route and other services are implemented sensitively with respect to the tree's root system.
- 3.36. The proposed access road will be downgraded to a foot/cycleway following implementation of an alternative access from the adjacent Crest Nicholson development. This will include narrowing of the hard-surface to accommodate new soft-landscaping that will form a 'green corridor'. It is recommended that a separate AMS is prepared to detail the tree protection requirements during the removal of the temporary road surface and implementation of new landscaping. It is understood that this can be secured via a suitably worded planning condition.



3.37. Based on the assessment above, the proposed access road and drainage / service connections can be implemented within the RPA of tree T15 without causing detrimental effects to its rooting environment.

Tree T16 – Construction of new Access Road and Foul Water Connection

3.38. Extensive arboricultural advice has been provided during the design process for the new access road as it relates tree T16. While this is a moderate value tree (category B) the design has taken every step to retain it alongside the proposed access.

3.39. An updated topographical survey of the tree and its surrounding context, including the bank profiles and the location of the existing access track was completed to inform the assessment. The tree is multi-stemmed and located on a steep bank at approximately 1.75m above the level of the access track and Hambrook Lane. The bank is likely to impede root development towards the access track and Hambrook Lane given its height and sudden level change. The roots of the tree are therefore more likely to be present within the upper portions of the bank, away from the access / Hambrook Lane and into the adjoining field which is at a similar level to the base of the tree.

3.40. The principle of designing the access to avoid impacts to the tree was to avoid impacts into the bank on the eastern side of the access as far as possible. The constraints to aligning the access to the west (away from the tree / bank) include transport standards for the width of the footpath and road, the forward visibility / tracking required from the junction heading west to / from Hambrook Lane, and the land ownership on the western side of the access. Following an in-depth review of the access alignment, it has been located as far west away from the tree as possible within the constraints of transport standards and the land ownership. This results in an unavoidable incursion within the bank on the eastern side of the access track as shown in Figure 6 below.

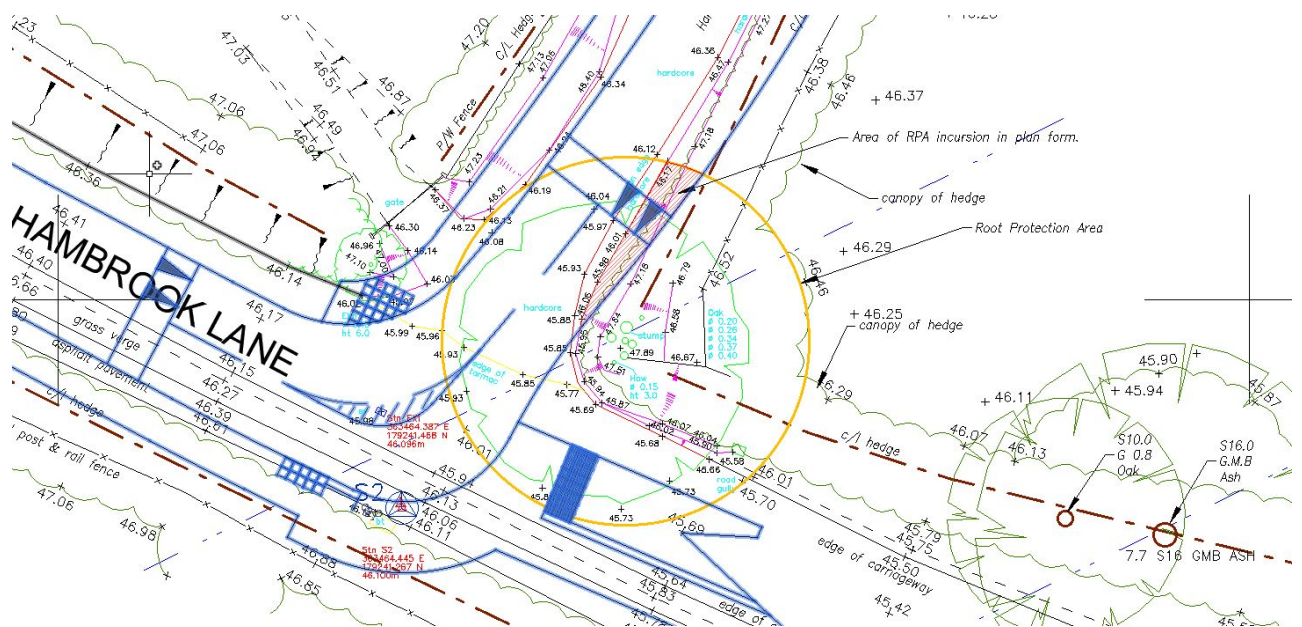


Figure 6. Overlay of proposed access alignment and topographical survey for tree T16. The area of incursion into the bank is shown with a red hatched area.

3.41. The extent of unsurfaced RPA (i.e. the bank) that will be impacted by the edge of the proposed road amounts to 4% of the overall RPA footprint. This represents a very low proportion of the



RPA and the depth of the incursion will also be minimised. The point of incursion is near to the tree's stem which may impact larger tree roots unless suitable mitigation is provided.

- 3.42. Due to the location of the incursion within the bank, the level of the road has been increased in order to reduce the extent of 'cut' into the bank. Increasing the level of the road allows a proportion of the bank to be incorporated beneath the access road build-up (see extract of cross-sections at Figure 7 below).

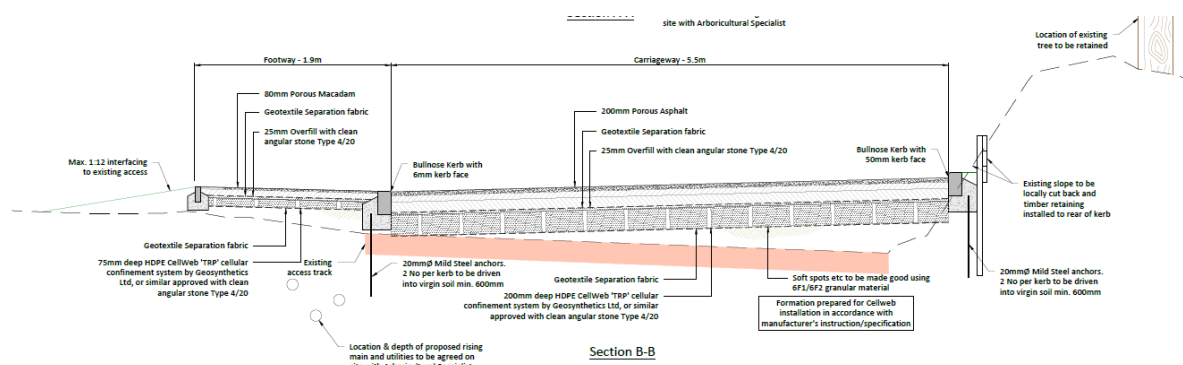


Figure 7. Extract of cross sections prepared by Structa for access road next to tree T16.

- 3.43. As illustrated above, the proportion of incursion into the bank adjacent to the tree has been minimised by increasing the level of the road. The incursion will be limited to the kerb haunching which represents a localised excavation at face of the bank only which will be 'scooped' out from the bank. A non-invasive timber retaining feature is also proposed to avoid regrading of the upper parts of the bank which may otherwise impact tree roots. The steel anchors securing the haunching will be locally driven into the bank, avoiding an excavation required using a conventional method.
- 3.44. The Tree Protection Plan and AMS (**See Plan 3**) includes the protection measures for the implementation of the access road adjacent to the tree, including arboricultural supervision of the localised excavation within the bank.
- 3.45. On the basis of the above assessment, it is considered that tree T16 can be retained and suitably protected from adverse harm during the implementation of the proposed access road.

Long-Term Tree Management and Social Proximity

- 3.46. The TRRP (**See Plan 2**) illustrates the extent of retained tree canopies and the associated shading areas in relation to the development layout. There is a localised impact of shading from tree T7 towards plots to the north of the tree. Tree T7 is a moderate value, early mature ash tree which has a relatively open canopy. The extent of shading from this single tree is not considered overbearing towards the plots and such a localised affect does not warrant major adjustments to the layout / positioning of non-habitable spaces.
- 3.47. Retained trees will not be located within private gardens to ensure that their long-term management remains favourable. New and existing soft landscaping will be privately management by a contractor, including the maintenance of the boundary hedgerows and trees.



- 3.48. Ash dieback was observed in site's ash population. This will require on-going monitoring to review its spread and the removal and or management of the ash trees may be required in the near future. This could be within the period of constructing the development, or post occupation of the site, depending on the severity of tree decline.

Conclusion

- 3.49. The proposed development requires the removal of low value trees only which are predominantly located internally. Such trees are situated to provide limited visual amenity. The trees to be removed will be replaced in accordance with SGCs Tree Replacement Policy. The amount of new tree planting exceeds the replacement obligations and a net-gain in tree cover can be achieved as part of the development.
- 3.50. The layout of the scheme has been directly informed by the tree survey constraints to avoid harmful incursions within root protection areas and the canopy spreads of trees. Where there are incursions, these represent a negligible impact and will be appropriately mitigated.
- 3.51. The proposed access from Hambrook Lane has been subject to a detailed assessment in relation to its potential impact towards the two oak trees. The assessment demonstrates that the access will not result in adverse harm to the trees provided that its implementation is completed sensitively and in accordance with the tree protection measures detailed within this report.
- 3.52. The development proposals are therefore considered acceptable in arboricultural terms and demonstrates conformity with local planning policy aspirations pertinent to trees.
- 3.53. It is recommended that adherence to the Tree Protection Plan and associated Arboricultural Method Statement is secured by way of an appropriately worded planning condition should consent be granted.



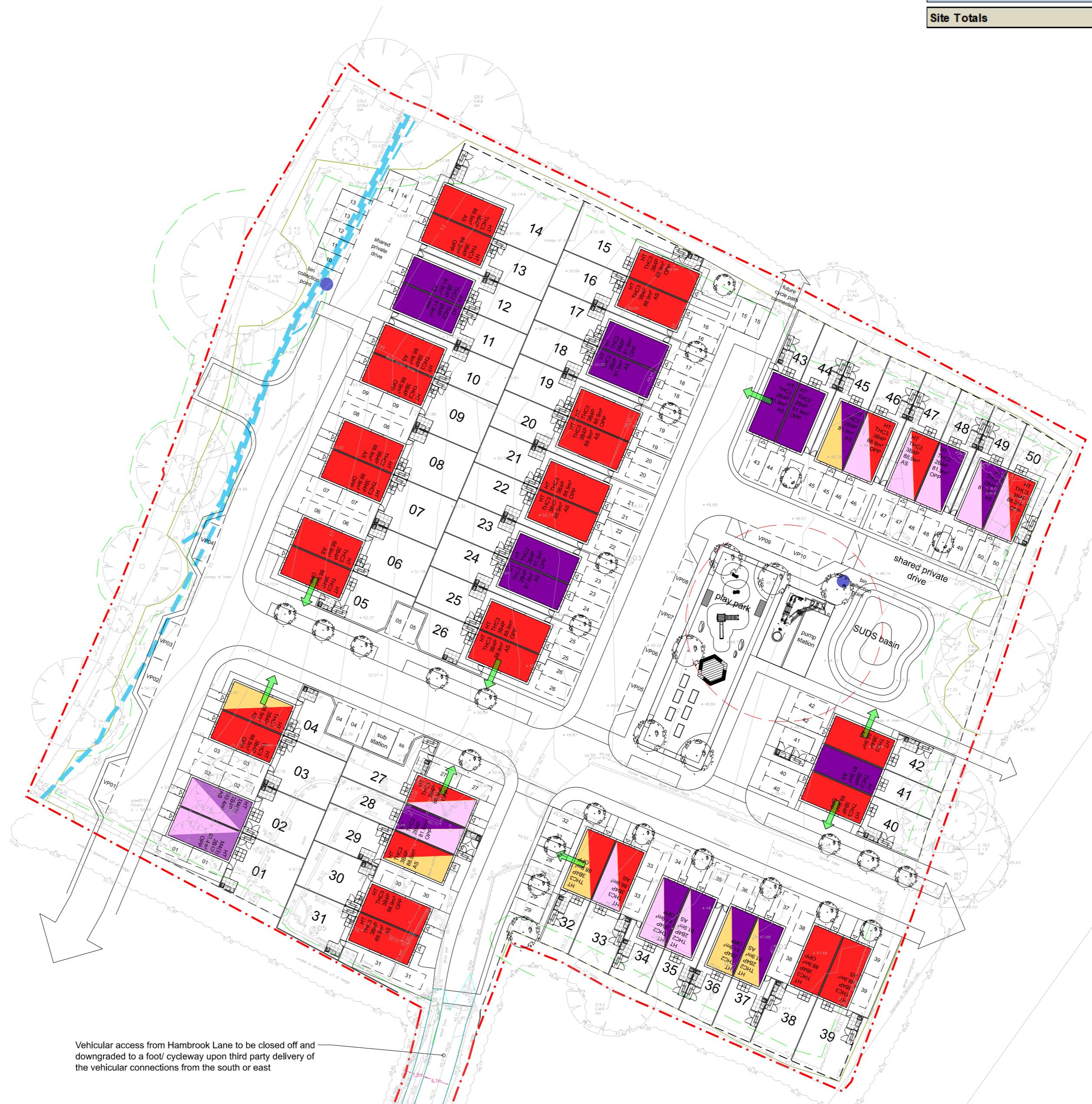
Appendix 1: Proposed Site Plan



Hoodlands Farm - Accommodation Schedule						
OMS Units	Unit Type	nr	GA		Sub-total GA	
			nr	sqm	nr	sqm
THC2	2B4P	882	81.9	7,938	737.1	9
THC3	3B4P	957	88.9	22,011	2,044.7	23
OMS Totals				29,949	2,781.8	32
AFFORDABLE Units						
Shared Ownership						
THC2	2B4P	nr	GA		Sub-total GA	
			nr	sqm	nr	sqm
		882	81.9	2,646	245.7	3
THC3	3B4P	nr	GA		Sub-total GA	
			nr	sqm	nr	sqm
		957	88.9	2,871	266.7	3
Shared Ownership Totals				5,517	512.4	6
AFFORDABLE Units						
Social Rent Units						
THC4	2B4P mobility unit	nr	GA		Sub-total GA	
			nr	sqm	nr	sqm
		1005	93.4	2,010	186.8	2
THC2	2B4P	nr	GA		Sub-total GA	
			nr	sqm	nr	sqm
		882	81.9	4,410	409.5	5
THC3	3B4P	nr	GA		Sub-total GA	
			nr	sqm	nr	sqm
		957	88.9	4,785	444.5	5
Social Rent Totals				11,205	1,040.8	12
Affordable Totals				16,722	1,553.2	18
Site Totals				46,671	4,335.0	50

PARKING SPACE PROVISION

Allocated spaces: 87 spaces
 Visitor's parking: 10 spaces
 Substation: 1 space



Vehicular access from Hambrook Lane to be closed off and downgraded to a foot/cycleway upon third party delivery of the vehicular connections from the south or east

KEY	
	Site boundary
	Root protection areas
	Underground electrical cables
	Side windows providing passive surveillance
	Bin collection area
	Refuse bin areas
	Cycle storage

Rev	Date	Description	Drawn	Chkd
P3	13.07.21	Key added, annotation updated	SC	GA
P2	06.07.21	Planning submission updates.	SC	GA
P1	28.06.21	Planning issue	GA	SC

Drawing Status
Planning

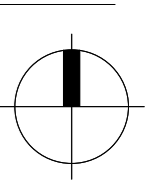


Client
Hoodlands Farm

Project
Hoodlands Farm

Drawing Title
Site Layout

Scale @ A1 1:500 Job Ref. 01784A
 Drawing No. HDF-JTP-SW-GL-DR-A-SL-5000 Revision P3
 Scale Bar 0 5 10 15 20 25m



Appendix 2: Planning Policy Context



Appendix 2: Planning Policy Context

National and Local Planning Policy

- A2.1. The consideration for existing trees and woodlands in relation to planning and new is set out within Section 15 'Conservation and Enhancing the Natural Environment' within the NPPF.
- A2.2. Paragraph 175 states that "development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons, and a suitable compensatory strategy exists".
- A2.3. At a national level, the consideration for trees is recognised in the context of their contribution green infrastructure and biodiversity networks, and also in terms of their contribution in landscape terms to the local setting and character to a place. Great weight is also applied to the importance of conserving existing aged trees, including ancient woodland and trees and trees considered to be 'veterans'. No veteran, ancient trees or ancient woodlands are present to be affected by the proposed development and there para 175 as it relates to these features is not considered applicable to the application.

Local Planning Policy

- A2.4. The site falls within the local planning authority of South Gloucestershire Council. Policies relevant to arboricultural matters are summarised below.

The South Gloucestershire Local Plan Core Strategy (adopted December 2013)

- A2.5. Policy CS2 – Green Infrastructure states that "The Council and its partners will ensure that existing and new GI is planned, delivered and managed as an integral part of creating sustainable communities and enhancing quality of life, consideration should be given to the following relevant GI objectives:
- *Realising the potential of Green Infrastructure to assist with mitigation of, and adaptation to, climate change;*
 - *Delivering high quality multi-functional and connected open spaces (including green and blue infrastructure);*
 - *Protecting, creating and improving recreation, play, access and local food cultivation opportunities;*
 - *Protecting and enhancing species and habitats, and creating new habitats and wild-life linkages between them;*
 - *Conserving and enhancing landscape character, historical, natural built and cultural heritage features;*
 - *Securing ongoing management and maintenance and creation of GI assets".*
- A2.6. Policy CS9 – Managing the Environment and Heritage includes an expectation for new development to "Conserve and enhance the natural environment, avoiding or minimising impacts on biodiversity and geodiversity".



South Gloucestershire Policies, Sites and Places Plan (Adopted November 2017)

A2.7. The Policies, Sites and Places Plan (PSPP) forms part of the South Gloucestershire Local Plan. This document updates and replaces the remaining saved policies of the previous South Gloucestershire Local Plan (adopted 2006).

A2.8. PSP2 – Landscape: Landscape Protection and Enhancement sets out a requirement for development proposals to conserve (and where appropriate, enhance) “*Landscape features, such as trees, hedgerows, woodlands*”.

A2.9. PSP3 – Trees and Woodland states that “*Development proposals should minimise the loss of existing vegetation on a site that is of importance in terms of ecological, recreational, historical or landscape value*”. The policy adds that “*Development proposals which would result in the loss of, or damage (directly or indirectly) to, existing mature or ancient woodland, veteran trees, ancient or species rich hedgerows will only be acceptable where the need for, and benefits of, the development in that location clearly outweigh the loss or damage*”.

A2.10. The policy states that “*Development proposals should, where appropriate, include:*

- *The protection of trees;*
- *Replacement trees, of an appropriate size and species, where tree loss or damage is essential to allow for development;*
- *Additional tree planting, in accordance with Core Strategy Policy CS1 and the SGLCA, including, but not limited to, planting along arterial roads, in car parks and in the public realm; and*
- *New planting schemes that retain and integrate healthy, mature trees and hedgerows, and include native species.”*

Supplementary Planning Document – Trees and Development Sites

A2.11. The SPD has been used as a guidance tool to steer the development proposal in terms of design, tree retention, protection and compensation via replacement tree planting. Where tree removal is proposed, the replacement standard has been adopted in accordance with the SPD.



Appendix 3: Tree Survey Methodology, Constraints Mapping and Report Limitations



Appendix 3: Tree Survey Methodology, Constraints Mapping and Report Limitations

Field Work

- A3.1. In accordance BS5837, the tree survey included all trees within / in influence of the site and the site boundaries that were over 75mm diameter at breast height (1.5m).
- A3.2. Measured topographical survey data (supplied by others) was used to inform tree locations their surrounding context. Any trees not identified on the topographical survey are prefixed with (*) and their locations have been approximated using measurements during the tree survey and further informed by aerial photography where required.
- A3.3. The trees surveyed were visually inspected from ground level only. No invasive investigations or climbing inspections were necessary to confirm visual or audible signs of defect or debility and no tissue or soil samples were undertaken. For further clarification please refer to the tree survey explanatory notes in below.

Tree Numbers

'T' prefixes have been used to identify individual trees and commence with 'T1'.

'G' prefixes have been used to identify groups of trees.

'H' prefixes have been used to identify hedgerows.

'W' prefixes have been used to identify woodlands.

Species

- A3.4. Species are listed by their common name, both in the schedule and in the report text.

Height and Stem Diameter

- A3.5. The stem diameter is measured at 1.5m above ground level and given in millimetres (mm). Tree heights are measured in metres (m) using a clinometer where access and land topography allowed. In instances where access to tree's stem and height measurements were not possible, the dimensions have been estimated by eye.

Crown Spread and Height of Crown Clearance

- A3.6. Radial crown spread is measured in metres and is listed for each of the four cardinal points where access has been possible to obtain a measurement. Where access was not possible to measure the spread of the canopy, such distances have been estimated by eye or informed by aerial photography.
- A3.7. The measured canopy shapes have been plotted on the Tree Constraints Plan at the four cardinal points. For groups of trees, the extent of the canopy has been measured as an average across the group and plotted using the topographical survey mapping. In some instances, Tyler Grange will use aerial photography to inform the canopy spread of larger tree groups and woodlands where topographical data is limited for such features.



A3.8. The distance between the ground level and the first significant branch or radial tree crown, whichever is the lower, has been measured in metres.



Age Class

The age of each tree is defined as follows:

Young - within the first third of reaching full maturity;

Semi-Mature - within the second third of reaching full maturity;

Early-Mature - within the last third of reaching full maturity;

Mature - specimen at full maturity; and

Veteran - tree that, by recognised criteria, shows 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.

Physiological and Structural Condition

A3.9. The physiological or structural condition of each tree is defined as either; good, fair, poor or dead. For each tree, where appropriate, notes on the structural integrity are provided on form, taper, forking habit, storm damage, decay, fungi, pests, etc.

A3.10. An assessment of a tree's physiological condition is defined as:

Good - fully functioning biological system showing expectant vitality for the species i.e. normal bud growth, leaf size, crown density and wound closure.

Fair - fully functioning biological system showing below average vitality i.e. reduced bud growth, smaller leaf size, lower crown density and reduced wound closure.

Poor - a biological system with limited functionality showing clear physiological decline, disease or significantly below average vitality i.e. limited bud growth, small and chlorotic leaves, low crown density and limited wound closure.

Dead - tree observed to fully dead with no living parts.

A3.11. An assessment of a tree's structural condition is defined as:

Good - no significant structural defects.

Fair - structural defects which could be alleviated through remedial tree surgery or arboricultural management practices.

Poor - structural defects which cannot be alleviated through tree surgery or arboricultural management practices.

Tree Quality Gradings

The value of trees has been assessed in accordance with the BS5837 Cascade Chart for Tree Quality Assessment (See Appendix 4). Grading subcategories (1, 2 and 3) reflect arboricultural, landscape and cultural values, respectively.



Root Protection Areas

- A3.12. The Tree Constraints Plan shows the approximate extent of Root Protection Areas (RPAs). The RPAs have been plotted and calculated in accordance with the methodology set out in Appendices C and D of BS5837, using the tree stem diameter dimensions obtained during the site visit.
- A3.13. Plotted RPAs serve as a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.
- A3.14. Where pre-existing site conditions or other factors indicate that rooting may occur asymmetrically, a polygon of equivalent area should be produced. Modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution observed on-site. Any deviation in the RPA from the original circular plot should take account of the following factors whilst still providing adequate protection for the root system:
- a) the morphology and disposition of the roots, when influenced by past or existing site conditions (e.g. the presence of roads, structures and underground apparatus);
 - b) topography and drainage;
 - c) the soil type and structure;
 - d) the likely tolerance of the tree to root disturbance or damage, based on factors such as species, age, condition and past management.
- A3.15. The plotted RPAs have therefore informed the design of the proposed development where possible. While developing within RPAs should be avoided, special working methods can be adopted to alleviate the RPA disturbance for cases where the development is considered necessary and unavoidable.

Tree Canopies and Shading

- A3.16. The distribution of tree canopy cover on and within influence of the site is illustrated on the TCP. Canopies have been plotted at cardinal points for individual and groups of trees. The Tree Survey Schedule included at Appendix 5 to the rear of this report lists the vertical clearance from site ground level to significant tree branching of individual trees. This measurement informs the impacts of accessibility and development beneath tree canopies.
- A3.17. The principal tree shadow constraints are shown on the TCP and have been plotted in accordance with BS5837 using the current height of surveyed trees. The indicative shade cast by existing surveyed trees signifies the area within which the amenity interests of shading, available daylight and the proximity of trees to any future site uses may be impacted upon should a tree be retained as part of development.
- A3.18. Where shading is unavoidable, the potential adverse impact of shadowing should also be reviewed on balance with the positive aspects of retaining a degree of canopy shade. BS5837:2012 (para. 5.3.4, a) NOTE 1) states that "shading can be desirable to reduce glare or excessive solar heating, or to provide comfort during hot weather. The combination of shading, wind



speed/turbulence reduction and evapotranspiration effects of trees can be utilised in conjunction with the design of buildings and spaces to provide local microclimatic benefits".

Limitations

- A3.19. The comments made are based on observable factors present at the time of inspection. Although the health and stability of trees in their current context is an integral part of their suitability for retention, it must be understood that this report is not a tree risk assessment and should not be construed as such. While every attempt has been made to provide a realistic and accurate assessment of the trees' condition at the time of inspection, it may have not been appropriate, or possible, to view all parts or all sides of every tree to fulfil the assessment criteria of a risk assessment.
- A3.20. No tree can be considered entirely safe, given the possibility that exceptionally strong winds could damage or uproot even a mechanically 'perfect' specimen. It is therefore usually accepted that hazards are only recognisable from distinct defects or from other failure-prone characteristics of the tree or the site. An assessment of the potential influence of trees upon existing buildings or other structures resulting from the effects of trees upon shrinkable load-bearing soils or the effects of incremental root or branch growth, are specifically excluded from this report.

Un-assessable Risks

- A3.21. Any alteration to the application site or development proposals could change the current circumstances and may invalidate this report and any recommendations made.
- A3.22. The Wildlife and Countryside Act (WCA) 1981 (as amended) makes it an offence to disturb nesting birds or recklessly endanger a bat or its roost. Bats are also a European protected species and are additionally protected under the Conservation (Habitats & c) Regulations 1994 and 2010 (as amended). The survey findings, constraints, opportunities and design or mitigation recommendations included within that report must be read alongside this document.
- A3.23. A lack of recommended work does not imply that a tree does not pose an unacceptable level of risk and likewise, it should not be implied that a tree will present an acceptable level of risk following the completion of any recommended work.



Appendix 4: Cascade Chart for Tree Quality Assessment



Appendix 4: Cascade Chart for Tree Quality Assessment

TREES FOR REMOVAL				
Category and Definition	Criteria			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 (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning).			DARK RED
	Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline.			
	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. (NOTE: Category U trees can have existing or potential conservation value which it might be desirable to preserve)			
TREES TO BE CONSIDERED FOR RETENTION				
Category and Definition	Criteria - Subcategories			Identification on Plan
	1. Mainly Arboricultural Values	2. Mainly Landscape Values	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 semi-formal 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 remedial 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 benefits.	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 temporary/transient landscape benefit.	Trees with no material conservation or other cultural value.	GREY



Appendix 5: Tree Survey Schedule



Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m ²)
				N	E	S	W								
T1	English Oak	14m	1250+	8.00	8.25	12.50	8.50	0.00	Mature	Fair	Fair	A1.2	Established within field boundary hedgerow aligning the northern site boundary. Forms a large main bole which forks into 2 x co-dominant stems at 1.5m. Upper canopy structure is typical for this species. Slightly sparse foliage density and above average epicormic growth. Aged-related deadwood throughout crown. Considered to be of high arboricultural quality and value.	15.0	707
T2	Ash	14m	450 x 2 400 300	7.00	6.50	8.00	5.00	6.50 (S)	Mature	Fair	Fair	B1.2	Established within field boundary hedgerow aligning the northern site boundary. Forms co-dominant stems from aged coppice stool. Heavy ivy clad in stems up to crown. Aged-related deadwood. Considered to be of moderate arboricultural quality and value.	9.7	295
T3	Ash	11m	350 x 3, 200	7.00	7.00	7.75	8.25	4.00 (S)	Mature	Poor	Fair	C1	Established within field boundary hedgerow aligning the northern site boundary. Forms co-dominant stems from aged coppice stool. Heavy ivy clad in stems up to crown. Aged-related deadwood. Sparsity in canopy showing early stages of ash die-back throughout foliage layer. Recommend heavy crown reduction / pollard to bring tree height into hedgerow layer leaving a habitat pole.	7.7	186
T4	Ash	10m	400 200 x 4 250	7.00	6.00	3.00	5.00	4.25 (W)	Mature	Fair	Fair	C1	Established within field boundary hedgerow aligning the eastern site boundary. Forms co-dominant stems from aged coppice stool. Upper canopy has a structure typical for the species. Dead ivy on stem. Sparsity in canopy showing early stages of ash die-back throughout foliage layer.	7.1	158
T5	Ash	11m	300 x 2 350 700	5.00	9.00	7.75	8.50 (SW) 5 (W)	4.50 (W)	Mature	Fair	Fair	C1	Established within field boundary hedgerow aligning the eastern site boundary. Forms co-dominant stems from aged coppice stool. Previously pruned lower crown to west back from site. 1no. limb to south -west creates in imbalanced crown distribution. Sparsity in canopy showing early stages of ash die-back throughout foliage layer.	10.7	359

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m ²)
				N	E	S	W								
T6	Ash	8m	300 250 200 x 2	6.00	4.00	5.00	5.25	4.50 (W)	Mature	Poor	Fair	U	Established within field boundary hedgerow aligning the eastern site boundary. Forms co-dominant stems from aged coppice stool. Sparse canopy with high proportion of die-back. Crown lifted to west over edge of field boundary. Recommend removal due to poor condition as part of development.	N/a	N/a
T7	Ash	13m	350	7.00	4.00	4.00	8.00	7.00 (N)	Early Mature	Fair	Fair	B2	Limited access to survey due to location behind buildings. Established within field boundary hedgerow aligning the southern site boundary. Forms part of trees cover along hedgerow. Considered to be of moderate arboricultural value.	4.2	55
T8	Ash	11m	425 300 x 3	6.50	6.00	7.00	6.00	4.00 (E)	Mature	Fair	Fair	C1	Established within field boundary hedgerow aligning the western site boundary. Appears to form co-dominant stems from aged coppice stool. Heavy ivy growth in stem up to crown. Spreading habit with aged-related deadwood. More advanced stages of ash dieback in crown reducing future potential.	8.1	206
T9	Ash	13m	400 450 200	6.00	7.25	6.00	8.00	1.00 (tips) 3.25 (limbs to E)	Mature	Fair	Fair	B1.2	Established within field boundary hedgerow aligning the western site boundary. Forms 2 x co-dominant stems from coppice stool. Upper canopy has a structure typical for species with aged-related deadwood. Spreading habit in lower canopy into site.	7.6	181
T10	Ash	12m	500 x 2	7.00	2.50	5.00	7.00	6.00 (E)	Mature	Fair	Fair	C1.2	Established within field boundary hedgerow aligning the western site boundary. Heavily pruned western side canopy away from telephone wires - resulting in poor overall form.	8.5	227
T11	Ash	13m	800 x 2	7.00	10.50	8.00	6.00	1.75 (tips) 4.00 (limb E)	Mature	Fair	Fair	B1.2	Established within field boundary hedgerow aligning the western site boundary. 2 x co-dominant stems forming from coppice stool. Ivy growth in stems up to crown. Spreading habit with age-related deadwood. Potential tip-loading issue with limb to east. Considered to be of moderate arboricultural quality and value.	13.6	581
T12	Pear	7m	275	1.00	2.00	3.00	2.00	1.50	Mature	Poor	Poor	C1.2	Former orchard tree. Limited live crown remaining and poor form.	3.3	34

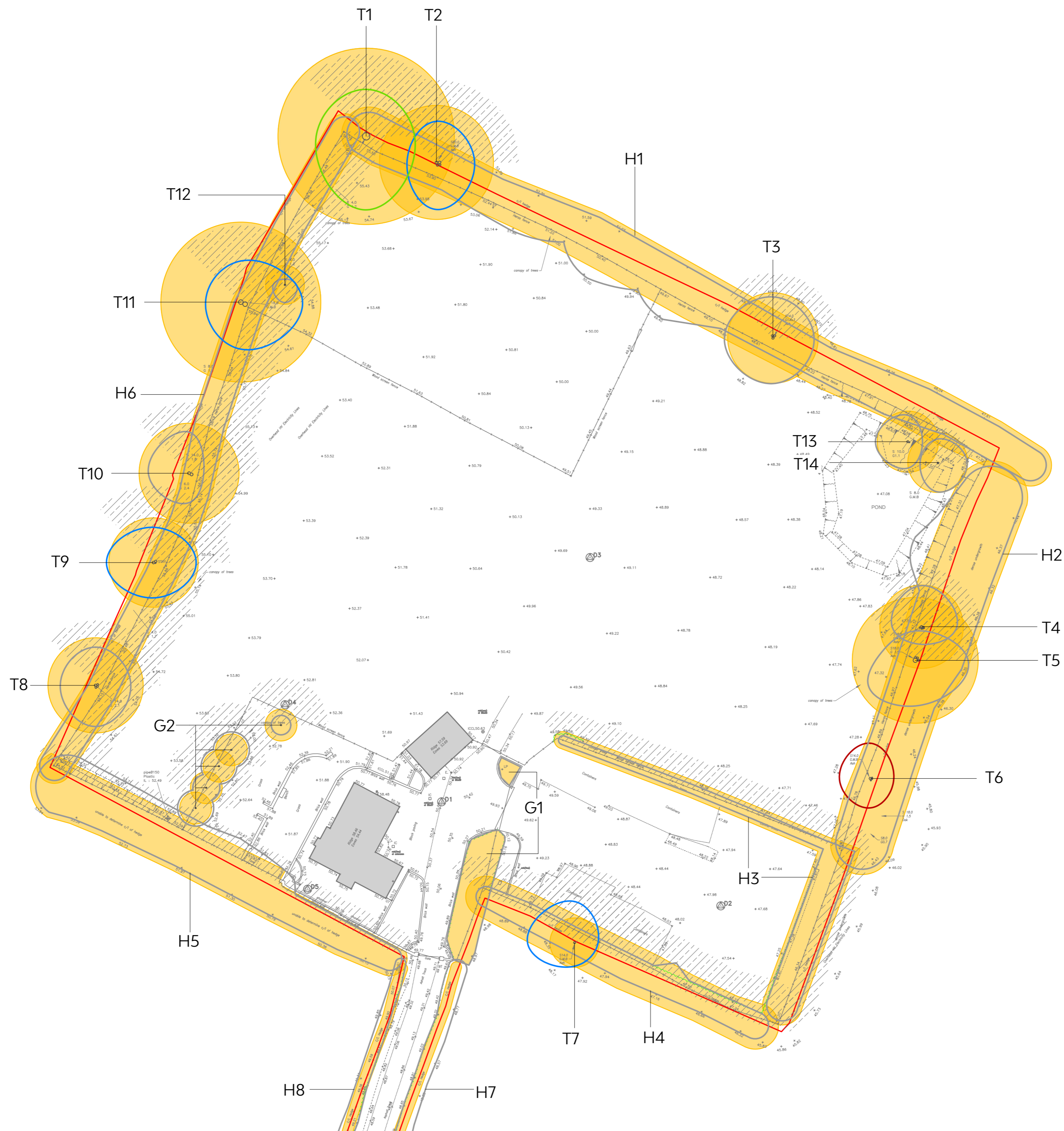
Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m ²)
				N	E	S	W								
T13	English Oak	8m	390 190	4.50	2.50	4.50	5.50	1.00	Early Mature	Fair	Fair	C2	Ornamentally planted at edge of made-made dry pond feature. Heavily suppressed to north-east by T15. Above average epicormic growth for age. Limited visual amenity merit.	5.2	85
T14	Goat Willow	6m	250 200 x 3	4.00	5.00	5.00	3.00	0.50	Early Mature	Fair	Fair	C2	Ornamentally planted at edge of man-made dry pond feature.	5.1	82
T15	English Oak	13m	1000	7.00	8.50	7.00	5.50	3.25 (to tips to E) 4.5m to first secondary limb at 70mm diameter to E 4.75m to smaller secondary limb to E	Mature	Good	Good	A1.2	Established within field boundary hedgerow aligning access track. Forms single large stem with a well-distributed canopy. Good example of the species at full maturity. Access track to east likely to affect distribution of tree roots. Considered to be of high arboricultural quality and value.	12.0	452
T16	English Oak	9m	550 400 x 2	6.00	7.00	7.00	6.75	2.5 (tips to W) 5.00 (S) 5.50 to limbs at below 50mm diameter (W)	Mature	Good	Fair	B2	Established within field boundary hedgerow aligning the access track / Hambrook Lane. Form co-dominant stems form the base of the tree with one large co-dominant stem previously removed / failed now a now section at base level. Located on raised hedgerow bank c.1.75m above level of access road / Hambrook Lane. Level change and surrounding hard-surfacing likely to affect the distribution of tree roots to the south, south-west. Considered to be of moderate arboricultural value.	9.5	283
T17	English Oak	7m	300	4.00	3.00	3.00	5.00	4.00 (S)	Early Mature	Fair	Fair	B2	Established within field boundary hedgerow, slightly stunted form, mutually suppressed canopy with T18.	3.6	41
T18	Ash	8m	400	4.50	4.50	3.00	2.75	4.00 (S)	Mature	Fair	Fair	B2	Established within field boundary hedgerow, slightly stunted form, mutually suppressed canopy with T18.	4.8	72
T19	Elm	6m	150		2.75			3.50	Young	Dead	Dead	U	Standing Dead elm from Dutch elm disease	1.8	10
T20	English Oak	12m	200 x 3 150	4.00	3.00	6.50	4.50	3.75	Semi Mature	Good	Fair	B2	Located in roadside hedgerow, multi stemmed from base, mutually suppressed to E from now removed section of hedgerow. Footpath and road directly east.	4.5	64

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m ²)
				N	E	S	W								
G1	Laurel, Silver Birch, Eucalyptus, Leyaldn Cypress, Corkscrew Willow, Whitebeam	1m - 6m	300 (max)		3.00 (av)			-	Early Mature	Fair	Fair	C1.2	Mixed soft-landscaping. Includes small-stature ornamental shrubs / trees.	3.6	n/a
G2	Silver Birch x 4 Elm x 1	8m (av.)	225 (max)		3.00 (av.)			0.50	Early Mature	Poor to Good	Fair to Good	C1.2	Established ornamental planting located at boundary of residential garden. Elm in poor condition.	2.7	n/a
H1	Hawthorn, Elm, Blackthorn, Apple	6m (av.)	200 (max)		3.00 (av.)			2.00 (av.)	Mature	Poor to Fair	Poor to Fair	C1.2	Field boundary hedgerow aligning northern site boundary. Unmaintained appearance / structure. Predominantly comprises Hawthorn with semi-mature elm emergent stock. Number of trees noted to be in poor condition / degraded state. Whip planting throughout to re-stock at site edge.	2.4	n/a
H2	Hawthorn, Dogwood, Plum, Blackthorn, Field Maple, Hazel	6m (av.)	250 (max)		3.00 (av.)			2.00 (av.)	Mature	Poor to Fair	Poor to Fair	C1.2	Field boundary hedgerow aligning eastern site boundary. Unmaintained appearance / structure. Predominantly comprises Hawthorn with semi-mature elm emergent stock. Number of trees noted to be in poor condition / degraded state. Whip planting throughout to re-stock at site edge.	3.0	n/a
H3	Leyland Cypress and Western Red Cedar	5m (av.)	120		0.75			0.00	Early Mature	Good	Fair	C1.2	Ornamental hedgerow planted for screening of yard. 'Topped' in height. Extends into site from eastern boundary.	1.4	n/a
H4	Blackthorn, Elm, Field Maple	7m (av.)	200 (max.)		3.00 (av.)			1.25 (av.)	Mature	Fair	Fair	C1.2	Field boundary hedgerow aligning southern site boundary. Hedgerow structure up to 3.5m with self-seeded elm extending to 8m. Unmaintained appearance.	2.4	n/a
H5	Field Maple, Blackthorn, Hawthorn	4m (av.)	150 (max)		2.50 (av.)			1.75 av.	Mature	Fair	Fair	C1.2	Field boundary hedgerow aligning southern site boundary. Unmaintained appearance / structure.	1.8	n/a
H6	Elm, Blackthorn, Hawthorn, Dogwood	8m (av.)	250 (av.)		2.50 (av.)			1.75 av.	Mature	Fair	Fair	C1.2	Field boundary hedgerow aligning western site boundary. Unmaintained appearance / structure with heavy ivy growth throughout.	3.0	n/a
H7	Field Maple, Dogwood, Hawthorn, Elm, Hazel	3m	75 (max)		1.25 (2.5m wide)			0.00	Mature	Good	Good	C1.2	Field boundary hedgerow aligning access track. Maintained at track side, off-site field edge currently unmaintained.	.9	n/a
H8	Field Maple, Dogwood, Hawthorn, Elm, Hazel	3m	75 (max)		1.25 (2.5m wide)			0.00	Mature	Good	Good	C1.2	Field boundary hedgerow aligning access track. Maintained at track side, off-site field edge currently unmaintained.	.9	n/a

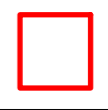


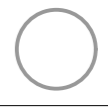
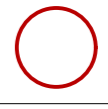


Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m ²)
				N	E	S	W								
H9	Elm, Hawthorn, Hazel	4m (av.)	75 (max)	1.25 (2.5m wide)				0.00	Mature	Fair	Fair	C1.2	Field boundary hedgerow aligning Hambrook Lane. Currently unmaintained at tops. Sides flailed back to due poor visibility from site entrance.	.9	n/a
H10	Hawthorn, Elm, English Oak	2m to 5m	200 (av.)	2.00 (av.)				2.00 (av.)	Mature	Fair	Fair	C1.2	Field boundary hedgerow aligning southern side of Hambrook Lane. Partly maintained, lower canopies flailed back away from footpath with canopies unmaintained at the top of the hedge.	2.5	n/a

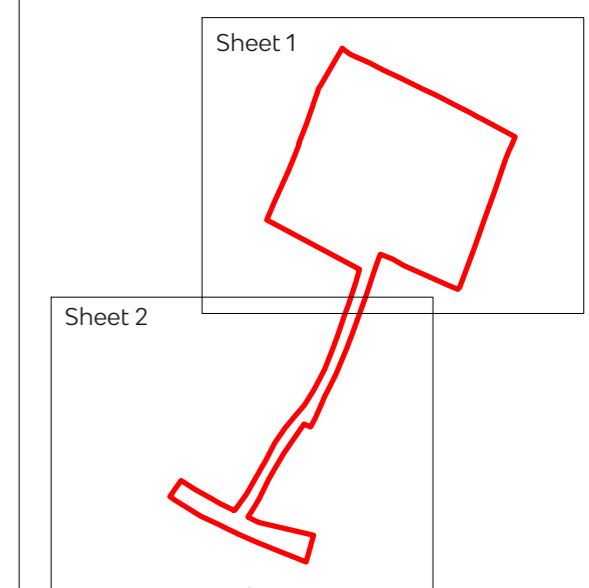
Plan 1: Tree Constraints Plan





Key:

-  Site Boundary
-  Category A - Trees of High Quality and Value
-  Category B - Trees of Moderate Quality and Value
-  Category C - Trees of Low Quality and Value
-  Category U - Trees in Poor Condition
-  Approximate Extent of BS5837 Calculated Root Protection Areas (RPAs)
-  BS 5837 Calculated Tree Shadow Constraints



Project Name
Land at Hoodlands Farm, Harry Stoke

Drawing Title
Tree Constraints Plan

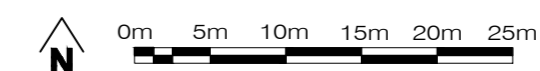


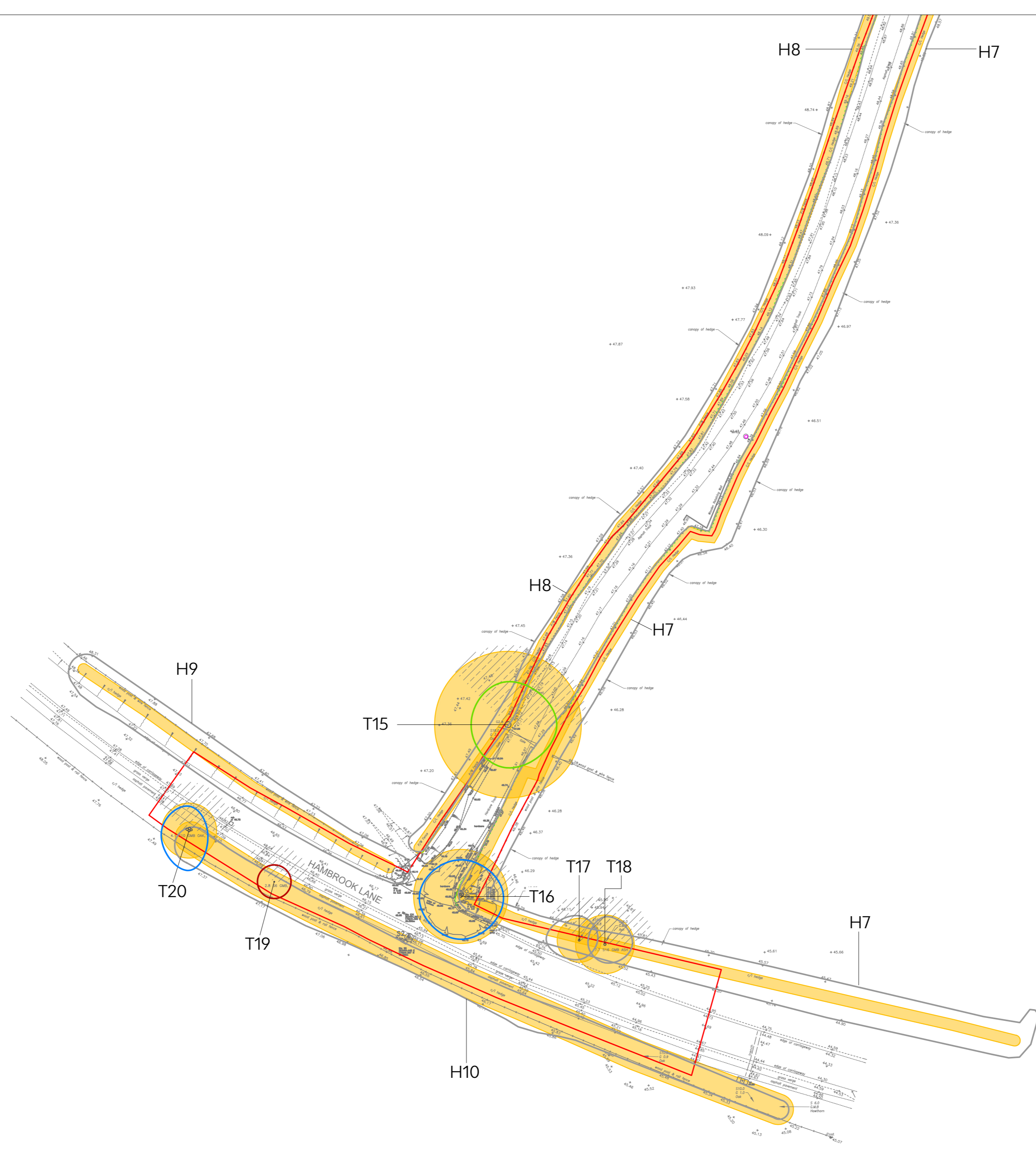
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






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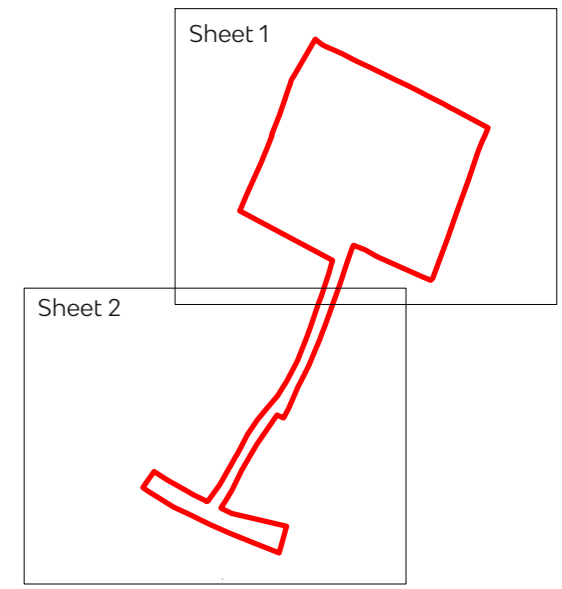
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- Key:
-  Site Boundary
 -  Category A - Trees of High Quality and Value
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 -  Approximate Extent of BS5837 Calculated Root Protection Areas (RPAs)
 -  BS 5837 Calculated Tree Shadow Constraints



Project Name
Land at Hoodlands Farm, Harry Stoke

Drawing Title
Tree Constraints Plan

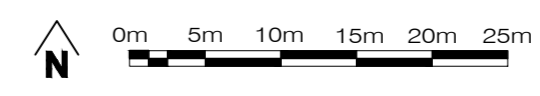


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Plan 2: Tree Retention and Removal Plan



TREE / HEDGEROW REMOVAL AND PRUNING WORKS:

Required tree and hedgerow removals are denoted by a dashed tree canopy outline on the Tree Retention and Removal Plan. Pruning and trimming works are denoted by a pink dashed tree canopy line.

To avoid erroneous tree works, the appointed tree constructor will be briefed by an appropriately qualified arboricultural consultant on-site. This will include spray marking of tree removals and the marking out of sections of hedgerow to be removed.

Tree removal and pruning works must be carried out prior to the installation of tree protection barriers. Tree works must be undertaken in accordance with BS3998:2010 by a competent tree contractor and should avoid the main nesting season for birds between 1st March and 31st August each year. If such timescales are unachievable, the advice of an ecologist will need to be sought to determine any further necessary protective and precautionary working measures to avoid disturbance to nesting birds and other wildlife.

Tree Removal Works:

Trees to be removed will be limited to trees T6, T13, T14, T19 and groups G1 and G2. Remaining stumps from felled trees must be carefully ground out as opposed to pulled out with a machine. This is required to avoid disturbance within the rooting environment of retained trees and hedgerows.

Tree Pruning Works:

Tree T3 will be heavily pollarded / crown reduced to a height of 5-6m to tie into the height of the hedgerow. The tree has ash die back and therefore must be dismantled using a MEWP and not climbed.

Tree T15 and T16 will be crown lifted to provide a total clearance of 5.75m over the access track and Hambrook Lane. This is to facilitate delivery of modular homes on to the site. The pruning works must be completed by the construction of the new road or any road level increase works. The pruning works must be kept to a minimum and not include removal of any primary limbs.

Hedgerow Works:

Hedgerow H3 will be removed in its entirety. Partial sections of hedgerows H1, H2, H5, H6, H7 and H10 will be removed as shown on the Tree Retention and Removal Plan.

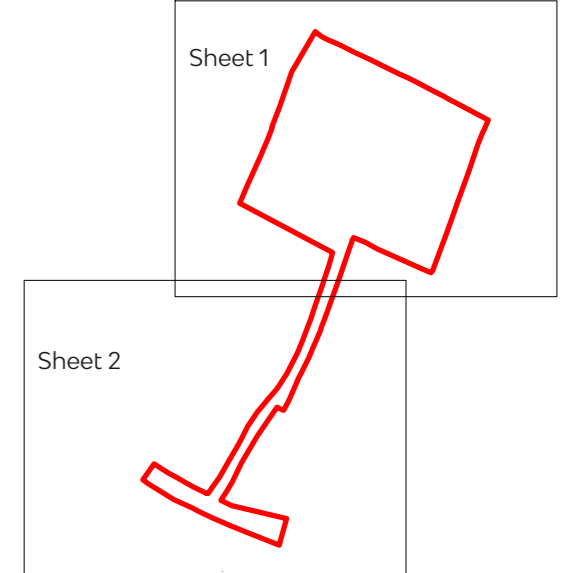
The upper canopy parts of hedgerows H1, H2, H4 and H5 will be pruned back to tie in with the width of the lower parts of the hedgerows to improve its structure as shown on the Tree Retention and Removal Plan. The heights will also be reduced to 5m.

The sides of hedgerows H7, H9 and H10 will be trimmed back in selected areas as shown on the Tree Retention and Removal Plan to accommodate the new footpaths.



Key:

- Site Boundary
- Category A Trees Retained
- Category B Trees Retained
- Category C Trees and Hedgerows Retained
- Category U Trees Removed
- Category C Trees and Hedgerow Removed
- Tree and Hedgerow Pruning Works
- BS 5837 Calculated Tree Shadow Constraints



Project Name
Land at Hoodlands Farm, Harry Stoke

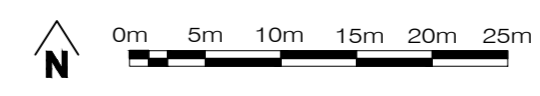
Drawing Title
Tree Retention and Removal Plan

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TREE / HEDGEROW REMOVAL AND PRUNING WORKS:

Required tree and hedgerow removals are denoted by a dashed tree canopy outline on the Tree Retention and Removal Plan. Pruning and trimming works are denoted by a pink dashed tree canopy line.

To avoid erroneous tree works, the appointed tree contractor will be briefed by an appropriately qualified arboricultural consultant on-site. This will include spray marking of tree removals and the marking out of sections of hedgerow to be removed.

Tree removal and pruning works must be carried out prior to the installation of tree protection barriers. Tree works must be undertaken in accordance with BS3998:2010 by a competent tree contractor and should avoid the main nesting season for birds between 1st March and 31st August each year. If such timescales are unachievable, the advice of an ecologist will need to be sought to determine any further necessary protective and precautionary working measures to avoid disturbance to nesting birds and other wildlife.

Tree Removal Works:

Trees to be removed will be limited to trees T6, T13, T14, T19 and groups G1 and G2. Remaining stumps from felled trees must be carefully ground out as opposed to pulled out with a machine. This is required to avoid disturbance within the rooting environment of retained trees and hedgerows.

Tree Pruning Works:

Tree T3 will be heavily pollarded / crown reduced to a height of 5-6m to tie into the height of the hedgerow. The tree has ash die back and therefore must be dismantled using a MEWP and not climbed.

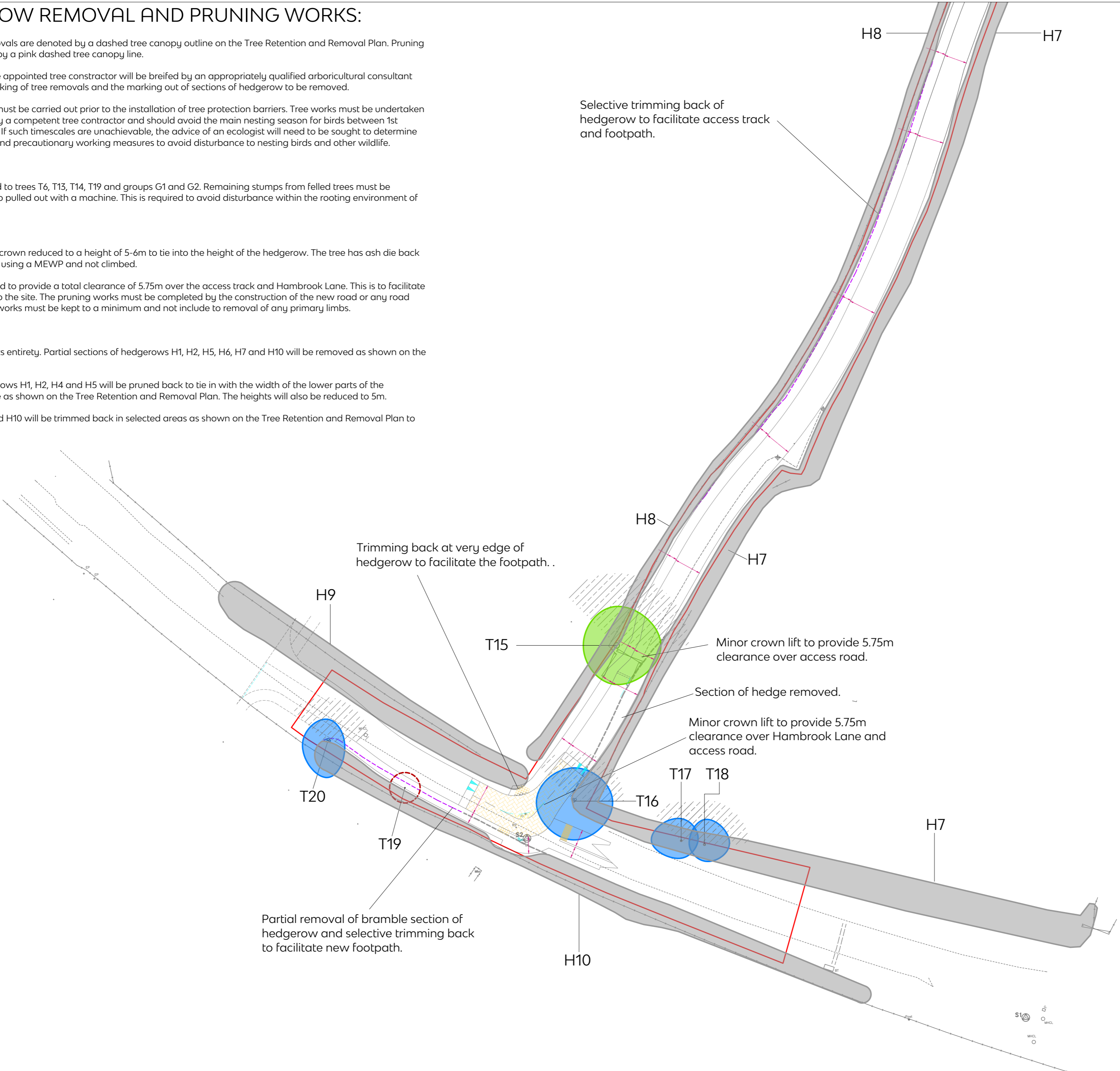
Tree T15 and T16 will be crown lifted to provide a total clearance of 5.75m over the access track and Hambrook Lane. This is to facilitate to delivery of modular homes on to the site. The pruning works must be completed by the construction of the new road or any road level increase works. The pruning works must be kept to a minimum and not include to removal of any primary limbs.

Hedgerow Works:

Hedgerow H3 will be removed in its entirety. Partial sections of hedgerows H1, H2, H5, H6, H7 and H10 will be removed as shown on the Tree Retention and Removal Plan.

The upper canopy parts of hedgerows H1, H2, H4 and H5 will be pruned back to tie in with the width of the lower parts of the hedgerows to improve its structure as shown on the Tree Retention and Removal Plan. The heights will also be reduced to 5m.

The sides of hedgerows H7, H9 and H10 will be trimmed back in selected areas as shown on the Tree Retention and Removal Plan to accommodate the new footpaths.



Selective trimming back of hedgerow to facilitate access track and footpath.

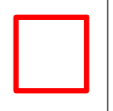
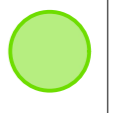
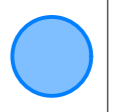
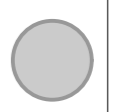
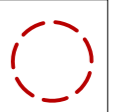



Trimming back at very edge of hedgerow to facilitate the footpath.

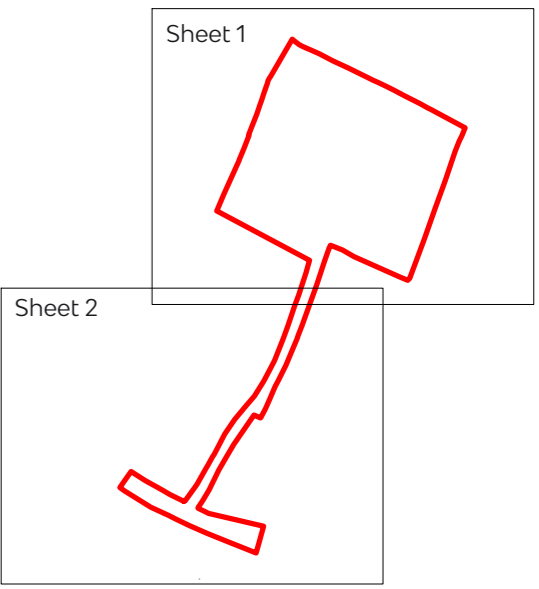
Minor crown lift to provide 5.75m clearance over access road.

Minor crown lift to provide 5.75m clearance over Hambrook Lane and access road.

Partial removal of bramble section of hedgerow and selective trimming back to facilitate new footpath.

Key:

-  Site Boundary
-  Category A Trees Retained
-  Category B Trees Retained
-  Category C Trees and Hedgerows Retained
-  Category U Trees Removed
-  Category C Trees and Hedgerow Removed
-  Tree and Hedgerow Pruning Works
-  BS 5837 Calculated Tree Shadow Constraints



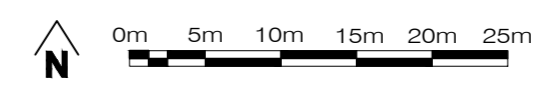
Project Name	Land at Hoodlands Farm, Harry Stoke
Drawing Title	Tree Retention and Removal Plan



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Scale	1:500 @ A2	Date	July 2021
Drawn by	JP	Checked by	JJ
Drawing No.	11857/P04	Revision	A

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Plan 3: Tree Protection Plan



ARBORICULTURAL METHOD STATEMENT

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ARBORICULTURAL SITE MONITORING:

This is requirement for arboricultural monitoring by a qualified arboricultural consultant. This must include site supervision during key arboricultural work stages as set-out below. It is the responsibility of the appointed site contractor to arrange site meetings and monitoring works undertaken by an appointed arboricultural consultant.

- Tree and hedgerow works as shown on the Tree Retention and Removal Plan.
- Installation of tree protection barriers.
- Works within Root Protection Area (RPAs) as shown on the Tree Protection Plan.

TREE PROTECTION BARRIERS:

Tree protection barriers will be in place before the arrival of plant and commencement of groundworks. The barriers will serve to prohibit any access into the Root Protection Areas, and unless otherwise stated in this AMS, tree protection barriers will remain in place for the duration of site preparation and construction work until it is deemed completed. The fencing will consist of the default specification recommended within BS5837:2012 (See Figure A). This comprises a scaffold framework, well braced to resist impacts, with vertical tubes spaced at a maximum of 3m to add further stability. Onto this, weldmesh panels will be securely fixed with wire or scaffold clamps. Appropriate signage will also be secured on to heros panels. Special attention is essential to maintain the protective barriers during the demolition and construction, ensuring that it remains rigid and complete as well as fit for the purpose intended. Repairs shall be made immediately where required.

Temporary repositioning of tree protection fencing will be required to access construction works within the RPAs of T1, T2, T4 and T5. The repositioning of barriers must only take place once the works are imminent and under the guidance of an appropriately qualified arboricultural consultant. Following completion of the works within the RPAs, the barriers will be placed by to their original position. Barriers do not need to be repositioned back to their original location following the completion of hard surfacing / building / landscaping work within the RPA. In this instance, the barriers must be sited to protect any exposed and unsurfaced parts of the RPA that is a risk of harm from construction activity.

TEMPORARY GROUND PROTECTION WITHIN RPAs:

- Ground protection will be used where tree protection barriers require relocating (exposing RPA) and where barriers are impractical to install such as prohibiting sufficient and safe working room to facilitate construction works (See Figure B)
- Ground protection will comprise of inter-linked scaffold boards placed on top of a compression-resistant layer consisting of 150 mm depth of woodchip laid onto a geotextile membrane. Alternatively, the implementation of load bearing tramatoms can provide a gripped and lightweight ground protection solution to safeguard the rooting environment of trees.
- In all cases, the objective should be to avoid compaction of the soil in this area (which can arise from pedestrians and passage of a plant / machinery) so that tree root functions remain unimpaired.

GROUNDWORKS WITHIN RPAs:

Groundworks (cut and fill) implemented within the RPAs T1, T2, T3, T4, T11 as shown on the Tree Protection Plan. The excavation works must be completed sensitively within the RPAs and be carried out in accordance with the following protective measures in accordance with BS5837:2012:

- All works must be carried out under direct supervision of an appropriately qualified Arboriculturist;
- Excavation within the RPAs will be carried out using hand-held tools or by compressed air displacement;
- A light weight machine will only be used where practical and at the discretion of the supervising Arboriculturist (typically for the displacement hard surfacing and imbedded rocks/jumble);
- Single roots smaller than 25mm will be cleanly pruned back using a suitable sharp hand tool;
- For trench excavations, roots will be retained by spanning the trench with services fed beneath;
- Roots found over 25mm and where occurring as clumps will be not be immediately pruned back, the appointed supervising Arboriculturist will record the size and nature of the root, determine its significance to tree health, and specify proceedings accordingly;
- Exposed roots will be covered with top soil or a hessian sack to avoid root desiccation;
- Exposed roots to be retained as part of the construction will be supported by sharp sand;
- Due to the highly alkaline leachate produced during the curing of wet concrete, concrete should not be poured within the RPA unless an impermeable liner has been installed. Holes must therefore be sheathed to reduce the risk of contamination where concrete is to be implemented.

SERVICES WITHIN RPAs:

Services and utilities connecting the site to Hambrook Lane must be thrust bored / micro drilled beneath to the rooting system of tree T15 and manually excavated for tree T16 in accordance with the approved engineering details. The depth of the bore beneath the rooting system of tree T15 will be determined via site investigations (such as root radar) and is likely to be in region of 2m deep. A drainage run located within the RPA of tree T4 will be excavated sensitively in accordance with the protective measures detailed above.

NO DIG SURFACING WITHIN RPAs:

Tree T15:
The existing track surface will be replaced with a new highway and footpath. This must be constructed above-soil using a reduced-dig solution in accordance with the approved access cross-sections and subsequent detailed manufacturers specification. The existing track top surface layer will be removed under arboricultural supervision to form a suitable level based layer and to avoid damage to tree roots potentially present in the sub-base layers. Kerb edging must be undertaken by hand under arboricultural supervision to avoid damage to roots potentially present in this area. Construction will need to be undertaken by hand and with care not to damage the adjacent canopies or to disrupt the ground condition within the surrounding RPA.

Tree T16:
The existing track surface will be replaced with a new highway and footpath. This must be constructed above-soil using a reduced-dig solution in accordance with the approved access cross-sections and subsequent detailed manufacturers specification. The existing top surface layer will be removed under arboricultural supervision to form a suitable level based layer and to avoid damage to tree roots potentially present in the sub-base layers. Kerb edging must be undertaken by hand under arboricultural supervision to avoid damage to roots potentially present in this area. Where the road incurs within the bank this will require manual excavation under arboricultural supervision.

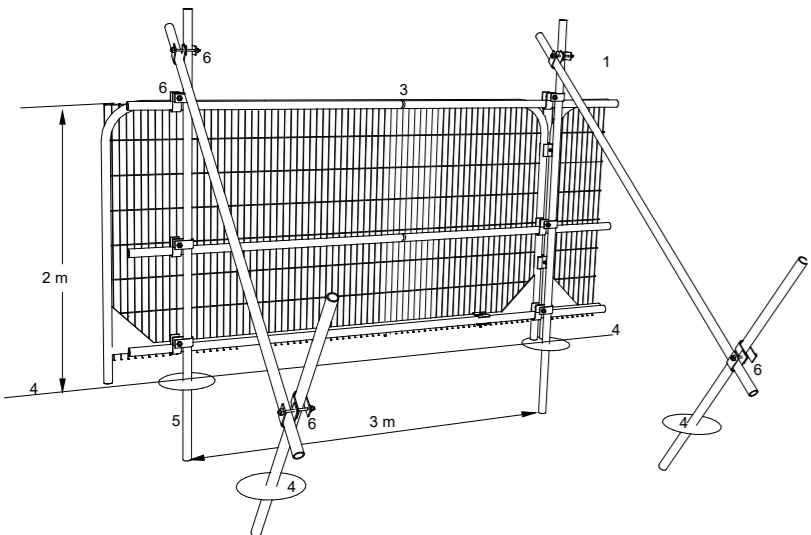
Tree T20:
Minor excavation is required within the RPAs of T20 to facilitate the footpath construction. Excavation in this area will adopt the same procedures for groundwork in RPAs as detailed above, using hand-tools and avoiding damage to tree roots where possible.

NEW LANDSCAPING WITHIN RPAs:

New landscaping will be formed within the boundary RPAs including new garden spaces as shown on the Tree Protection Plan. New landscaping will adopt the following procedures for tree protection:

- Tree protection fencing to be removed to facilitate access into the landscaping zones under the guidance of an arboricultural consultant. The fencing is only to be removed once the built form construction and plant movement around the tree is completed.
- Top surface layer of soil to be carefully removed to facilitate top soiling under arboricultural supervision.
- Heavy mechanical cultivation such as ploughing or rotavation will not occur within the RPA.
- Any cultivation operations should be undertaken carefully by hand in order to minimize damage to the tree, particularly the roots.
- Decomposition measures include forking, spiking, soil augering and tilled radial trenching. Care should be taken during such operations to minimize the risk of further damage to tree roots.
- Digging of fence post holes shall be completed by hand. No parts of any fencing shall be nailed or otherwise attached to any parts of the retained trees.

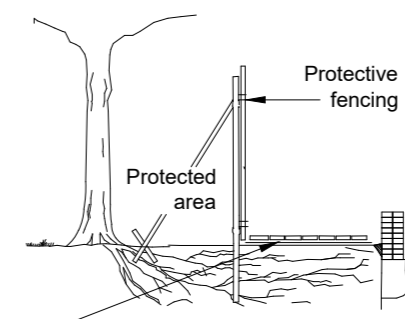
FIGURE A: TREE PROTECTION FENCING



- 1 Standard scaffold poles
- 2 2m tall galvanized tube and weld mesh infill panels
- 3 Panels secured to uprights and cross-members with wire ties
- 4 Existing ground level
- 5 Uprights driven into the ground until secure (minimum depth 0.6m)
- 6 Scaffold clamps

Examples of alternative barrier designs can be found in the method statement. Should an alternative design be more viable and appropriate, it must be agreed with the project arboriculturist before its implementation.

FIGURE B: TREE PROTECTION FENCING / GROUND PROTECTION



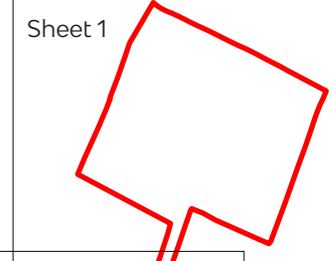
Ground undisturbed and protected by additional level of scaffold boards mounted 150mm above ground level

For pedestrian movements the installation of ground protection as shown will suffice. For further details see BS5837:2012 Section 6



Key:

- Site Boundary
- Category A Trees Retained
- Category B Trees Retained
- Category C Trees and Hedgerows Retained
- Root Protection Areas
- Tree Protection Fencing (See AMS)
- Works with RPAs (See AMS)
- No-dig Surfacing with RPAs (See AMS)
- Landscaping Works within RPAs (See AMS)



Project Name
Land at Hoodlands Farm, Harry Stoke

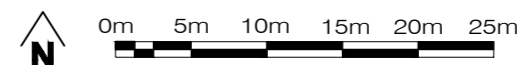
Drawing Title
Tree Protection Plan



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Scale 1:500 @ A2	Date July 2021
Drawn by JP	Checked by JJ
Drawing No. 11857/P04	Revision A

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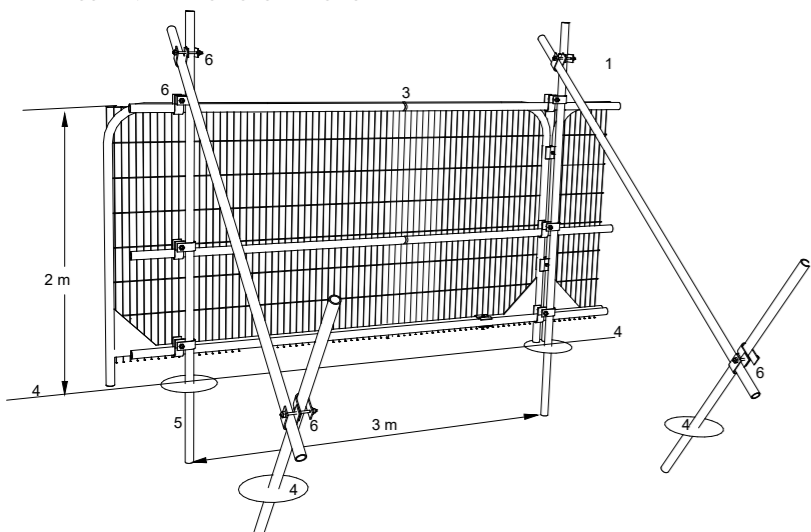
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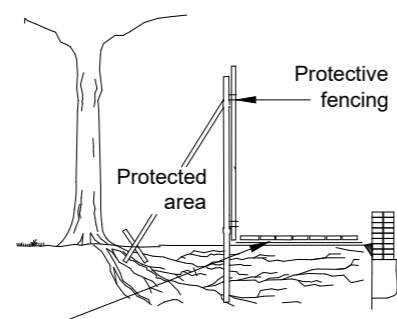
FIGURE A: TREE PROTECTION FENCING



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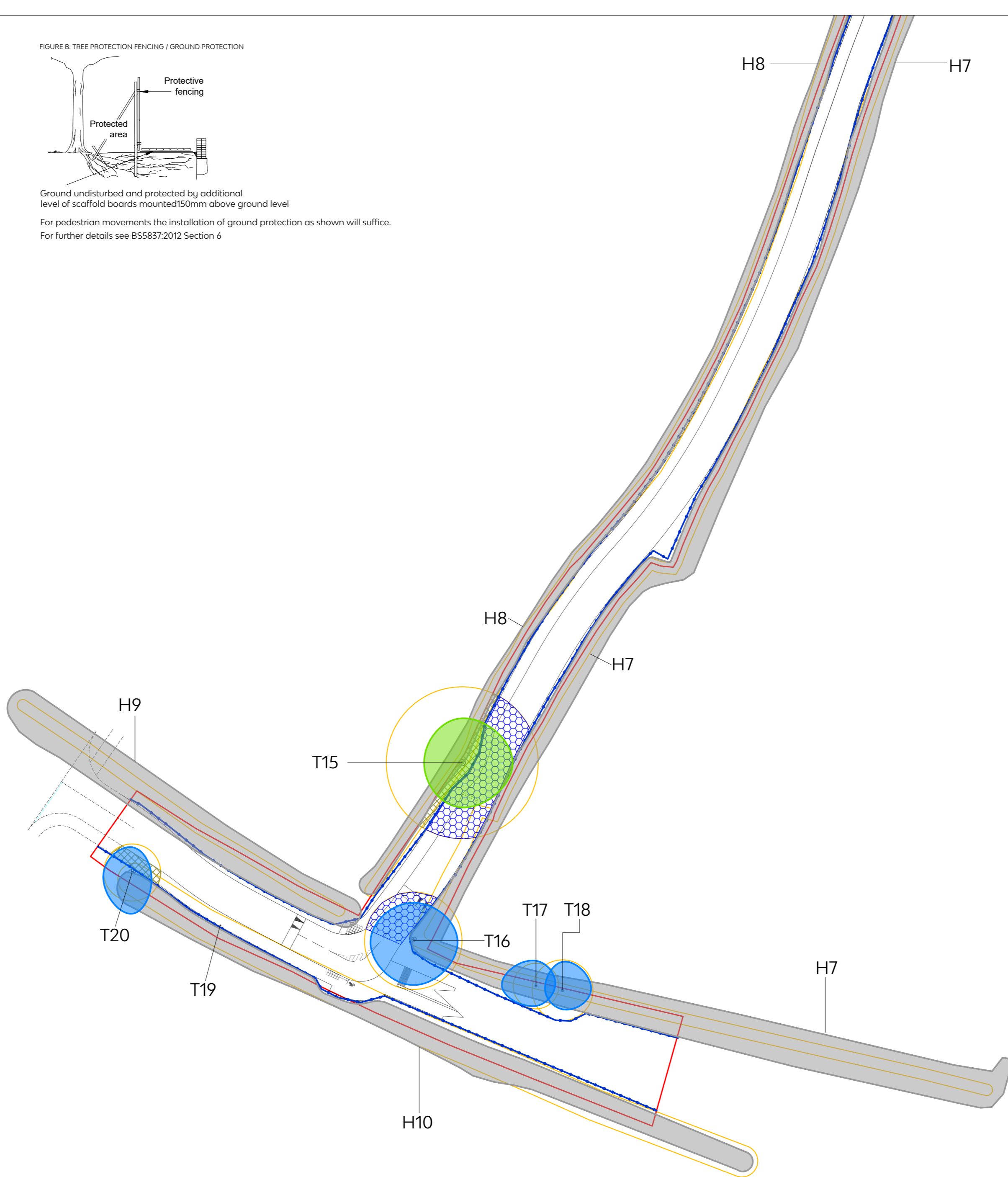
FIGURE B: TREE PROTECTION FENCING / GROUND PROTECTION



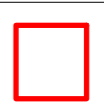




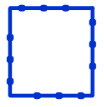
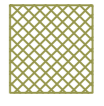
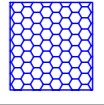
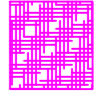
Ground undisturbed and protected by additional level of scaffold boards mounted 150mm above ground level

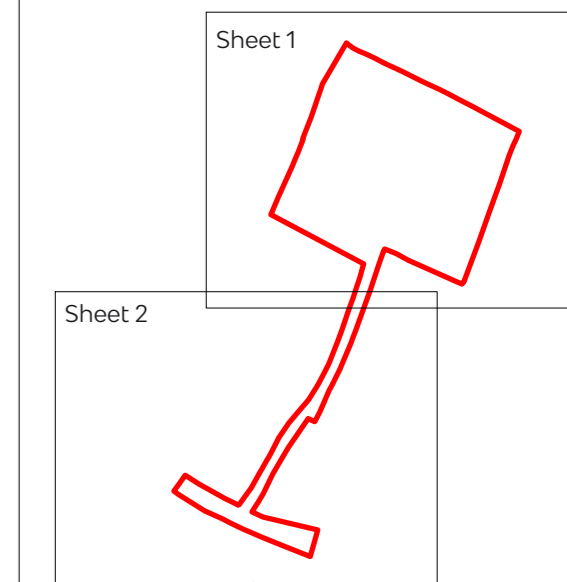
For pedestrian movements the installation of ground protection as shown will suffice.

For further details see BS5837:2012 Section 6



Key:

-  Site Boundary
-  Category A Trees Retained
-  Category B Trees Retained
-  Category C Trees and Hedgerows Retained
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Project Name
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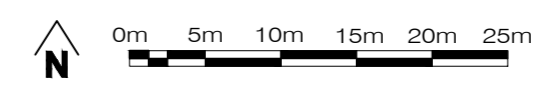
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