

Arboricultural Impact Assessment and Method Statement



Symmetry Park Merseyside, RM2

27th July 2023



**Tyler
Grange**

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Contents:

Section 1: Introduction and Brief	1
Section 2: Arboricultural Impact Assessment	6
Section 3: Arboricultural Method Statement	8

Appendices:

Appendix 1: Methodology, Constraints, Mapping and Limitations
Appendix 2: Arboricultural Planning Policy
Appendix 3: Cascade Chart for Tree Quality Assessment
Appendix 4: Tree Survey Schedule

Plans:

12276/P16c: Tree Constraints Plan
12276/P19: Tree Retention and Removal Plan
12276/P20: Tree Protection Plan



Section 1: Introduction and Brief

- 1.1. Tyler Grange Group Ltd (TG) were appointed by Tritax Symmetry Merseyside 1 Limited to undertake a BS5837 Tree Quality Survey and development impact assessment at the Former Cronton Colliery off Fox's Bank Lane, south of the M62, Widnes, Prescot, L35 3SU (Easting: 347362 Northing: 389348) (hereafter referred to as 'the site') in 2020 to accompany a hybrid planning application (ref. 20/00494/HYB) for the proposed redevelopment for storage, distribution and associated ancillary units, including engineering earthworks to form a new country park and drainage attenuation ponds.
- 1.2. Approval is sought for reserved matters (scale, access, appearance, layout and landscaping) comprising the development of Unit 02, a speculative 272,091sqft B8 unit, plus gatehouse (300sqft), together with the provision of landscaping and infrastructure submitted pursuant to planning permission 20/00494/HYB.
- 1.3. This report provides an assessment of the proposals in the context of the extant planning permission and previous Arboricultural Impact Assessment (AIA) report (document ref. 12267/R03a). An Arboricultural Method Statement is included at Section 3 of this report to illustrate how the retained trees will be safeguarded during the construction phase of the proposed development.
- 1.4. This report has been guided by the recommendations set out within the British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations' (hereafter BS5837). A full BS5837 tree quality survey of the site was originally undertaken in May 2020. A further verification survey was completed in November 2022 to inform the Reserved Matters submission, ensuring an in-date baseline for the consideration of development implications and tree protection measures.

Site Description

- 1.5. The application site boundary measures 83.77 acres/33.90 hectares. This is demarcated on the Tree Constraints Plan ('TCP', ref. 12267/P16c) contained to the rear of this report which also covers the wider landholding in the applicant's control.
- 1.6. Land on-site predominantly comprises mixed farmland fields, including arable land with paddocks to the north, utilised for horse grazing at the time of the survey. The south and eastern portions of the site comprise the former colliery area. The mine buildings and associated built form have been demolished and the original colliery waste tips have been remodelled and planted with trees with swathes of established plantation woodland now covering much of the site. The site is also dominated by younger trees and scrub regeneration encroaching on areas of former open grassland.
- 1.7. The application site boundary and surrounding wider site area (within the applicant's control) includes several blocks of mature tree cover and tracts of semi-natural broadleaved woodland towards the site's boundaries. This includes Tree Preservation Order (TPO) woodland along the northern boundary and around Old Halsnead and Halsnead Farm (G1, G3, G6, G7); and along the embankment sloping down to the eastern and southern boundaries with Fox's Bank Lane and Cronton Road (G8). Individual broad-leaved trees are infrequent. However, two mature English oaks are located in the north of the development zone within horse grazing pasture (G4). Linear tracts of semi-natural broadleaved woodland also traverse the site from east to west, forming an almost continuous corridor of woodland around the site (G11, G13, G14). These areas of tree cover are likely remnants of the former Halsnead Estate and are dominated by sycamore *Acer pseudo-platanus* with stands of larger beech *Fagus sylvatica* and English oak *Quercus robur* present. Hazel *Corylus avellana*, elder *Sambucus nigra* and English



elm *Ulmus sp.* are present throughout with dense bramble and ivy cover being a feature of the largely unmanaged woodland areas.

- 1.8. The most valuable woodland resource associated with the site is The Old Wood (G15). The wider woodland is fragmented by the M62 motorway and is disturbed in places by dirt biking activities but maintains a good structure of mature trees (oak and sycamore are dominant). The woodland includes a ditch and pockets of marshy habitats and supports an understory comprising hazel hawthorn *Crataegus monogyna*, ash *Fraxinus excelsior*, elder, elm and alder *Alnus glutinosa*. The woodland is off-site to the west and adjoins arable farmland on-site.
- 1.9. The site has undergone woodland plantation over recent decades with belts of plantation woodland and younger regenerative scrub being present (G9, G10) across the central areas of the site. These areas are traversed by informal grass paths, areas of hardstanding and pockets of bare earth which are associated with the site's previous colliery use. This type of planting dates back to the partial restoration of the former colliery workings which included the planting of dense tree cover in the 1990s, with natural succession having since taken place. Such areas are dominated by silver birch *Betula pendula*, willow species *Salix sp* and sycamore, with field maple *Acer campestre*, ash, English oak and alder also present throughout. Areas of scrub are dominated by bramble or blackthorn *Prunus spinosa* with tree scrub left to regenerate with younger swathes of self-seeded birch, willow and alder.
- 1.10. At the time of the tree survey site visit Unit 01, located within the detailed area of the 2020 hybrid planning submission boundary (ref. 20/00494/HYB) was constructed, with associated ground works and consented tree clearance operations underway.

Planning Policy

- 1.11. The site falls within the local planning authority of Knowsley Council. A summary of the local planning policy context relating to arboricultural matters is provided at **Appendix 2** to the rear of this report for reference.

Tree Preservation Orders (TPOs) and Conservation Areas

- 1.12. As shown on the Knowsley Council 'My neighbourhood' online map, there is an arrangement of Tree Preservation Orders (TPOs) present on and adjacent to the site. An extract from the Council's website is included below at **Figure 1.1** for reference, demarcating the TPOs in dark green.
- 1.13. This includes:
 - TPO No.1 (1964) ref. 64/00001/TPO – covering surveyed tree groups G1, G3, G4.
 - TPO No.2 (1986) ref. 86/00002/TPO – covering surveyed tree groups G6, G7 (partially), G8 (partially), G13 (partially).
 - TPO No.4 (2007) ref. 07/00004/TPO – covering surveyed tree group G15 (The Old Wood).

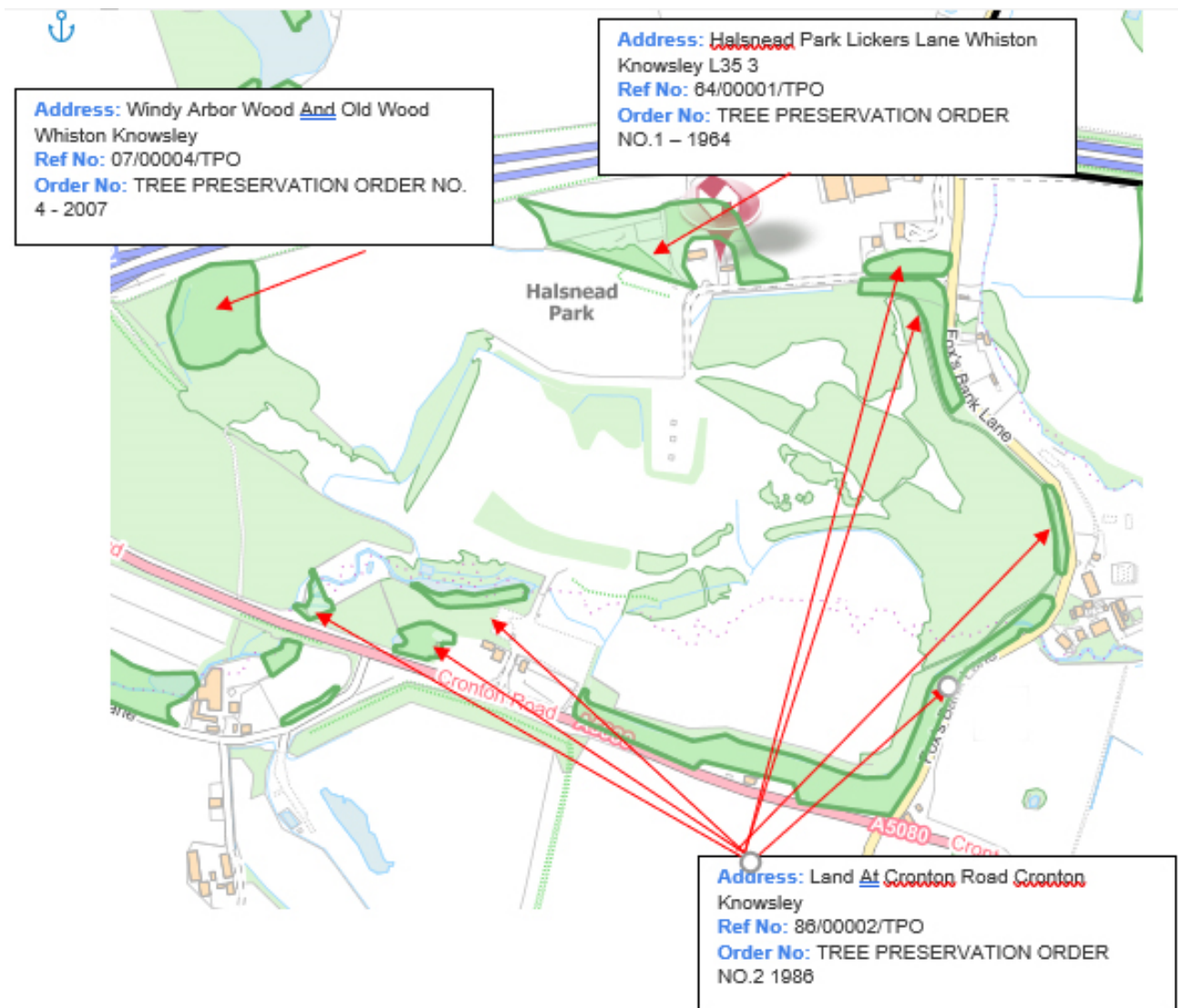


Figure 1.1: Extract from Knowsley Council's 'My neighbourhood' online TPO map

- 1.14. The site does not lie within a Conservation Area.

Ancient Woodland

- 1.15. The magic.gov.uk website identifies G15 as Ancient Woodland. This is 'The Old Wood' and is listed as covering 1.74ha and comprising Ancient & Semi-Natural Woodland. The woodland extends to the north-western site boundary and is dissected by the M62 motorway. No additional areas of ancient woodland are located within or immediately adjacent to the site.
- 1.16. In line with best practice, the consented outline development parameters established a 15m development buffer from the Ancient Woodland in accordance with Natural England guidelines. This is in order to minimise the effects of development on this irreplaceable and important habitat.

- 1.17. The Reserved Matters proposals maintain the required 15m development buffer in relation to the Ancient Woodland, ensuring no ground level alterations or built form will be located within 15m of the Ancient Woodland designation.

Tree Survey Summary

- 1.18. The baseline tree survey was completed in accordance with BS5837, and the methodology as detailed at **Appendix 1** to the rear of this report. In accordance with the above recommendations, the tree survey included all trees within / in influence of the site and the site boundaries that were over 75mm diameter at breast height (dbh).
- 1.19. Measured topographical survey data was used to inform the locations and surrounding context of the sites individual and groups of trees. Any trees not included within the topographical survey have been approximated using measurements taken during the tree survey and further informed by aerial photography.
- 1.20. A total of 15no. tree groups (G1 – G15) were identified during the tree survey of the site. The survey findings are illustrated on the TCP located at the rear of this report. The TCP shows the distribution of the trees surveyed together with details of their constraints to new development in accordance with BS5837, including:
- Tree Quality Gradings;¹
 - Root Protection Areas (RPA's);²
 - Tree canopy spreads;³
 - Tree Shading.⁴
- 1.21. Findings for each of the tree groups surveyed are detailed in the Tree Survey Schedule (see **Appendix 4**). 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 Grading Summary

- 1.22. The trees surveyed have been categorised using the 'cascade chart for tree quality assessment' (see **Appendix 3**) recommended by the BS5837. Grading subcategories (1, 2 and 3) are intended to reflect the arboricultural, landscape and cultural values, respectively. The grading system allows informed decisions to be made concerning the design and impact of potential development in relation to the arboricultural value of the trees surveyed.
- 1.23. Surveyed trees are a mix of Low Value (Category C) Moderate Value / Quality (Category B) and High Value / Quality (Category A).
- 1.24. Category A trees represent the site's principal arboricultural features and have been regarded as particularly important trees that are desirable to retain within a completed development; they have subsequently presented a major constraint towards the development proposals. Category A trees are denoted by a 'Green' tree canopy outline as illustrated on the TCP, and include:
- 'The Old Wood' Ancient Woodland beyond the western site boundary (G15); and
 - Mature woodland tree cover at Old Halsnead Hall to the north east of the site (G3).

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

- 1.25. Category B trees are denoted by a 'Blue' tree canopy outline as illustrated on the TCP. This level of classification has often been assigned to trees which attract a higher collective rating than they might as individuals, particularly in terms of their visual appearance where contributing to a cohesive group of trees. Category B trees predominantly include specimens or groups with maturity and / or good future potential, whilst not representing a tree or groups of trees with notable or distinct arboricultural functions.
- 1.26. Category C trees are trees represent trees of low arboricultural quality and value. Category C trees are denoted by a Grey tree canopy outline as illustrated on the TCP.



Section 2: Arboricultural Impact Assessment

- 2.1. This Arboricultural Impact Assessment has been undertaken to confirm the required tree losses and development impacts in response to the Reserved Matters proposals. The assessment is informed by a composite of the tree survey findings and the proposed submission drawings. The tree losses are shown on the Tree Retention and Removal Plan ('TRRP', ref. 12267/P19). The tree losses within the Reserved Matters red line boundary are also tabulated below, consistent with those agreed as part of the consented Hybrid Planning Submission ref. 20/00494/HYB.

Tree Ref	Commentary
G7, G8	Two areas of tree cover, denoted with a red hatch on the TRRP, are proposed for removal around the edge of the proposed Country Park area. The removals are required in order to implement proposed cut and fill works. These losses are additional to that which was approved under the original hybrid planning submission.
G9, G10, G13	Conflict with proposed ground works, access arrangement and development footprint (including parking, and ancillary development) requiring vegetation removal, but the extent of loss is consistent with the previous AIA / consented vegetation removals.
G11	Those areas of G11 requiring removal are consistent with the previous AIA / consented vegetation removals, but the RM submission now enables additional retention of woodland which was previously proposed for removal with the proposed cut and fill works being designed around the retained G11 tree stock to safeguard a stand of woodland west of Unit 2.
G14	2no. Oak trees and associated understorey will be removed as a result of the proposed cut and fill works. These losses are additional to that which was approved under the original hybrid planning submission.

Table 2.1 – Proposed Tree Removals

- 2.2. Aside from three pockets of additional on-site vegetation cover, hatched in red on the TRRP, the quantum and location of required vegetation removal is in accordance with the consented vegetation loss as agreed under planning permission 20/00494/HYB, ensuring no Category A tree cover is proposed for removal.
- 2.3. The Reserved Matters layout also now safeguards a greater portion of tree group G11, west of Unit 02, all of which was previously proposed for removal as part of the original hybrid submission.
- 2.4. In relation to The Old Wood Ancient Woodland specifically, the long-term LEMP for the Country Park will ensure that recreational pressure is managed appropriately in order to protect and maintain the integrity of this woodland. The establishment of the 15m development buffer will ensure that construction and operational pressures of the proposed development in relation to the Ancient Woodland are avoided.
- 2.5. Detailed soft landscape proposals have also been prepared to accompany the reserved matters planning submission, illustrating the arrangement of new trees, shrubs and grassland planting within the site. The proposals seek to mitigate for the removal of internal tree cover, following the principles for new Green Infrastructure established as part of the original outline development proposals.

Construction Stage Mitigation

- 2.6. Central to the mitigation of effects during construction and operation will be the implementation of the Arboricultural Method Statement (AMS) detailed at Section 3 of this report. The AMS provides a practical strategy for the protection of retained trees for the site preparation and construction stages of the development.
- 2.7. This Includes:
- specifications for tree protection barriers and ground protection;
 - procedures for any specialist construction techniques within RPAs; and
 - a Tree Protection Plan.



Section 3: Arboricultural Method Statement

- 3.1. The purpose of an Arboricultural Method Statement (AMS) is to safeguard the retained trees on site during the construction process. The following information sets out the methodology and approach for all proposed works that could affect such trees.
- 3.2. Compliance with this AMS will be a requirement of all relevant contractors associated with the development, including initial ground works and landscaping. Copies of this report will be available for inspection on site and all personnel shall be made aware of the key implications of the AMS, namely to ensure that during the construction phase of the development:
- The site manager and all other personnel are provided with this document;
 - All requirements of this Tree Protection Scheme are adhered to;
 - The Site Manager and site personnel are updated of any approved changes or variations to this document (approval for alterations must be obtained in writing from the LPA);
 - Site personnel must work in accordance with this document at all times, or in accordance with any approved variation; and
 - The tree protection measures are left in place until the construction phase of development is completed, except with the written consent of the LPA.

Tree Removals Works

- 3.3. Vegetation removal for the Reserved Matters submission is limited to the losses hatched in Red and Green as shown on the TRRP and as detailed at **Table 2.1** in Section 2 of this report.
- 3.4. Works to remove these trees must be carried out in accordance with the 'advance works' provisions set out above and in line with BS 3998:2010. Care should be taken during the removal vegetation to minimise damage to retained trees and disturbance to Root Protection Areas (RPAs).

Tree Protection Plan

- 3.5. The retained trees must be protected from unnecessary damage during the construction phase of the developments. Robust tree protection on development sites is of paramount importance if existing vegetation is to be retained successfully. The inevitable stress caused by development near existing trees can, if provision for adequate protection is not made, be a strain that can severely damage the trees or even result in their failure.
- 3.6. Tree protection measures are illustrated on the Tree Protection Plan ('**TPP**' Ref. 12267/P20) included to the rear of this report. The procedures and working methods are outlined further below.

General Site Precautions

- 3.7. The following points must be observed during both advanced works and the construction process:
- No fires will be lit on site;
 - Cutting down, uprooting, damaging or otherwise destroying any tree that is proposed for retention is prohibited;

- No access will be permitted inside tree protection / non-intervention areas (unless authorisation is obtained in writing from the LPA or overseen by project arborist). Appropriate signage will also be implemented along the tree protection fencing to highlight to contractors the need for careful working methods and importance of establishing construction exclusion zones;
- No materials, equipment or debris will be stored within the RPA at any time;
- If during construction there are any excessive levels of dust build-up on retained trees then trees must be hosed down immediately with a clean water supply;
- Holes for fence posts for permanent plot boundary fencing immediately adjacent to retained RPAs must be dug by hand, avoiding tree roots. 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;
- All construction or tree management works must be undertaken sensitively and with regard to the RPAs and canopies of adjacent retained trees. Any roots encountered which are smaller than 25mm in diameter can be pruned back, preferably to a side branch using a proprietary cutting tool. Roots larger than 25mm diameter should only be severed following on-site agreement with an arboricultural consultant, as they may be essential to the tree's health and stability;
- Prior to undertaking tree works, all risks associated with the work should be identified by carrying out a site-specific risk assessment. All works must be undertaken in accordance with BS3998:2010 (refer to BS 3998:2010 – Section 7) which provides recommendations for site management, best practice guidance for tree works and safety planning;
- Notice boards, telephone wires or other services must not be attached to any part of retained trees; and
- Materials which will contaminate the soil (e.g. concrete, cement, chemical toilets, diesel oil, vehicle washings etc.) must not be permitted within, or close to RPAs of retained trees unless required in order to implement the permanent plot boundary fencing. To avoid any associated damage or injury occurring to the trees as a direct result of contact with contaminants, works including cement mixing, re-fuelling and tool or machine washing will not be permitted within 20m uphill of any retained tree.

Watching Brief / Site Supervision

- 3.8. The engagement of an Arborist to perform a 'Watching Brief' can help ensure the successful retention of trees and implementation of an AMS. If deemed a requirement by the LPA as part of a suitably worded planning condition, it is suggested that a Watching Brief entails regular site visits by an appointed Arborist for the duration of the construction phase, with the frequency of visits to be agreed in writing with the LPA. Such visits should involve regular 'drop-in' visits by the appointed Arborist to oversee the tree protection measures and provide general tree advice when needed.
- 3.9. Site monitoring by a project Arborist would be appropriate during the following work stages in order to oversee:
 - Overseeing consented tree removals to avoid erroneous felling;

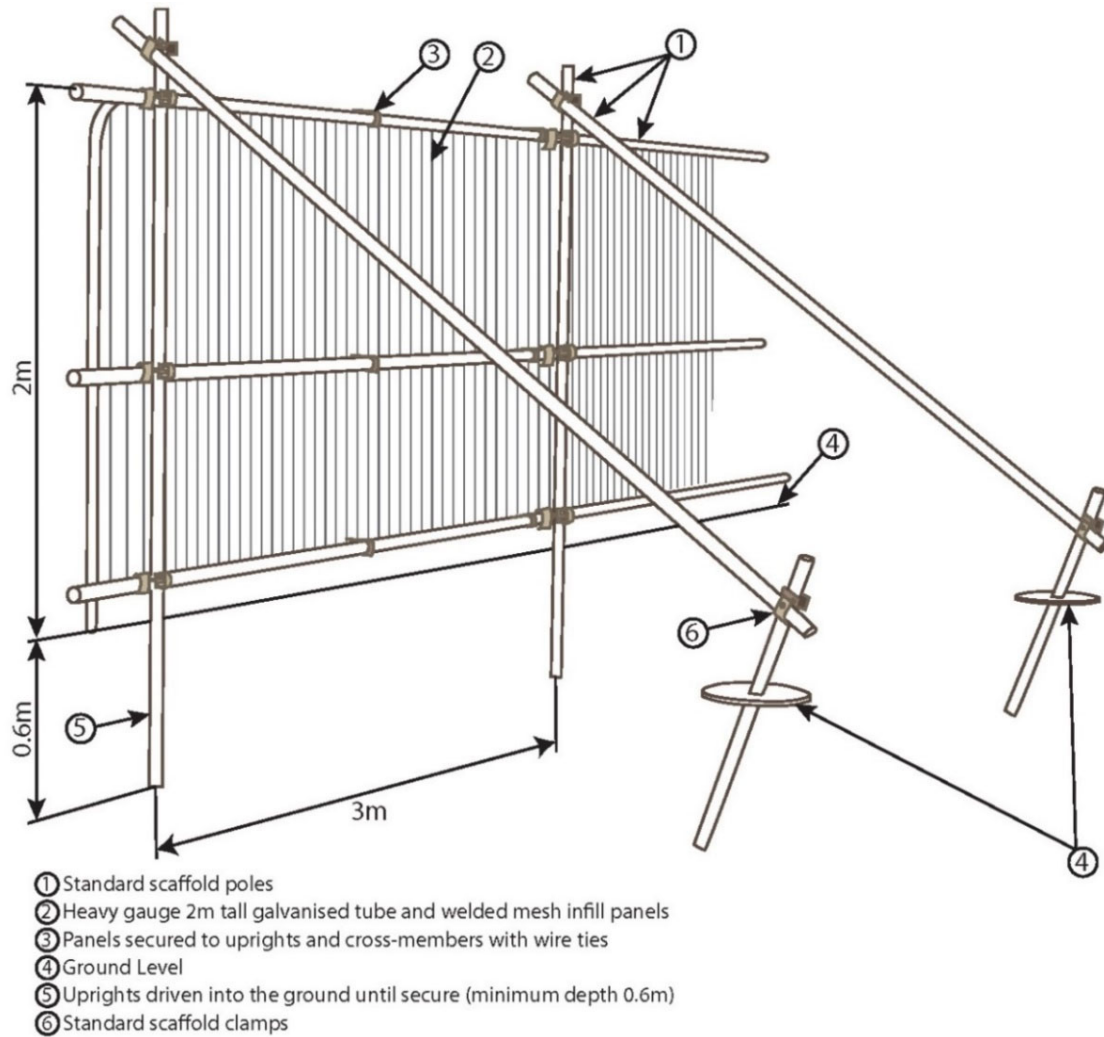
- Prior to severing any tree roots that may be encountered during ground works adjacent to retained RPAs that are larger than 25mm diameter; and
- Following implementation of BS5837 Tree Protection Fencing to confirm the alignment and specification.

3.10. It is the responsibility of the Site Manager to request (with sufficient notice) the attendance of an Arboricultural Consultant to oversee such work. It is advised that written confirmation of any visits and advice with supporting photographic evidence if appropriate would be issued to the LPA's Arboricultural Officer following the completion of each site monitoring visit.

Tree Protection Fencing

- 3.11. Once the consented tree removal has been undertaken, protective fencing will be erected in accordance with BS5837, as illustrated with the Magenta line on the TPP contained to the rear of this report. The tree protection fencing alignment includes for the establishment of the required 15m Ancient Woodland buffer area which must be safeguarded from any ground level changes or construction activity. The protective fencing must remain in position for the duration of the site-wide earthworks and construction activities.
- 3.12. If this fencing is required to be moved to enable access into the RPAs, the fencing will be moved by hand and ground protection boarding installed within any exposed areas of RPA to safeguard the rooting environment of trees no longer being bound by the tree protection fencing.
- 3.13. Where access into the RPAs is needed the implementation of Grassform (or similar) and Trakmats 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, which can arise from the single passage of a heavy vehicle, especially in wet conditions, so that tree root functions remain unimpaired. Any access across RPAs to undertake tree works must only be undertaken under the guidance of this AMS and overseen by an Arborist to ensure that suitable ground protection is in place.
- 3.14. The tree protection fencing consists of 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 (see extract of BS 5837 below).





- 3.15. Special attention is essential in maintaining the protective barrier during the construction phase, ensuring that it remains rigid and complete as well as fit for the purpose intended. In order to avoid disturbances to the protective barrier once it is installed, it should be inspected frequently, including during site visits by the project Arborist. Repairs shall be made immediately where required. The protective fencing will remain in position for the duration of the site-wide demolition and construction activities.



- 3.16. All-weather notices will be attached to the barriers with words such as 'Construction Exclusion Zone – No Access' (see signage examples below).



Protection of Areas of Proposed Landscaping

- 3.17. Principal areas of proposed planting and structural landscaping can also be safeguarded during the construction phase by secured plastic mesh fencing as this will still offer protection and a visual barrier to any construction works (see photographic example below). This will protect proposed planting areas from soil structure damage, ensuring that the ground can be kept in an adequate condition for growth during the construction phase.



Boundary Treatments / Scaffolding / Permanent Fencing

- 3.18. Where the scheme requires the erection of permanent boundary fencing or signage in close proximity to, or within, RPAs the existing ground levels will not be altered. No plant, vehicles or machinery will be allowed in the construction exclusion zone at any time unless suitable approved ground protection is used.
- 3.19. In the event that scaffolding is needed within the defined RPAs (i.e. within any areas between proposed buildings and established protective fencing) then inter-linked ground protection boards placed on top of a compression-resistant layer consisting of 150 mm depth of woodchip laid onto a geotextile membrane must be implemented to safeguard the rooting environment with RPAs. Alternatively, the implementation of Grassform (or similar) and Trakmats can also provide a gripped and lightweight ground protection solution to safeguard the rooting environment of trees.
- 3.20. In all cases, the objective should be to avoid compaction of the soil, which can arise from the single passage of a heavy vehicle, especially in wet conditions, so that tree root functions remain unimpaired.
- 3.21. Ground protection must be installed prior to the commencement of any operations within the RPAs and any excavation works undertaken using hand tools to avoid damage to tree roots. Using a brush will expose roots cleanly before deciding whether it will be necessary to prune. Care must be taken not to damage roots including the roots' bark. Any roots encountered which are smaller than 25mm in diameter can be pruned back, preferably to a side branch using a proprietary cutting tool. Roots larger than 25mm diameter should only be severed following on-site agreement with an arboricultural consultant, as they may be essential to the tree's health and stability.
- 3.22. Fence posts will be located to avoid tree roots (identified during trial digging by hand) and holes within the RPAs must be lined with an impermeable membrane to reduce the risk of contamination where concrete is to be implemented.

Amendments

- 3.23. Issues can arise on development Sites which require amendments to the previously agreed tree protection details. Any amendments to the AMS will be discussed with the Arboricultural Consultant and agreed in writing with the LPA prior to being implemented. Copies of paperwork relating to any amendments shall be attached to the site AMS to provide a definitive record of what has been approved.



Procedures for Incidents

3.24. If any breach of the approved tree protection measures occurs (including any accidental / unauthorised damage to the limbs, roots or trunk of trees, the discharge / spillage of toxins and waste within the RPAs, or unauthorised breaching / failure to implement a tree protection barrier or construction exclusion zone or prescribed arboriculturally sensitive working methodology):

- The site manager must be informed immediately;
- The Local Planning Authority Tree officer (or other Planning Officer) and project Arborist;
- Swift action must be taken to halt the breach and prevent any further breach; and
- All preventative action and details of agreed remedial works must be recorded by the project Arborist and reported to the LPA.



Appendix 1: Methodology, Constraints, Mapping and Limitations

Field Work

- A1.1. 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).
- A1.2. 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.
- A1.3. 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

- A1.4. Species are listed by their common name, both in the schedule and in the report text.

Height and Stem Diameter

- A1.5. 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 typography 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

- A1.6. 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.
- A1.7. The measured canopy shapes have been plotted on the **Tree Constraints Plan (TCP)** 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.
- A1.8. 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

A1.9. 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

A1.10. 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.

A1.11. 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.

A1.12. 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

A1.13. The value of trees has been assessed in accordance with the BS5837 Cascade Chart for Tree Quality Assessment (See **Appendix 3**). Grading subcategories (1, 2 and 3) reflect arboricultural, landscape and cultural values respectively.



Root Protection Areas

- A1.14. 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.
- A1.15. 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.
- A1.16. 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; and
 - d) the likely tolerance of the tree to root disturbance or damage, based on factors such as species, age, condition and past management.
- A1.17. 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

- A1.18. 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 4** 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.
- A1.19. 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.
- A1.20. 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

- A1.21. 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.
- A1.22. 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

- A1.23. Any alteration to the application site or development proposals could change the current circumstances and may invalidate this report and any recommendations made.
- A1.24. 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.
- A1.25. 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 2: Arboricultural Planning Policy

- A2.1 Under the Town and Country Planning Act 1990 (as amended) the requirement to consider trees as part of development is a material planning consideration and will be taken into account in the determination of planning applications. Arboricultural planning policy that relates to the site is set out by policy at a National and Local level.

National Planning Policy

- A2.2 The consideration for existing trees and woodlands in relation to planning and new development is set out within Sections 12 and 15 of the NPPF published in July 2021.
- A2.3 Section 12, paragraph 131 states that *“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, 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.”*
- A2.4 Section 15, paragraph 174 states that *“Planning policies and decisions should contribute to and enhance the natural and local environment by: Subsection B; “recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland”*
- A2.5 Section 15, paragraph 180 states that *“When determining planning applications, local planning authorities should apply the following principles:” Subsection C; “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 compensation strategy exists”.*

Local Planning Policy

- A2.6 The site falls within the administrative borough of Knowsley Council and has been allocated for development in the Local Plan Core Strategy 2016. In addition to the allocation, the site is also the subject of the Halsnead Garden Village Supplementary Planning Document (SPD) the purpose of which is to guide the comprehensive development of land to the south of Whiston and Land South of the M62 as a Sustainable Urban Extension (SUE). Applicable policies relating to arboricultural matters are summarised below.

Knowsley Local Plan Core Strategy (January 2016)

- A2.7 Strategic Objective 8: Green Infrastructure and Rural Areas seeks to maintain and enhance the most valuable aspects of Knowsley’s green and open spaces. The objective is: *“To support and strengthen the role of Knowsley’s Green Infrastructure (in rural and urban areas), promote biodiversity, and maintain the character of rural settlements including Cronton, Tarbock and Knowsley Village.”*
- A2.8 Policy CS 2 Development Principles outlines a set of development principles for proposals to adhere to. This includes Principle 4: *“To recognise environmental limits, protect and enhance environmental assets, enhance local character, and promote quality of place”.*



A2.9 Policy CS 8 Green Infrastructure states Knowsley's existing Green Infrastructure and its beneficial functions will be protected, managed, and/or enhanced, to *"preserve the character and function of historic environments and valued landscapes"*.

A2.10 Policy CS 21 Greenspaces and Trees references Knowsley's Green Strategy vision: *"A linked, preserved and enhanced network of good quality greenspaces that excite and inspire communities and contribute towards the creation of vibrant, healthy and sustainable neighbourhoods across Knowsley"*. The policy states that the Council will support improvements to existing and new areas of greenspace in accordance with best practice standards.

Halsnead Garden Village Masterplan SPD (June 2017)

A2.11 The site is located within the above SPD area. Knowsley Council requires that all planning applications at Halsnead demonstrate how they address a range of Strategic Objectives, including:

A2.12 SO5: Creating a strong green space framework looks to create *"a well-connected green and blue infrastructure network, comprising linked multi-functional spaces that bring a wide variety of benefits including ecology and biodiversity, drainage, recreation, health, connectivity and sustainability. Using the landscape structure of the former Halsnead Park estate to establish a highly distinctive, high quality setting, and supporting the delivery of a new Country Park on the former Cronton Colliery."*

A2.13 Section 5 of the SPD identifies key issues and opportunities associated with the site and context which form a strong evidence base to master planning proposals and requirements. The document highlights the *"opportunity to provide new onsite green and open space in balance with the enhancement of existing green infrastructure assets in accordance with Garden Village principles"*.

A2.14 Section 6 of the SPD outlines a Development Framework which creates the key principles and parameters for development.

A2.15 Key Requirement HSPD8: Connected green infrastructure aims to employ a green infrastructure network which contains open spaces that have been holistically planned and designed.

Trees and Development SPD (June 2016)

A2.16 The Trees and Development SPD provides guidance relating to:

- *Promoting best practice for proposals incorporating trees and landscaping within new developments;*
- *Development proposals affecting existing trees, woodlands and other vegetation;*
- *Requirements for detailed survey of all existing trees; and*
- *Requirements for provision of replacement trees.*

A2.17 The SPD reaffirms the requirement for a BS5837:2012 tree survey to accompany and inform planning applications, adding that *"Knowsley Council encourages consideration of existing trees and hedgerows at the earliest possible design stage to allow successful integration of any proposed development. Trees and their possible retention should always be a driving factor in influencing the layout of the development site. In order to positively integrate trees into a development, it is crucial to provide enough space in the design for trees to mature, and therefore protection measures during the whole construction phase would need to be implemented"*.

A2.18 In considering the requirement for replacement planting, the document states that *"Any replacement planting will have to take into account the number; sizes and species of the trees lost and should contribute to the extension of tree and woodland cover across the Borough"*.



Appendix 3: Cascade Chart for Tree Quality Assessment



Appendix 3: 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	
		Mainly Arboricultural Values	Mainly Landscape Values		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



TREES TO BE CONSIDERED FOR RETENTION				
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 4: Tree Survey Schedule



Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Notes	RPA Radius
G1	Holly, Elder, Hawthorn, Pine, Sycamore, Oak	10 - 12m	to 400	0	Y - M	Fair	Fair	B.2	Stand of field-side trees with Holly, Elder and Hawthorn understorey. Wind swept form, leggy trees with standing deadwood. Declining Sycamore to west. <i>Protected by TPO Ref No: 64/00001/TPO), Order No: TREE PRESERVATION ORDER NO.1 - 1964.</i>	av. 4.8m
G2	Birch, Sycamore, Rowan, Hawthorn, Field Maple, Oak, Pine, Cherry, Goat Willow, Beech	10 - 12m	av. 200	0	EM - M	Good	Fair - Good	B.2	Linear belt of roadside embankment trees / structure plantation aligning M62 corridor on north facing slope. Suppressed and co-dominant crowns owing to stem density with several failed birch / fallen trees. Timber fence line to site-side. Consistent screen with bramble understorey and scattered larger Willow and Sycamore, typical form for age and context.	av. 2.4m
G3	Leylandii, Lime, Sycamore, Ash, Hawthorn, Beech, Pine, Elder, Holly, Laurel, Oak	to 18m	to 500	0	Y - M	Fair - Good	Fair - Good	B.2	Naturalised wooded area with ivy clad mature boundary trees and self-seeded scrubby infill vegetation comprising mixed mature garden trees and standing deadwood with younger stands of ornamental planting to residential curtilage of Old Halshead. Track and car parking / access road to site side RPAs. <i>Protected by TPO Ref No: 64/00001/TPO), Order No: TREE PRESERVATION ORDER NO.1 - 1964.</i>	to 6m
G4	Oak (2x)	12m	to 975	1.50	M - FM	Fair - Good	Fair - Good	B.2	Two stag-headed field-side Oaks. Pastoral context, lower canopy damage and wear with canopy deadwood throughout lower crowns. Canopy suppression to eastern Oak, scrubby margins open growing within parcel of horse grazing pasture / rough grassland and ruderal vegetation. <i>Protected by TPO Ref No: 64/00001/TPO), Order No: TREE PRESERVATION ORDER NO.1 - 1964.</i>	to 11.7m
G5	Hawthorn, Ash, Sycamore, Laurel	1.5m - 2.5m	100	0	Y - EM	Fair - Good	Fair	C.2	Linear bramble clad hedgerow. Hardstanding to site-side of stems. Field-side enclosure with typical form.	1.2m
G6	Beech, Sycamore	18 - 20m	av. 300	0	EM - FM	Fair	Fair	B.2	Stand of semi natural broadleaved woodland stock. Scattered fully mature Beech with younger sycamore and self-seeded scrubby understorey with dense bramble. Naturalised form. <i>Protected by TPO Ref No: 86/00002/TPO), Order No: TREE PRESERVATION ORDER NO.2 - 1986.</i>	3.6m
G7	Elder, Hawthorn, Birch, Holly, Sycamore, Ash, Oak, Lime, Rowan, Field Maple, Holly	14 - 16m	av. 100 - 150, larger Beech to 900	0	EM - FM	Fair - Good	Fair	B.2	Strip of semi-natural broadleaved mature TPO woodland trees, including larger stands of Beech of note to the north. Moderate value as a collective feature. The woodland is dominated by beech, sycamore and oak and forms a component of almost continuous woodland around the site. Typical understorey species include rowan, elder, alder, hazel and holly. <i>Protected (partially) by TPO Ref No: 86/00002/TPO), Order No: TREE PRESERVATION ORDER NO.2 - 1986.</i>	av. 1.2m
G8	Alder, Elder, Hawthorn, Pine, Birch, Holly, Sycamore, Ash, Oak, Lime, Rowan, Field Maple, Osier, Hazel, Gorse, Wild Cherry, Elder	6 - 10m	75 - 150	0	Y - EM	Fair - Good	Fair	C.2 / B.2	Inner areas of established broadleaved plantation woodland with some scattered pine. Restoration planting, approximately 20 years old. Species present include willow, alder and birch which are dominant throughout with oak, ash, sycamore, hawthorn, field maple and rowan typically present. Traversed by trekking paths and bridleways. Semi-natural broadleaved woodland exists to the edges of the site, including along the embankment sloping down to the eastern boundary with Fox's Bank Lane, comprising stands of periphery TPO tree stock to east.	av. 1.2m
G9	Birch, Goat Willow, Alder	4 - 6m	50 - 75	0	Y - EM	Fair - Good	Fair	C.2	Regenerating birch and willow plantation trees and marshy grassland vegetation forming dense swathe of internal tree cover across former mining area. If left unmanaged will succeed to scrub. Self-set trees, naturalised and largely unmanaged.	av. 0.9m
G10	Birch, Goat Willow, Alder, Hawthorn, Sycamore, Elder, Gorse, Buddleia, Rowan, Hazel, Oak, Aspen	4 - 6m	75 - 100	0	Y - EM	Fair - Good	Fair	C.2	Plantation trees and marshy grassland / swamp vegetation forming dense swathe of internal tree cover. Self-set trees, naturalised and largely unmanaged. Generally younger stock of lower value, although some collective merit as dense wooded vegetation cover. If left unmanaged will succeed to scrub.	av. 0.9m

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Notes	RPA Radius
G11	Alder, Sycamore, Willow, Birch, Hazel, Rowan, Goat Willow, Wild Cherry, Aspen, Oak	8 - 12m	300 - 400	0	EM - M	Fair - Good	Fair	B.2	Linear strip of semi-natural broadleaved field-side tree cover. Crowns cut back and lifted along field edge, ploughed fields to north and western edge of group. Moderate value as a collective feature.	to 4.8m
G12	Willow, Birch, Oak, Hawthorn, Cypress	10 - 12m	100 - 150, larger Oak to south 300.	0	Y - EM	Fair	Fair	C.2	Tract of residential boundary trees and self-set vegetation aligning site boundary fence line. Hard standing across on-site RPAs. Recent clearance works and onset of brambles, unsympathetic pruning to lower crowns reduces quality and value.	av. 1.2m
G13	Oak, Willow, Birch, Hawthorn, Gorse	12 - 14m	av 100, to 300	0	Y - M	Good	Fair - Good	B.2	Mine waste, Cronton Local Wildlife Site. Semi-natural broadleaved mature woodland trees forming a component of almost continuous woodland around the site. Urban pressures including some tipping and settled influence. <i>Protected (partially) by TPO Ref No: 86/00002/TPO, Order No: TREE PRESERVATION ORDER NO.2 - 1986.</i>	av. 1.2m
G14	Oak, Willow, Birch, Hawthorn, Hazel	8 - 12m	200 - 300	0	Y - EM	Fair	Fair - Poor	C.2	Tract of field side trees, disturbance effects of ground levelling, unmanaged with generally poor form. Scattered oak of greater maturity, bramble understorey with standing deadwood.	av. 2.4m
G15	Ash, Alder, Oak, Sycamore, Hawthorn, Hazel, Elm, Birch, Willow, Blackberry, Elder	12 - 14m	to 500	0	Y - FM	Good	Good	B.2 / A.2	Field side mature broadleaved woodland, including "The Old Wood" Ancient Woodland designation to north west. No discernible veteran candidates on site-side edge. Well developed and has a good structure of mature trees. Some larger oak and ash to 500 dbh, with dominant sycamore infill and stands of hazel coppice. Dense understorey of hawthorn and elder with ground flora including bramble, bluebell, nettle and bracken. Ash and oak saplings are present throughout demonstrating succession and good health, along with young birch, sycamore and oak throughout the woodland area. <i>Protected (partially) by TPO Ref No: 07/00004/TPO, Order No: TREE PRESERVATION ORDER NO.4 - 2007.</i>	15m from ancient woodland, 6m from larger individual stems outside the ancient woodland area

Plans

12276/P16c: Tree Constraints Plan

12276/P19: Tree Retention and Removal Plan

12276/P20: Tree Protection Plan





- Key:
- RM2 Site Boundary
 - Wider land in Applicant's control
 - 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 a poor condition, unlikely to be retained as living specimens within the next 10 years
 - Approximate Extent of BS5837 Calculated Root Protection Areas (RPAs)
 - The Old Wood Ancient Woodland designation (transcribed from magic.gov.uk website)
 - 15m development offset from Ancient Woodland

Project Name

Symmetry Park Merseyside, RM2

Drawing Title

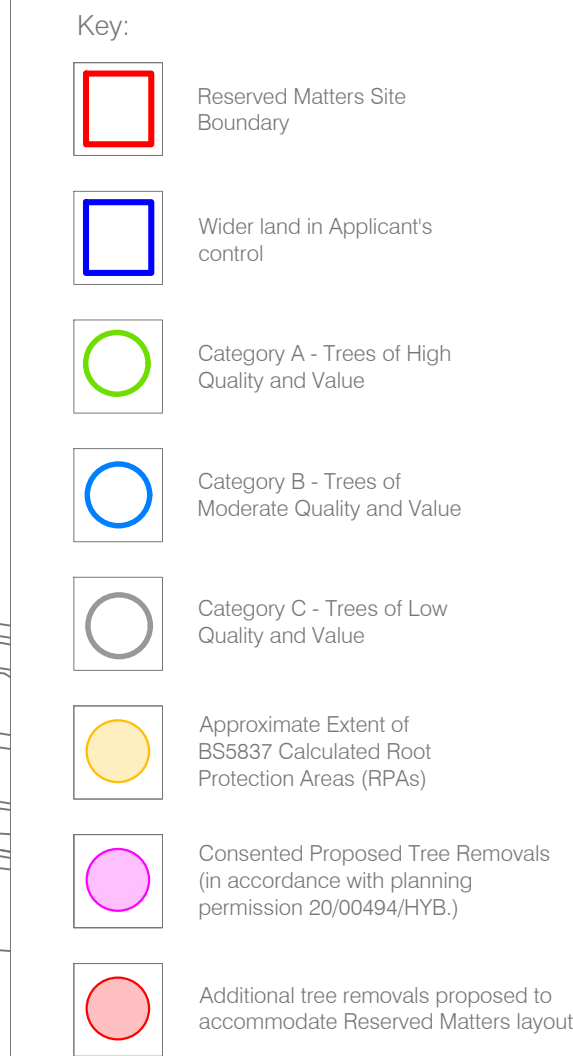
Tree Constraints Plan



Scale 1:2000 @ A1 Date July 2023

Checked by JJ

Drawing No. 12267/P16c



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Scale 1:2000 @ A1	Date July 2023
Checked by JJ	
Drawing No. 12267/P19	



- Note: The magenta fencing alignment illustrates the principle of ring-fencing and safeguarding retained areas of tree cover during construction (including initial ground works). The final location of the fencing will be agreed on-site with the attending arboricultural consultant to ensure a practical and proportionate fencing arrangement (notably where the presence of site features / levels may require minor alterations to inform the final fencing placement).

The tree protection fencing is also only required to be in place to protect trees within influence of specific phases of work.



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