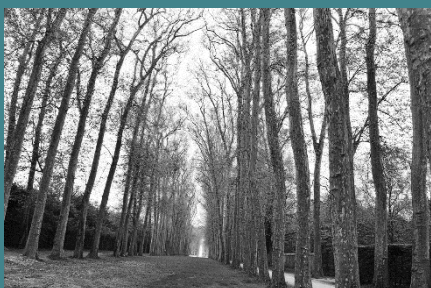


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ARBORICULTURAL ASSESSMENT

Client

Bellway Homes (North West)

Project

**Cronton,
Knowsley**

Date

December 2025

CONTENTS

1.0	INTRODUCTION	1
2.0	PLANNING POLICY	2
3.0	SURVEY METHODOLOGY	4
4.0	RESULTS	8
5.0	ARBORICULTURAL IMPACT ASSESSMENT	11
6.0	NEW TREE AND HEDGEROW PLANTING	14
7.0	TREE PROTECTION MEASURES	15
8.0	TREE MANAGEMENT	17

TABLES

Table 1: Summary of Trees by Retention Category

FIGURES

Figure 1: The chart of girth in relation to age and development classification of trees

PLANS

Tree Survey Plan (13294-T-01)

Tree Retention Plan (13294-T-02)

Tree Retention Plan – Access (13294-T-03)

APPENDICES

Appendix A: Tree Schedule

Appendix B: Protective Fencing Specifications

Rev	Issue Status	Prepared/Date	Approved/Date
-	Draft	EC/26/11/25	HCK/27/11/25
-	Final	EC/01/12/25	HCK/01/12/25
A	Final	EC/10/12/25	HCK/10/12/25

1.0 INTRODUCTION

- 1.1 This report has been prepared by FPCR Environment and Design Limited on behalf of Bellway Homes (North West) to present the findings of an Arboricultural Assessment and survey of trees located at Cronton, Knowsley (hereafter referred to as the site), OS Grid Ref SJ 490 883.

Site Description

- 1.2 The site consists of agricultural field parcels to the west of the village of Cronton, within the southeast of the Knowsley district. The site abuts Cronton Road on its southern boundary, properties on Wheatfield Road and Houghton Court forms the site's eastern boundary. A small watercourse separated the site from further agricultural land to the north with further agricultural land and the rear garden of a single property on Cronton Road to the west.

Scope of Assessment

- 1.3 A tree survey and assessment of existing trees was carried out by FPCR Environment and Design on **15th April 2025** in accordance with guidance contained within British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendations' (hereafter referred to as BS5837).
- 1.4 This report has been produced to accompany an outline planning application for up to 120 dwellings with all matters reserved except for access.
- 1.5 The purpose of this report is therefore to firstly, present the results of this assessment of the existing trees' arboricultural value, based on their current condition and quality and to secondly, provide an assessment of impact arising from the proposed development of the site.

2.0 PLANNING POLICY

National Planning Policy Framework December 2024

- 2.1 National Planning Policy is defined by the National Planning Policy Framework (NPPF). This sets out the Government's most current and up to date planning policies for England and how these should be applied. The current NPPF is dated December 2024.
- 2.2 In relation to arboriculture, the NPPF states that:
- 136 *'Trees make an important contribution to the character and quality of urban environments, and can also help mitigate and adapt to climate change. Planning policies and decisions should ensure that new streets are tree-lined (footnote 52), that opportunities are taken to incorporate trees elsewhere in developments (such as parks and community orchards), that appropriate measures are in place to secure the long-term maintenance of newly-planted trees, and that existing trees are retained wherever possible. Applicants and local planning authorities should work with highways officers and tree officers to ensure that the right trees are planted in the right places, and solutions are found that are compatible with highways standards and the needs of different users'. (footnote 52: unless, in specific cases, there are clear, justifiable and compelling reasons why this would be inappropriate)*
 - 193 (c) *'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 (footnote 70) and a suitable compensation strategy exists'.*
and provides specific guidance that:
 - 193 (d) *'development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate'.*
- 2.3 With reference to paragraph 193 (c), examples of what is deemed to be 'wholly exceptional' are included within Footnote 70 and provides the examples of 'infrastructure projects (including nationally significant infrastructure projects, orders under the Transport and Works Act and hybrid bills), where the public benefit would clearly outweigh the loss or deterioration of habitat'.

Local Planning Policy

- 2.4 Local planning decisions regarding all future developments are assessed against a framework to ensure that the district or county in question is developed in a well-informed and coherently systematic manner, this may include decisions to ensure that the right number and types of houses are built and incorporating the correct type of shopping and recreation facilities, whilst protecting the local ecological resources, landscape context and intrinsic heritage value of an area.
- 2.5 Within the context of the adopted Knowsley Local Plan Cores Strategy January 2016, there are several policies relating to trees. The following is the most relevant.

Policy CS21 - Greenspaces and Trees

Enhancement of Natural and Semi-Natural Greenspace and Tree Protection

10) The Council will encourage proposals for new development to incorporate:

- a) Retention of existing trees, woodland, vegetation and other habitat features which offer a positive contribution to the local environment in terms of visual amenity, recreation value or biodiversity/wildlife interest;*
- b) Appropriate planting of trees, other soft landscaping and installation of habitat features for the benefit of biodiversity; and*
- c) Adequate replacement provision where tree loss is unavoidable, comprising two additional trees for every tree lost and taking account of species and size.*

3.0 SURVEY METHODOLOGY

- 3.1 The survey of trees has been carried out in accordance with the criteria set out in Chapter 4 of BS5837. The survey has been undertaken by a suitably qualified and experienced arboriculturist and has recorded information relating to all those trees within the site and those adjacent to the site which may be of influence on any proposals. Trees were assessed for their arboricultural quality and benefits within the context of the proposed development in a transparent, understandable, and systematic way.
- 3.2 Trees have been assessed as groups and hedgerows where it has been determined appropriate.
- The term group has been applied where trees form cohesive arboricultural features either aerodynamically, visually or culturally including biodiversity or habitat potential for example parkland or wood pasture.
 - For the purposes of this assessment, a hedgerow is described as any boundary line of trees or shrubs less than 5m wide at the base and are managed under a regular pruning regime.
- 3.3 An assessment of individual trees within groups and hedgerows has been made where a clear need to differentiate between them, for example, to highlight significant variation between attributes including physiological or structural condition or where a potential conflict may arise.

BS5837 Categories

- 3.4 Trees, groups and hedgerows have been divided into one of four categories based on Table 1 of BS5837, 'Cascade chart for tree quality assessment'. For a tree to qualify under any given category it should fall within the scope of that category's definition (see below).
- 3.5 Category U trees are those which would be lost in the short term for reasons connected with their physiology or structural condition. They are, for this reason not considered in the planning process on arboricultural grounds.
- 3.6 Categories A, B and C are applied to trees that should be of material consideration in the development process. Each category also having one of three further sub-categories (i, ii, iii) which are intended to reflect arboricultural, landscape and cultural or conservation values accordingly.
- 3.7 **Category (U) – (Red):** Trees which are unsuitable for retention and are in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years. Trees within this category are:
- Trees that have a serious irremediable structural defect such that their early loss is expected due to collapse and includes trees that will become unviable after removal of other category U trees.
 - Trees that are dead or are showing signs of significant, immediate or irreversible overall decline.
 - Trees that are infected with pathogens of significance to the health and/ or safety of other nearby trees or are very low quality trees suppressing adjacent trees of better quality.
 - Certain category U trees can have existing or potential conservation value which may make it desirable to preserve.

- 3.8 **Category (A) – (Green):** Trees that are considered for retention and are of high quality with an estimated remaining life expectancy of at least 40 years with potential to make a lasting contribution. Such trees may comprise:
- Subcategory (i) trees that are particularly good examples of their species, especially if rare or unusual, or are essential components of groups such as formal or semi-formal arboricultural features for example the dominant and/or principal trees within an avenue.
 - Subcategory (ii) trees, groups or woodlands of particular visual importance as arboricultural and / or landscape features.
 - Subcategory (iii) trees, groups or woodlands of significant conservation, historical, commemorative or other value for example veteran or wood pasture.
- 3.9 **Category (B) – (Blue):** Trees that are considered for retention and are of moderate quality with an estimated remaining life expectancy of at least 20 years with potential to make a significant contribution. Such trees may comprise:
- Subcategory (i) trees that might be included in category A but are downgraded because of impaired condition for example the presence of significant though remediable defects, including unsympathetic past management and storm damage.
 - Subcategory (ii) trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.
 - Subcategory (iii) trees with material conservation or other cultural value.
- 3.10 **Category (C) – (Grey):** Trees that are considered for retention and are of low quality with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150mm. Such trees may comprise:
- Subcategory (i) unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.
 - Subcategory (ii) trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value or trees offering low or only temporary / transient screening benefits.
 - Subcategory (iii) trees with no material conservation or other cultural value.

Ancient and Veteran Trees

- 3.11 Various published methodologies are currently available for the identification of Ancient and Veteran trees which, due to the complexity and subjectivity of the process of defining and assessing these trees, often have conflicting definitions.

- 3.12 BS:5837 defines veteran trees as.

"Tree that, by recognized 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".

NOTE These characteristics might typically include a large girth, signs of crown retrenchment and hollowing of the stem.

- 3.13 BS:5837 does not provide a definition for ancient trees and therefore the assessment and the criterion being used for identifying ancient tree is based upon government guidance on, Ancient woodland, ancient trees and veteran trees: advice for making planning decisions¹ which states.
- "All ancient trees are veteran trees, but not all veteran trees are ancient. The age at which a tree becomes ancient, or veteran will vary by species because each species ages at a different rate."*
- 3.14 Ancient and veteran trees are also material considerations within the planning process and their importance is specifically recognised within the National Planning Policy Framework (NPPF) 2024, which includes its own definition of ancient and veteran trees:
- "A tree which, because of its age, size, and condition, is of exceptional biodiversity, cultural or heritage value. All ancient trees are veteran trees. Not all veteran trees are old enough to be ancient but are old relative to other trees of the same species. Very few trees of any species reach the ancient life-stage".²*
- 3.15 Stem girth is the most reliable guide when determining the age of trees and in normal growing conditions, ancient and veteran trees are those which have a large girth by comparison with other trees of the same species. To inform the assessment of chronological age reference has been made to the chart provided within Lonsdale (2013) (shown below in Figure 1).

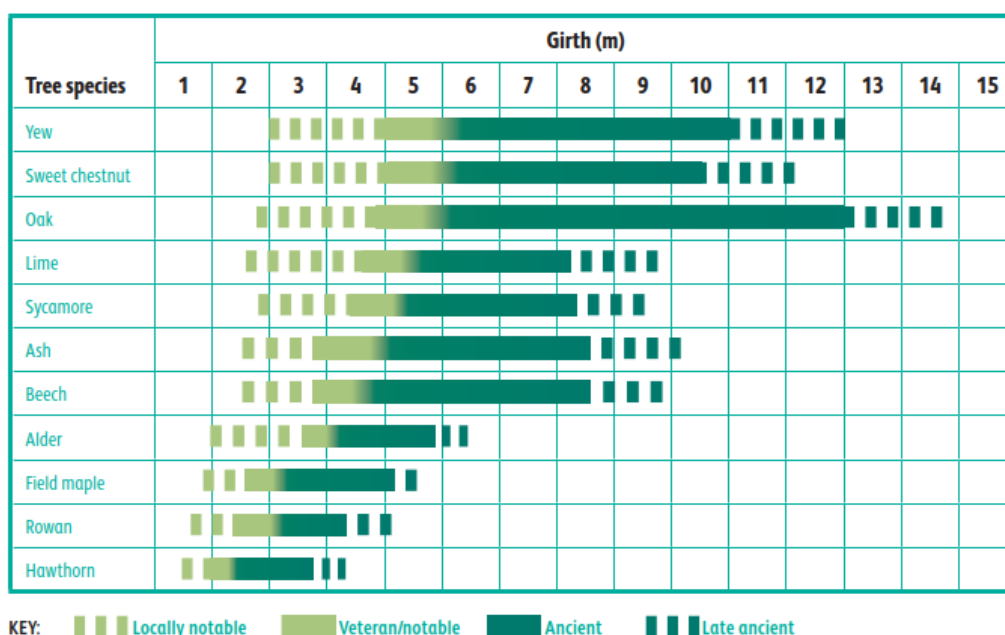


Figure 1: The chart of girth in relation to age and development classification of trees, as shown in Lonsdale (2013)³.

- 3.16 RAVEN 2 (Recognition of Ancient, Veteran & Notable trees) Julian Forbes-Laird (2023)⁴ has been adopted for gathering survey information as this provides a standardised framework for recording characteristic ancient/veteran features and this Arboricultural Assessment has also considered any potential candidates against this framework.

¹ Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)

² Ancient woodland, ancient trees and veteran trees: advice for making planning decisions - GOV.UK (www.gov.uk)

³ Lonsdale, D. (Ed.). 2013). Ancient and other veteran trees: further guidance on management. London: The Tree Council.

⁴ Recognition of Ancient, Veteran & Notable Trees – RAVEN 2 (2023) – Julian Forbes-Laird Consultancy.

Considerations and Limitations of the Tree Survey

- 3.17 The survey was completed from ground level only and from within the boundary of the site. Aerial tree inspections or an assessment of the internal condition of the stem/s or branches were not undertaken at this stage as this level of survey is beyond the scope of the initial assessment.
- 3.18 The statements made in this report regarding the assessed trees applies to the date of survey and cannot be assumed to remain unchanged. It will be necessary to review all comments and observations made within this report, in accordance with sound arboricultural practice, within two years of the date of survey (unless explicitly stated elsewhere within this report). Further review may also be necessary where site conditions change or works to trees are carried out which have not been specified in detail within this report.
- 3.19 Hedgerows are identified as a Habitat of Principal Importance (HPI) as listed within Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. The tree survey conducted, in accordance with BS5837, does not assess hedgerows against the Hedgerow Regulations 1997 or specifically from an ecological perspective, and is outside the scope of this assessment.
- 3.20 It may be necessary during detailed design to undertake further assessment and accurate positioning of woody species within tree groups and hedgerows to assist structural calculations for foundation design of structures in accordance with NHBC Chapter 4.2 Building near Trees.

4.0 RESULTS

- 4.1 A total of 31 individual trees, ten groups of trees, and six hedgerows were surveyed as part of the Arboricultural Assessment. Trees were surveyed as individual trees, groups and hedgerows as per the survey methodology.
- 4.2 Appendix A presents details of all individual trees, groups and hedgerows recorded during the assessment including heights, diameters at 1.5m from ground level, crown spread (given as a radial measurement from the stem), age class, comments as to the overall condition at the time of inspection, BS5837 category of quality and suitability for retention and the root protection area (RPA), calculated in accordance with Annex C, D and Section 4.6 of BS5837:2012.
- 4.3 General observations particularly of structural and physiological condition for example the presence of any decay and physical defect and preliminary management recommendations have also been recorded where appropriate.
- 4.4 The individual positions of trees, groups and hedgerows have been shown on the Tree Survey Plan. The positions of trees are based on a topographical / land survey, as far as possible, supplied by the client. Where topographical information has not identified the position of trees these have been plotted using a global positioning system and aerial photography to provide approximate locations. The crown spread, root protection area and shade pattern (where appropriate) are also indicated on this plan.

Results Summary

- 4.5 Tree cover was restricted to the site boundaries and included an established belt of trees along the site's western boundary which abutted a public footpath and the rear gardens of an adjoining property, along with occasional trees along a stream forming the northern boundary, within the verge along Cronton Road and within the rear gardens of properties on Wheatfield Road to the east of the site.
- 4.6 Table 1 below summarises the trees assessed and several of the trees have been discussed in more detail following the table, owing to their physical condition or arboricultural significance.

Table 1: Summary of Trees by Retention Category

	Individual Trees	Total	Groups of Trees	Total
Category U - Unsuitable	T20, T27	2		0
Category A (High Quality / Value)	T4, T13, T16, T25, T30	5		0
Category B (Moderate Quality / Value)	T3, T5, T6, T7, T10, T11, T14, T15, T19, T21, T23, T24, T28, T29	14	G4, H1	2
Category C (Low Quality / Value)	T1, T2, T8, T9, T12, T17, T18, T22, T26, T31	10	G1, G2, G3, G5, G6, G7, G8, G9, G10, H2, H3, H4, H5, H6	14

- 4.7 A total of five individual trees were assessed as being of high quality (Category A). These five trees, all mature English oak *Quercus robur* were distributed across the site with three on the western boundary, one within the verge alongside Cronton Road and one within the rear garden of a property on Wheatfield Road beyond the site's eastern boundary.

- 4.8 Most individual trees recorded were of moderate quality, with English oak being the dominant species recorded, along with ash *Fraxinus excelsior* and sycamore *Acer pseudoplatanus*. These trees were either of immature proportions or displayed features commonly associated with trees within an agricultural setting including storm damage and damage to lower crowns through hedgerow management.
- 4.9 Of the fourteen individual trees recorded as moderate quality, three trees T3, a mature alder *Alnus glutinosa* situated to the north of the stream forming the northern boundary, T11 and T19, two mature English oak on the western boundary, were all considered to possess potential ecological and habitat value. While the three trees did not possess a sufficient number or quality of habitat to be considered veteran trees in accordance with accepted methodologies and guidance outlined in paragraphs 3.11 – 3.16, they were assessed as Category B(iii) for their potential ecological and habitat value.
- 4.10 Tree group G4 and hedgerow H1 were also recorded as moderate quality (Category B) for their collective landscape value from an arboricultural perspective. With G4, a group of alder and goat willow *Salix caprea* situated around a body of water forming an arboricultural feature and H1, a maintained hawthorn *Crataegus monogyna* hedgerow along the boundary with Cronton Road provided moderate screening value to the site from the adjoining carriageway.
- 4.11 Two individual trees T20, a mature sycamore on the site's western boundary and T27, a mature sycamore situated close to the rear garden of a property on Cronton Road, were both assessed as being unsuitable for retention (Category U). T20 was in a state of terminal decline with die back being evident throughout the crown and the tree highly unlikely to recover. T27, was in a similar poor condition with the whole of the crown having died and a new crown having formed of epicormic growth. *Kretzschmaria deusta* a decay fungus which can result in the failure of trees with little warning was recorded on the main stem of T27 close to the base, which is most likely have contributed to its death. Neither tree could realistically be retained in the context of the current land use for longer than 10 years.
- 4.12 The remaining ten individual trees, nine groups and five hedgerows were all assessed as being of low quality from an arboricultural perspective and recorded as Category C. This tree cover included immature self-seeded trees, unmaintained boundary hedgerows and maintained hedgerows along the rear gardens of adjoining properties. While this tree cover contributed to the setting of the site, individually these trees, groups and hedgerows were of low quality and could be mitigated for through new tree and hedgerow planting, should they need to be removed.

Statutory Considerations

- 4.13 Local authorities have a Duty under the Town and Country Planning Act to create Tree Preservation Orders (TPO) to protect and preserve specific trees and woodlands that bring significant amenity benefit to a particular site or location.
- 4.14 Under a TPO it is a criminal offence to cut down, top, lop, uproot or wilfully destroy a tree protected by that Order, or to cause or permit such actions, if carried out without the prior written consent of the acting LPA.

- 4.15 No direct consultation with the Local Planning Authority has taken place, however, it is understood having used the online search facility on the website for Knowsley Council that there are no Tree Preservation Orders or Conservation Areas that would apply to any trees present on, or in proximity to the assessment.
- 4.16 Information provided on Tree Preservation Orders and Conservation Areas is accurate to the date of this assessment and cannot be assumed to remain unchanged. Before any tree works are undertaken confirmation of the online information should be sought from the Local Authority.

5.0 ARBORICULTURAL IMPACT ASSESSMENT

- 5.1 The following paragraphs present a summary of the tree survey and discussion of trees and groups recorded in the context of any proposed development in the form of an Arboricultural Impact Assessment in accordance with section 5.4 of BS5837. Any final tree retentions will need to be reconciled with the advice contained within this report.
- 5.2 The AIA has been based upon the Illustrative Masterplan and Proposed Access Strategy and seeks to outline the relationship between the proposals and the existing trees and hedgerows. The proposals are for up to 120 residential dwellings and a single point of vehicle access off Cronton Road (A5080) to the south.
- 5.3 An overlay of the Illustrative Masterplan has been incorporated in the Tree Retention Plan to assist in identifying the relationship and any potential conflicts between the outline proposals and the existing trees and hedgerows.
- 5.4 An overlay of the Proposed Access Strategy has been incorporated in the Tree Retention Plan – Access to identify any conflicts between the detailed access proposals and the existing trees and hedgerows. This plan also identifies which trees would be required to be removed to facilitate access.

Proposed Detailed Access

- 5.5 To achieve access to the site from Cronton Road will require the removal of sections of hedgerow, individual trees and tree groups. The proposed access which is positioned at the eastern end of the site boundary with Cronton Road, will directly impact T26, a semi mature sycamore which had self-seeded within the verge and T25, a mature English oak considered of high quality and Retention Category A.
- 5.6 The loss of T25 will result in an arboricultural impact that will require mitigation in the form of new tree planting. Policy CS21 of the Knowsley Local Plan Core Strategy requires "*adequate replacement provision where tree loss is unavoidable, comprising two additional trees for every tree lost and taking account of species and size*".
- 5.7 The position of the access has been informed by various factors including existing tree cover along Cronton Road but with visibility splays being a key determining factor on where an access could be positioned. Through the design process it transpired that there is no location along this boundary in which an access could be provided, and visibility splays achieved that does not require the removal of all tree cover from along Cronton Road including T25.
- 5.8 As such it can be demonstrated that the loss of T25 is unavoidable to facilitate development of the site, but replacement provisions of appropriate size and species will be necessary and can be achieved to ensure the development is in accordance with Policy CS21. It is therefore proposed that four heavy standard English oak would be planted on the site in positions that could support their mature size to adequately mitigate for the loss of this mature high-quality tree meeting the policy requirements.
- 5.9 The visibility splay requirement of the new junction will require the removal of T21, T22, T23, T24, G9 and the entirety of hedgerow H1 (approximately 100m). T21, T23 and T24, three early mature English oak were assessed as being of moderate quality. Their removal, would be mitigated for in accordance with Policy CS21 through the planting of six heavy standard English oak within the development in positions that could support their mature size.

- 5.10 T22, a semi mature English oak, G9, two mature ash and T26 a semi mature sycamore were all assessed as low quality and while Policy CS21 requires two additional trees be planted for every tree lost, when considering species and size it should be considered appropriate that the replacement trees be ornamental species which would be planted across the development.
- 5.11 The removal of approximately 100m of hedgerow H1 would be partially mitigated for through the planting of a new hedgerow behind the visibility splay for the new junction to directly mitigate for this hedgerow loss. Further hedgerow planting would also be provided across the development to ensure the proposed scheme delivers a net gain in terms of linear hedgerows.
- 5.12 All vegetation and, particularly, woody vegetation proposed for clearance should be removed outside of the bird-breeding season (March - September inclusive) as all birds are protected under the Wildlife and Countryside Act, 1981 (as amended) whilst on the nest. Where this is not possible, vegetation should be checked for the presence of nesting birds prior to removal by an experienced ecologist.

Illustrative Masterplan

- 5.13 The Illustrative Masterplan has demonstrated that much of the existing tree cover could be retained within a proposed development. With the outline proposals shown to be designed around the natural features of the site, showing trees retained within proposed green space and green corridors along the site boundaries.
- 5.14 Any further arboricultural impacts across the development are likely to be limited but are likely to include the removal of two trees recorded as Category U (T20 and T27). Category U trees are not material considerations in the planning process from an arboricultural perspective due to their reduced life expectancy so should not be regarded as an arboricultural impact or require mitigation.
- 5.15 The Illustrative Masterplan is also shown to conflict with G8 a group of young trees which had established along the bank of ditch. Should the removal of this tree cover be necessary to facilitate development, this would not be considered a significant arboricultural impact and their removal could be mitigated for through new tree planting across the development.
- 5.16 The Illustrative Masterplan has shown most trees to be retained within proposed green space and green corridors along the site boundaries. The proposals have also demonstrated that a sustainable long-term relationship between these retained trees and properties could be achieved by orientating properties to be front or side facing to these retained trees.
- 5.17 While internal roads and dwellings have also been positioned to avoid the RPA of retained trees the Illustrative Masterplan has identified that it might not be feasible for all pedestrian links and footpaths, including the existing Public Right of Way (PROW CR/5/1) to avoid the RPA of retained trees.
- 5.18 The PROW shown on the Illustrative Masterplan follows the existing line of the PROW which is currently an unsurfaced path. Development of the site would likely see this section of the PROW formalised. As it is unfeasible for the PROW to be diverted, this will require the use of tree friendly construction methods, likely a cellular confinement system where the footpaths passes through the RPA of T4 and T10.

Discussion

- 5.19 In conclusion for arboriculture, while tree loss is necessary to facilitate access to the site, this proposed tree and hedgerow removal could be mitigated for through new tree and hedgerow planting, to ensure the development is in accordance with Local Planning Policy. The Illustrative Masterplan has identified that through considered design it would be feasible to integrate a high proportion of the existing tree cover within the development, and that a sustainable long-term relationship between dwellings and retained trees could be achieved.
- 5.20 Should outline planning permission be granted, an updated Tree Survey / AIA should be submitted, as part of a subsequent Reserved Matters application.

6.0 NEW TREE AND HEDGEROW PLANTING

- 6.1 As part of the subsequent reserved matters application, should the application be approved, an adequate quantity of structured tree planting should be provided to adequately mitigate for any tree removal necessary to implement the development, in accordance with Policy CS21. The purpose and function of this new tree planting should be understood from the start of any design stages so that key objectives from a landscape perspective can also be achieved.
- 6.2 The landscaping scheme should consider the use of both native tree species (for their low maintenance requirements and nature conservation value) and ornamental species (for their contribution to urban design and amenity value). Species choices should be selected based on their suitability for the final site use. Furthermore, during the design process consultation should be made with the Local Planning Authority to obtain information on their tree strategy and incorporate the planting proposals with any local policies and initiatives and/or Biodiversity Action Plans (BAP).
- 6.3 When deciding upon suitable tree species, careful consideration would need to be given to the following: ultimate height and canopy spread, form, habit, density of crown, potential shading effect, colour, water demand, soil type and maintenance requirements in relation to both the built form of the new development and existing properties.
- 6.4 Hedgerows are identified as a Habitat of Principal Importance (HPI) as listed within Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Consequently, it is important that the proposed scheme delivers a net gain in terms of linear hedgerows through new planting to compensate for any losses. Species should be native, and characteristic of the locality.

Rooting Environment and Soil Volumes

- 6.5 The success of any landscaping scheme relies on an adequate provision of a high-quality rooting environment within which trees can thrive and reach their full potential. Planting trees with due care and consideration can, in the long term, provide a greater return on a schemes green investment and ensure trees remain healthy and grow to mature proportions. Healthy mature trees integrate well into the built environment; increase the maturity of the landscape; help provide a natural green and leafy urban environment in which people would want to reside whilst also benefiting local wildlife.
- 6.6 The planting of trees within confined urban environments should consider the use of appropriately designed planting pits specifically engineered to promote tree health and longevity. Crucially the aim will be to provide an adequate volume of quality soil for roots to suitably develop by calculating the amount of available soil volumes needed and selecting species whose mature size is compatible with the site. This is an integral component of the planning stage (Lindsey & Bassuk, 1991).
- 6.7 Wherever possible, following discussions with the developer and utility companies, common service trenches should be specified to minimise land take associated with underground service provision and facilitation access for future maintenance. Tree planting should be avoided where they may obstruct overhead power lines or cables. Any underground apparatus should be ducted or otherwise protected at the time of construction to enable trees to be planted without resulting in future conflicts.

7.0 TREE PROTECTION MEASURES

- 7.1 Retained trees should be adequately protected during works through the erection of the requisite tree protection measures. These protection measures should be detailed as part of a site-specific Arboricultural Method Statement, which could be imposed as a condition of planning approval.
- 7.2 Measures to protect trees should follow the guidance in BS5837 and be applied where necessary for the purpose of protecting trees within the site whilst allowing sufficient access for the implementation of the proposed layout. These have been broadly summarised below.

General Information and Recommendations

- 7.3 All trees retained on site should be protected by suitable barriers or ground protection measures around the calculated RPA, crown spread of the tree or other defined constraints of this assessment as detailed by section 6 and 7 of BS5837.
- 7.4 Barriers should be erected prior to commencement of any construction work and once installed, the area protected by fencing or other barriers will be regarded as a construction exclusion zone.
- 7.5 Any trees that are not to be retained as part of the proposals should be felled prior to the erection of protective barriers. Particular attention needs to be given by site contractors to minimise damage or disturbance to retained specimens.
- 7.6 Construction access may take place within the root protection area if suitable ground protection measures are in place. This may comprise single scaffold boards over a compressible layer laid onto a geo-textile membrane for pedestrian movements. Vehicular movements over the root protection area will require the calculation of expected loading and the use of proprietary protection systems.

Tree Protection Barriers

- 7.7 Tree protection fencing should be fit for the purpose of excluding any type of construction activity and suitable for the degree and proximity of works to retained trees. Barriers must be maintained to ensure that they remain rigid and complete for the duration of construction activities on site.
- 7.8 In most situations, fencing should comprise typical construction fencing panels attached to scaffold poles driven vertically into the ground, as illustrated in Appendix B.
- 7.9 Where site circumstances and the risk to retained trees do not necessitate the default level of protection an alternative will be specified appropriate to the level / nature of anticipated construction activity.

Protection outside the exclusion zone

- 7.10 Once the areas around trees have been protected by the barriers, any works on the remaining site area may be commenced providing activities do not impinge on protected areas.

- 7.11 All weather notices should be attached to the protective fencing to indicate that construction activities are not permitted within the fenced area. The area within the protective barriers will then remain a construction exclusion zone throughout the duration of the construction phase of the proposed development.
- 7.12 Wide or tall loads etc should not come into contact with retained trees. Banksman should supervise transit of vehicles where they are near retained trees.
- 7.13 Oil, bitumen, cement or other material that is potentially injurious to trees should not be stacked or discharged within 10m of a tree stem. No concrete should be mixed within 10m of a tree. Allowance should be made for the slope of ground to prevent materials running towards the tree.
- 7.14 Notice boards, telephone cables or other services should not be attached to any part of a retained tree.
- 7.15 Any trees which need to be felled adjacent to or are present within a continuous canopy of retained trees, must be removed with due care (it may be necessary to remove such trees in sections).

8.0 TREE MANAGEMENT

- 8.1 The layout of the development is currently reserved for subsequent approval. During a reserved matters application pursuant to layout, a review of the relationship between the layout and the retained trees should be undertaken by a qualified arboriculturist to assess the existing tree cover and prepare a schedule of tree works.
- 8.2 All retained trees should be subjected to sound arboricultural management as recommended within section 8.8.3 of BS5837 Post Development Management of Existing Trees, where there is a potential for public access to satisfy the landowner's duty of care.
- 8.3 Landowners responsible for trees, especially those within the public domain, have a legal 'duty of care' to ensure that visitors and neighbours of their land are reasonably safe and that nobody comes to harm or injury, by his or her negligence, through taking measures to reduce risks as far as is 'reasonably practical' (The Health and Safety at Work Act 1974).
- 8.4 To ensure that risks are reduced as far as is 'reasonably practicable' it will be necessary that, a review of the relationship between retained trees and the new development should be undertaken by a qualified arboriculturist to assess the retained tree cover and prepare a schedule of tree works.
- 8.5 The Occupiers Liability Act (1957 and 1984) also places a 'duty of care' to ensure that no reasonably foreseeable harm takes place due to tree defects. That duty of care should be reasonable, proportionate, and reasonably practicable when managing the risk⁵.
- 8.6 It is currently expected that a suitably qualified Arboriculturist or tree surveyor should inspect trees with an appropriate level of regularity. The purpose of the inspections is to determine whether a tree could foreseeably cause harm by virtue of its size and physical condition.

⁵ The Health and Safety at Work Act 1974

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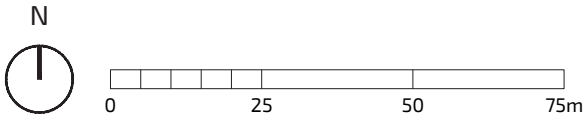
Company No. 07128076. [T] 01509 672772 [E] mail@fpcr.co.uk [W] www.fpcr.co.uk

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Notes:

All dimensions to be verified on site. Do not scale this drawing, use figure dimensions only. Drawing to be read in conjunction with Arboricultural Assessment and Appendix A - Tree Schedule. The exact position of individual trees or species included as part of a tree group, woodland or hedgerow should be checked and verified site prior to and decisions for foundation design, tree operations or construction activity being undertaken. Further survey work would be required for calculation foundation depths.

- Category U - Trees / Groups Unsuitable for Retention (BS5837:2012)
- Category A - Trees / Groups of High Quality (BS5837:2012)
- Category B - Trees / Groups of Moderate Quality (BS5837:2012)
- Category C - Trees / Groups of Low Quality (BS5837:2012)
- Hedgerow
Colour Indicates BS5837:2012 Category
- Root Protection Area
- Individual/Group number and BS5837:2012 Category
- Indicative Shade Pattern (in accordance with BS5837:2012 where appropriate)

rev	date	First Issue	description	PH / EC	drwn/chkd
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client

Bellway Homes (North West)

project

**Cronton,
Knowsley**

title	scale
TREE SURVEY PLAN	1:1250 @ A3

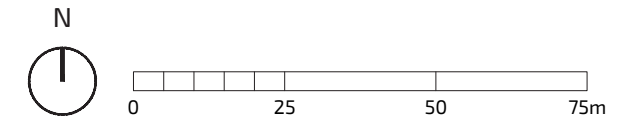
number	status	rev
13294-T-01	-	-

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- Tree/Group to be Retained
- Tree/Group proposed to be removed subject to relevant permissions
- Category U - Unsuitable for retention on arboricultural grounds
- Hedgerow Proposed to be Retained
- Hedgerow proposed to be removed subject to relevant permissions
- Root Protection Area (Shown for retained trees only)
- Individual / Group Number and BS Category
- Individual / Group Number to be Removed and BS 5837:2012 Category
- Indicative Shade Pattern (in accordance with BS5837:2012 where appropriate)

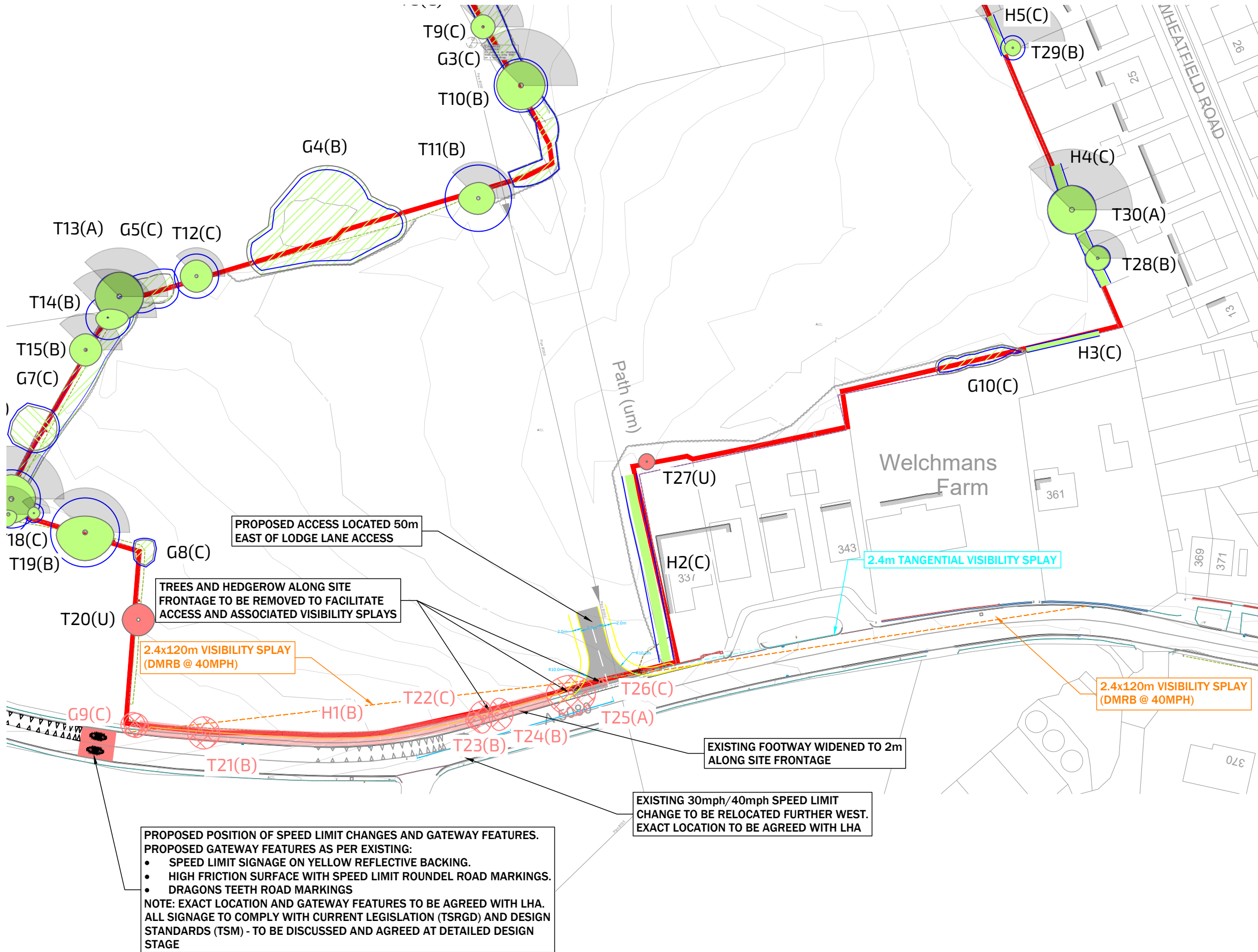
-	20.10.25	First Issue	EC
A	10.12.25	Update	EC
rev	date	description	drwn/chkd

client
Bellway Homes (North West)
project
Cronton, Knowsley

title
TREE RETENTION PLAN
scale
1:1250 @ A3

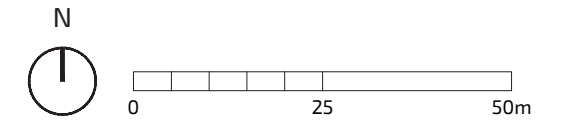
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status
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rev
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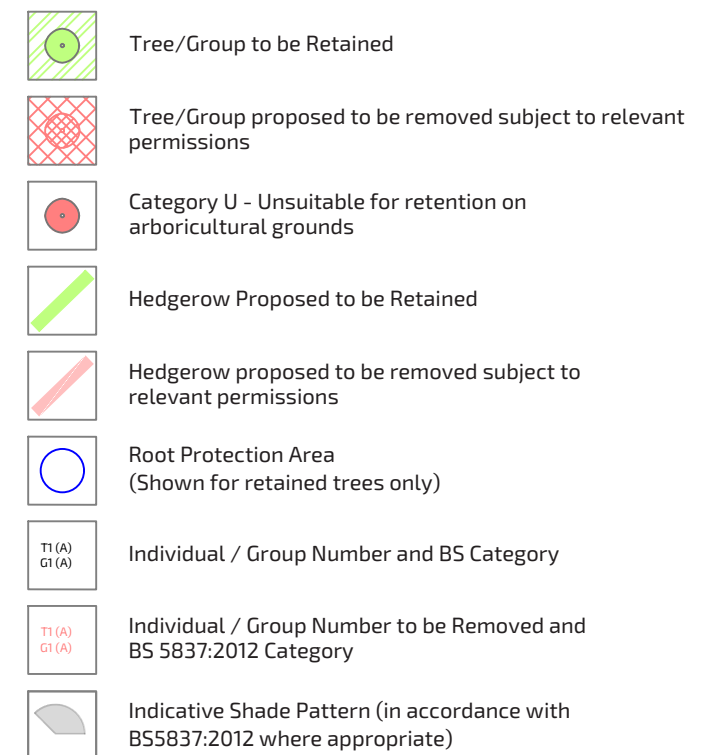
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Notes:

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rev	date	description	drwn/chkd
-	20.10.25	First Issue	EC
A	10.12.25	Update	EC

client
Bellway Homes (North West)
project
**Cronton,
Knowsley**

title
TREE RETENTION PLAN - ACCESS
scale
1:1000 @ A3

number
13294-T-03
status
-
rev
A

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Appendix A - Tree Schedule

Measurements	Age Classes	Quality Assessment of BS Category	ULE (relates to BS Category)
Height - Measured using a digital laser clinometer (m)	YNG: Establishing, typically with good vigour and fast growth rates and strong apical dominance; c. less than 1/3 life expectancy	Category U - Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.	<10 years
Stem Dia. - Diameter measured (mm) in accordance with Annex C of the BS5837	SM: Semi-mature trees less than 1/3 life expectancy	Category A - Trees of high quality with an estimated remaining life expectancy of at least 40 years.	40+ years
Crown Radius - Measured using a digital laser clinometer radially from the main stem (m)	EM: Established, typically vigorous and increasing in apical height and lateral spread; 1/3 - 2/3 life expectancy. Offers landscape significance	Category B - Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.	20-40 years
Abbreviations est - Estimated stem diameter avg - Average stem diameter for multiple stems upto - Maximum stem diameter of a group	M: Fully established over 2/3 life expectancy, generally good vigour and achieving full height potential with crown still spreading	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.	10-20 years
	OM: Fully mature, at the extremes of expected life expectancy, vigour decreasing, declining or moribund	Sub-categories: (i) - Mainly arboricultural value (ii) - Mainly landscape value (iii) - Mainly cultural or conservation value	
	V: biological, cultural or aesthetic value comprising niche saproxylic habitat. Individuals of large proportions (stem girth) in comparison to trees of the same species/surviving beyond the typical age range for their species.	The BS category particular consideration has been given to the following: • The presence of any structural defects in each tree/group and its future life expectancy • The size and form of each tree/group and its suitability within the context of a proposed development • The location of each tree relative to existing site features e.g. its screening value or landscape features • Age class and life expectancy	

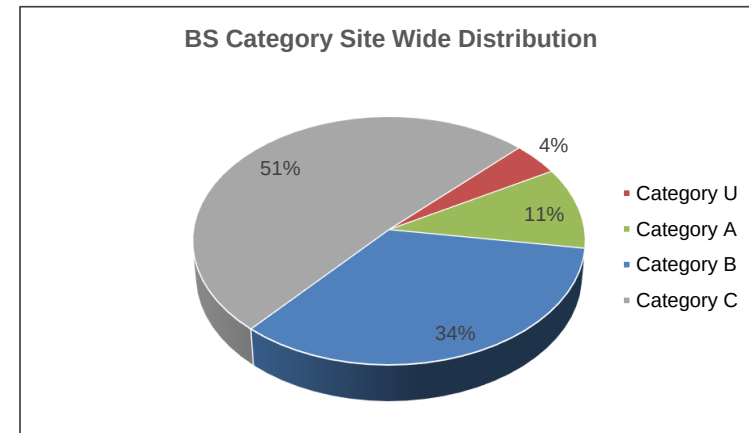
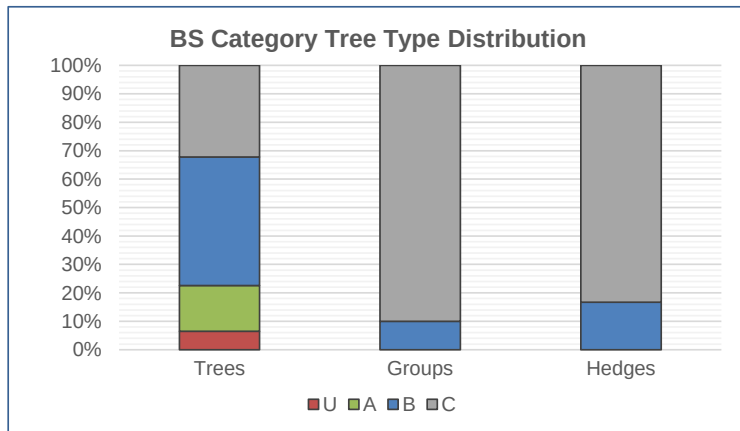
Structural Condition	Physiological Condition	Root Protection Area (RPA)
Good - No significant structural defects	Good - No significant health problems	• The RPA Radius column provides the extent of an equivalent circle from the centre of the stem (m). • The RPA is calculated using the formulae described in paragraph 4.6.1 of British Standard 5837: 2012 and is indicative of the rooting area required for a tree to be successfully retained. Tree roots extend beyond the calculated RPA in many cases and where possible a greater distance should be protected. • Where veteran trees have been identified the RPA has been calculated in accordance with Natural England guidance i.e. 15x the stem diameter, uncapped.
Fair - Structural defects that can be remediated	Fair - Symptoms of ill-health that can be remediated	
Poor - Significant defects beyond remediation, present a risk of failure in the foreseeable future	Poor - Significant ill-health. Unlikely the tree will recover in the long term	
Dead - Dead tree with structural integrity of tree severely compromised	Advanced Decline / Dead - Advanced state of decline and unlikely to recover or Dead	

Appendix Summary

	Individual Trees	Totals	Tree Groups and Hedgerows	Totals
Category U	T20, T27	2		0
Category A	T4, T13, T16, T25, T30	5		0
Category B	T3, T5, T6, T7, T10, T11, T14, T15, T19, T21, T23, T24, T28, T29	14	G4, H1	2
Category C	T1, T2, T8, T9, T12, T17, T18, T22, T26, T31	10	G1, G2, G3, G5, G6, G7, G8, G9, G10, H2, H3, H4, H5, H6	14
	Total	31	Total	16

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

BS Category Site Wide Distribution shows the proportion of trees assessed in each category across the whole site which allows an interpretation of the site's overall quality.



Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
INDIVIDUAL TREES										
T1	Sycamore Acer pseudoplatanus	4	upto 150 150 120 80 80	2	EM	F	Self seeded tree beyond stream forming site boundary multi stemmed from base	33	3.2	C (ii)
T2	Elder Sambucus nigra	3	upto 6x 80	2	M	F	Self seeded tree on bank of stream forming site boundary multi stemmed from base dense undergrowth restricts access to base	17	2.4	C (ii)
T3	Alder Alnus glutinosa	8	est 10x 250	5	M	F	Situated beyond stream forming site boundary multi stemmed from base dense undergrowth restricts access to base dieback of crown evident with dead stems possible lapsed coppice	283	9.5	B (iii)
T4	English Oak Quercus robur	11.5	Over ivy 740	6	M	G	Situated on far bank of ditch along site boundary dense ivy cover obscures main stem and lower crown unsurfaced footpath to west of tree past pruning to raise crown above footpath small diameter dead branches typical of species	248	8.9	A (i)
T5	English Oak Quercus robur	11	Over ivy 480	N - 6 S - 5 E - 6 W - 5	M	G	Situated on far bank of ditch along site boundary dense ivy cover obscures main stem unsurfaced footpath to west of tree	104	5.8	B (i)
T6	English Oak Quercus robur	11	est 500	N - 5 S - 4 E - 5 W - 4	M	G	Situated on far bank of ditch along site boundary dense ivy cover obscures main stem unsurfaced footpath to west of tree lower crown maintained along edge of footpath through flail mowing unable to access stem	113	6.0	B (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T7	English Oak Quercus robur	11	est 260 240 200	N - 3 S - 4 E - 4 W - 5	M	G	Situated on far bank of ditch along site boundary multi stemmed from base ivy cover obscures stems unsurfaced footpath to west of tree unable to access stems	75	4.9	B (i)
T8	English Oak Quercus robur	11	est 210	N - 1 S - 4 E - 1 W - 1	EM	F	Situated on far bank of ditch along site boundary suppressed by larger neighbouring tree unsurfaced footpath to west of tree unable to access stem	20	2.5	C (i)
T9	Ash Fraxinus excelsior	10	est 230	3	EM	F	Situated on far bank of ditch along site boundary unsurfaced footpath and underground services to west of tree unable to access stem	24	2.8	C (i)
T10	Ash Fraxinus excelsior	14	est 550	6	M	F	Situated on bank of ditch along site boundary unsurfaced footpath to west of tree dense ivy cover obscures main stem and lower crown unable to access stem	137	6.6	B (i)
T11	English Oak Quercus robur	9	610 310	N - 4 S - 4 E - 4 W - 5	M	F	Situated on bank of ditch along site boundary cavity within main stem at 1m to 2m with exposed heartwood secondary stem develops from base to west possible loss of main leader at 3m low crown to 1m above ground level	212	8.2	B (iii)
T12	English Oak Quercus robur	7	320 240 220	4	M	F	Situated on far bank of ditch forming site boundary multi stemmed from base included union noted between stems at base from ground level up to 1m crossing and rubbing branches	94	5.5	C (i)
T13	English Oak Quercus robur	12	est 350 350	6	M	G	Situated on site boundary dense undergrowth restricts access to base twin stemmed from 0.5m	111	5.9	A (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T14	English Oak Quercus robur	12	est 320 230 230	N - 2 S - 3 E - 5 W - 3	M	G	Situated on site boundary multi stemmed from 0.5m	94	5.5	B (i)
T15	Ash Fraxinus excelsior	9	est 300	4	EM	G	Situated on site boundary dense undergrowth restricts access to base	41	3.6	B (i)
T16	English Oak Quercus robur	13	Over ivy 600	6	M	G	Situated on site boundary dense undergrowth restricts access to base ivy cover obscures main stem small diameter dead branches typical of species	163	7.2	A (i)
T17	English Oak Quercus robur	7	300 190 150 120	N - 1 S - 3 E - 2 W - 2	EM	F	Multi stemmed from base suppressed by larger neighbouring tree past pruning to facilitate ditch clearance	74	4.8	C (i)
T18	Ash Fraxinus excelsior	4	6x 80	1.5	EM	F	Situated on bank of drainage channel coppiced as part of ditch clearance	17	2.4	C (i)
T19	English Oak Quercus robur	11	710	N - 4 S - 7 E - 7 W - 7	M	F	Situated on edge of ditch cavity within main stem from ground level up to 3m main stem leans to South with twist uneven crown due to past failure at 4m with large dead branch stub partially occluded	228	8.5	B (iii)
T20	Sycamore Acer pseudoplatanus	11	350	4	M	P	Situated on edge of ditch die back of crown with large diameter dead branch limited future potential	N/A	N/A	U
T21	English Oak Quercus robur	10	320	4	EM	G	Situated within boundary hedgerow adjacent to carriageway lighting column within 2m of base lower crown maintained as part of hedgerow management	46	3.8	B (i)

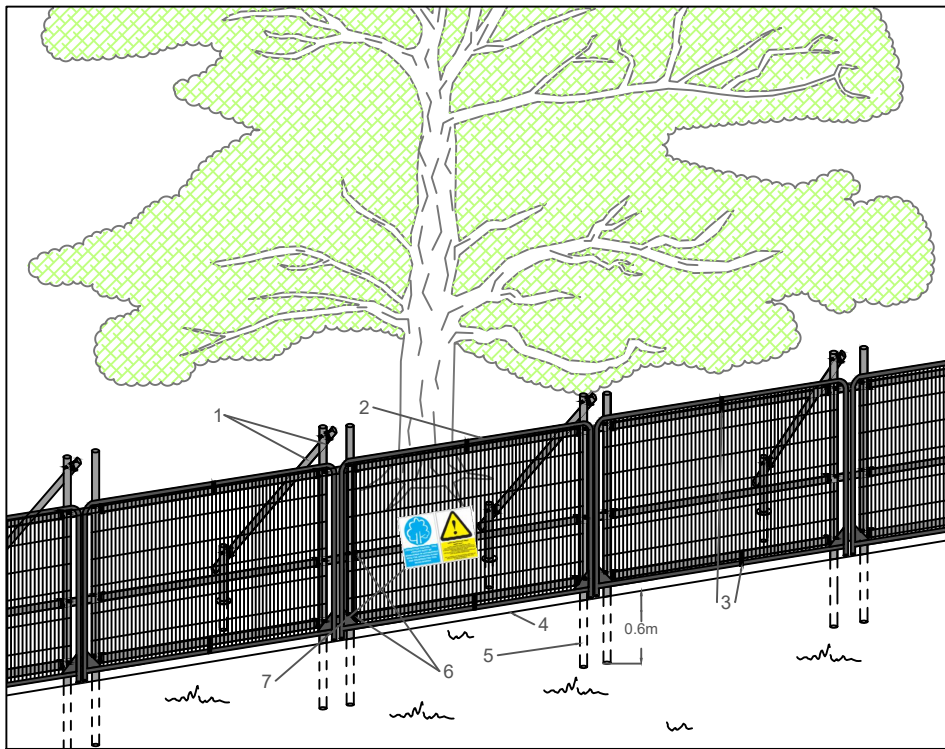
Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T22	English Oak <i>Quercus robur</i>	5	135	2	SM	F	Situated within boundary hedgerow adjacent to carriageway suppressed by larger neighbouring tree unlikely to develop into a suitable mature specimen	8	1.6	C (i)
T23	English Oak <i>Quercus robur</i>	10	300	N - 4 S - 4 E - 2 W - 4	EM	G	Situated within boundary hedgerow adjacent to carriageway close spacing to neighbouring tree resulting in uneven crown	41	3.6	B (i)
T24	English Oak <i>Quercus robur</i>	10	320	N - 4 S - 4 E - 4 W - 2	EM	G	Situated within boundary hedgerow adjacent to carriageway close spacing to neighbouring tree resulting in uneven crown	46	3.8	B (i)
T25	English Oak <i>Quercus robur</i>	11.5	650	N - 4 S - 6 E - 6 W - 6	M	G	Situated within boundary hedgerow adjacent to carriageway past pruning to raise crown above site with large diameter pruning wound fully occluded past pruning to raise crown above adjacent footpath with small diameter branch stubs and epicormic growth noted	191	7.8	A (i)
T26	Sycamore <i>Acer pseudoplatanus</i>	3	95	1	SM	F	Self seeded tree within grass verge	4	1.1	C (i)
T27	Sycamore <i>Acer pseudoplatanus</i>	7	est 700	2	M	P	Situated within site close to boundary previously failed at 5m crown formed of regrowth shoots usulina noted on main stem at 1m limited future potential	N/A	N/A	U
T28	Scots Pine <i>Pinus sylvestris</i>	7	260	3	EM	G	Situated beyond boundary fence by 0.5m within neighbouring garden	31	3.1	B (i)
T29	Grand Fir <i>Abies grandis</i>	13	250	2	EM	G	Situated beyond boundary fence by 0.5m within neighbouring garden	28	3.0	B (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T30	English Oak Quercus robur	15	500	6	M	G	Situated beyond boundary fence by 0.5m within neighbouring garden past pruning to raise crown above site	113	6.0	A (i)
T31	Wild Cherry Prunus avium	5	est 300	3	M	F	Situated beyond boundary fence by 2m within neighbouring garden previously topped	41	3.6	C (i)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
GROUPS OF TREES										
G1	Elder Sambucus nigra Hawthorn Crataegus monogyna Sycamore Acer pseudoplatanus Wild Cherry Prunus avium	5	upto 6x 150	2.5	EM	F	Sporadic self seeded trees beyond stream forming site boundary dense undergrowth throughout group restricts access	61	4.4	C (ii)
G2	Sycamore Acer pseudoplatanus	7	upto 225	3	EM	F	Group of self seeded trees on bank of stream forming site boundary close spacing of less than 1m between stems mutual crown	23	2.7	C (ii)
G3	Blackthorn Prunus spinosa Hawthorn Crataegus monogyna Hazel Corylus avellana	4	upto 150	2	M	F	Unmaintained tree group along ditch forming site boundary understorey to mature trees predominantly blackthorn felled along edge of footpath to west	10	1.8	C (ii)
G4	Goat Willow Salix caprea Alder Alnus glutinosa	7	upto 250	4	EM	F	Sporadic trees around body of water willow establishing within site unable to fully assess	28	3.0	B (ii)
G5	Ash Fraxinus excelsior	7	upto 200 200 200	3	M	P	Established within ditch forming site boundary possible lapsed coppice maintained as part of ditch management	54	4.2	C (ii)
G6	Ash Fraxinus excelsior	11	upto 200 200	4	EM	F	Group of trees on site boundary close spacing between trees of 1m ivy cover obscures stems die back evident within southernmost trees	36	3.4	C (i)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G7	Ash Fraxinus excelsior Blackthorn Prunus spinosa	5	upto 120	2	M	F	Tree group along site boundary understorey to mature trees sparse in sections with gaps dense undergrowth throughout predominantly blackthorn with occasional self seeded ash	7	1.4	C (ii)
G8	Sycamore Acer pseudoplatanus	3	upto 120	1	SM	F	Self seeded trees on bank of ditch regularly managed as part of ditch maintenance	7	1.4	C (ii)
G9	Ash Fraxinus excelsior	7	upto 240 160 160	3	M	F	Lapsed hedgerow trees along site boundary with adjoining carriageway two trees close spacing of 1m between them multi stemmed from base previously managed as part of hedgerow	49	4.0	C (ii)
G10	English Oak Quercus robur Goat Willow Salix caprea Silver Birch Betula pendula	3	upto 120	2	SM	P	Sporadic trees along site boundary no obvious management	7	1.4	C (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
HEDGEROWS										
H1	English Oak Quercus robur Hawthorn Crataegus monogyna Sycamore Acer pseudoplatanus	2	upto 6x 80	N - 2 S - 1 E - 2 W - 2	M	F	Maintained hedgerow along site boundary with adjoining carriageway maintained along edge of footpath outgrown into site predominantly hawthorn with occasional self seeded trees	17	2.4	B (ii)
H2	Elder Sambucus nigra Sycamore Acer pseudoplatanus	1.5	upto 150	1	EM	F	Maintained hedgerow along site boundary with adjoining property previously topped at 1.5m dense undergrowth throughout	10	1.8	C (ii)
H3	Privet Ligustrum ovalifolium	1.5	upto 60	0.5	SM	F	Recently planted hedgerow along site boundary	2	0.7	C (ii)
H4	Western Red Cedar Thuja plicata	1.5	upto 120	1	EM	F	Planted hedgerow along site boundary previously topped at 1.5m	7	1.4	C (ii)
H5	Hawthorn Crataegus monogyna	1.5	upto 80	0.5	EM	F	Planted hedgerow along site boundary	3	1.0	C (ii)
H6	Leyland Cypress Cupressocyparis leylandii	3	upto 150	N - 1 S - 1 E - 1 W - 0.5	EM	F	Planted hedgerow along site boundary heavily reduced back to site boundary	10	1.8	C (ii)



Specification for High Intensity Protection Barrier

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



Specification for Low Intensity Protection Barrier

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

APPENDIX B PROTECTIVE FENCING SPECIFICATIONS

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