Garth Wymott 2

Arboricultural Impact Assessment and Method Statement

On behalf of The Ministry of Justice

Tyler Grange

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Contents:

Appendices:

Plans:

Summary

S.1. This Arboricultural Impact Assessment and Method Statement has been prepared by Tyler Grange Group Limited on behalf of The Ministry of Justice to accompany a Hybrid Planning Application for new development on land adjacent to HMP Garth and HMP Wymott.

S.2. This report provides details of a tree survey and assesses the impact of the proposed development towards existing trees. This report has been guided by the recommendations set out within the British Standard BS5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations'.

S.3. The site comprises of a series of grassland fields and pockets of woodlands extending north-eastwards. Adjacent to Willow Road is a line of Hybrid Black Poplar. No trees of particular maturity or arboricultural value were identified, reflecting the low and moderate value classifications across the site. The tree survey has been considered during the process of designing the layout of the development with respect to avoiding impacts towards trees where possible, whilst still meeting the requirements of the prison layout.

S.4. The removal of trees is required which include trees of low and moderate value. This includes an area of early mature woodland. The tree removals required are necessary for the development of the main prison area.

S.5. The development will deliver substantial new soft landscaping, throughout the site including new woodland areas. The extent of new planting is considered proportionate to compensate for the required tree losses and offers benefits in terms of extending and diversifying the current arboricultural resource.

S.6. This report also identifies where construction work will be required near to trees and provides recommendations to protect them by way of a Tree Protection Plan and Arboricultural Method Statement. Should consent be granted, it is recommended that the protection of trees as detailed within this report is secured by way of a suitably worded planning condition.

Section 1: Introduction

Purpose

1.1 This Arboricultural Impact Assessment and Method Statement has been prepared by Tyler Grange Group Ltd on behalf of The Ministry of Justice to accompany a Hybrid Planning Application seeking: Outline planning permission (with all matters reserved except for access, parking and landscaping) for a new prison (up to 74,531.71 sqm GEA) (Class C2A) within a secure perimeter fence following demolition of existing buildings and structures and together with associated engineering works; Outline planning permission for a replacement boiler house (with all matters reserved except for access); and Full planning permission for a replacement bowling green and club house (Class F2(c)).

Context

1.2 This report focuses on the proposed new prison located on Land to the north of HMP Wymott. It is understood that the proposed new bowling green (Land to the south of HMP Wymott) and the proposed new boiler house (Land between HMP Wymott and HMP Garth) are situated to not affect trees.

1.3 The new prison will be designed and built to be highly sustainable and to exceed local and national planning policy requirements in terms of sustainability. MoJ's aspirations include targeting near zero carbon operations, 10% biodiversity net gain, and at least BREEAM 'Excellent' certification, with endeavours to achieving BREEAM 'Outstanding'.

1.4 The proposed development and landscaping works are shown on the Proposed Comprehensive Landscape Masterplan at **Appendix 1**. This includes the wider site area within the planning application red line boundary for Biodiversity Net Gain improvements.

1.5 This report provides details of a tree survey of the site and assesses the impact of the proposed development towards existing trees. This report has been guided by the recommendations set out within the British Standard BS5837:2012 'Trees in Relation to Design, Demolition and Construction – Recommendations' (hereafter referred to as BS5837).

1.6 The application is to be submitted to Chorley Council. Chorley Councils local planning policy and national planning policy pertinent to trees is set out at **Appendix 2**.

Section 2: Tree Survey Findings

Site Description

2.1 The application site boundary is shown on the Proposed Site Plan (**See Appendix 1**) and the Site Location Plan (as extracted below at Figure 1).

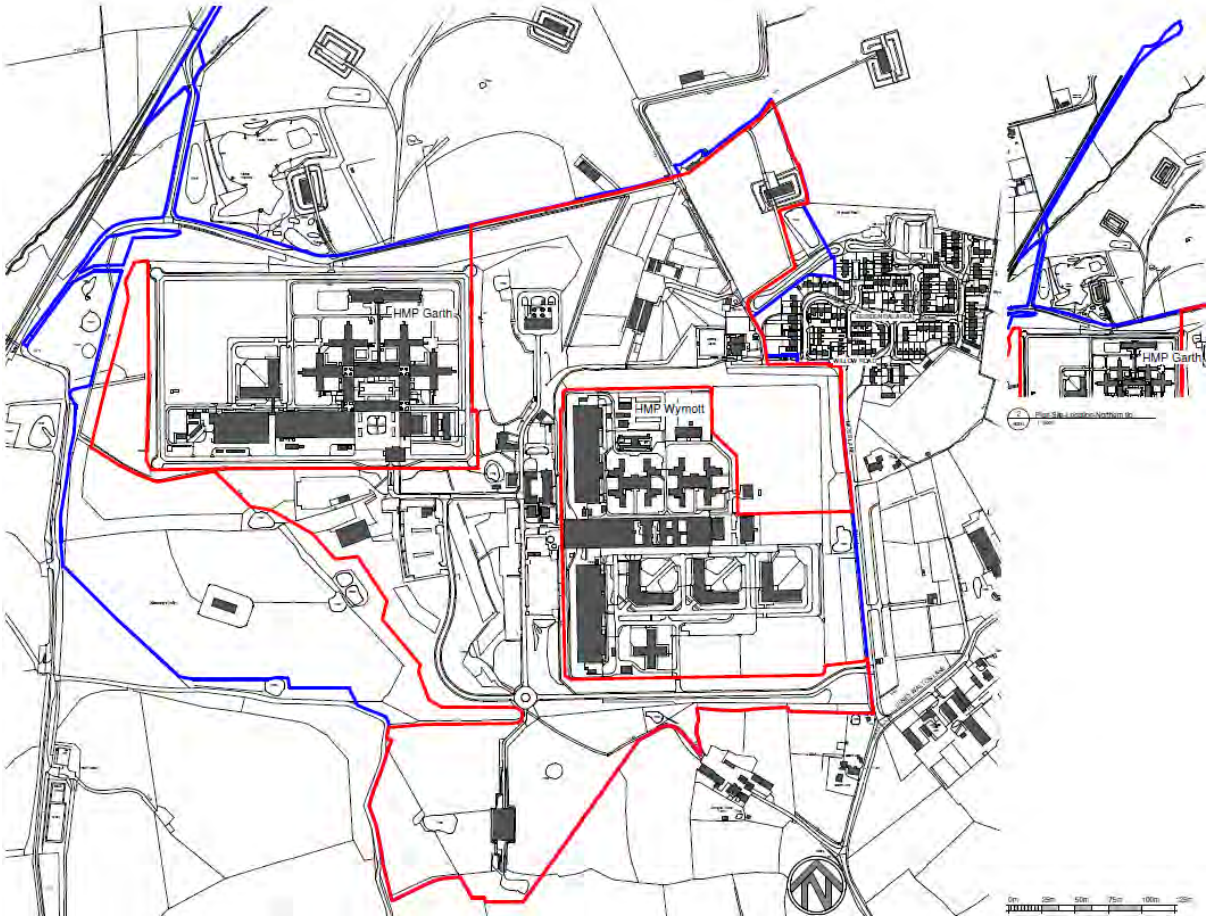

Figure 1. Site Location Plan

2.2 The survey included the Land to the north of HMP Wymott as shown at Figure 2 overleaf. The tree survey excluded the wider red line which incorporates land for biodiversity enhancement, a proposed new bowling green (Land to the south of HMP Wymott) and the proposed new boiler house (Land between HMP Wymott and HMP Garth), the nature and location of which do not affect existing trees.

Figure 1. Indicative Survey Boundary (Imagery © Google Maps, 2021).

Tree Survey Summary

2.3 A tree survey was completed in accordance with BS5837 and the methodology as detailed at **Appendix 3**. The survey was completed by a suitably qualified tree surveyor on 13th November 2020. A measured topographical survey (supplied by others) was used to inform the location of trees and their surrounding context.

2.4 The distribution of the trees and hedgerows surveyed is illustrated on the **Tree Constraints Plan (TCP) (See Plan 1)**, which includes plotted details of their constraints to new development in accordance with BS5837, including:

- Tree quality gradings[1];
- Root Protection Areas (RPAs)[2];
- Tree canopy spreads[3]; and
- Tree shading[4].

[1] The value of arboricultural features surveyed in accordance with the methodology set-out Appendix 3.
[2] a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority. See further explanation at Appendix 3.
[3] Dimensions of the trees crown spread and clearance from ground level. See further explanation at Appendix 3.
[4] Shade cast by existing trees which may affect the availability of sunlight and daylight within a new development. See further explanation at Appendix 3.

2.5 Findings for each of the trees surveyed are detailed in the Tree Survey Schedule (**See Appendix 5**). This provides a tabulated record of the trees surveyed, including; reference numbers, species composition, tree dimensions, life stage, physiological and structural condition, and the arboricultural value of each survey entry.

2.6 The survey recorded a total of eighteen individual trees, eighteen tree groups and five hedges. The tree cover comprises a mix of broadleaf field boundary tree groups, hedgerows, scattered self-set trees and groups and a dense wooded area.

Tree Category Grading

2.7 The trees surveyed have been categorised using the 'cascade chart for tree quality assessment' (**See Appendix 4**) recommended by the BS5837. The grading system allows informed decisions to made concerning the design and impact of the development in relation to the arboricultural value of the trees surveyed.

2.8 A breakdown of category gradings across the trees, groups and hedgerows surveyed is provided in **Table 1** below.

Table 1: Category Grading of Arboriculture Features

	Category U	Category A	Category B	Category C
Individual Trees	T5, T24, T38	None	T1, T3, T4, T10, T14, T15, T16, T17, T20, T22, T23, T28, T30, T31, T32, T34, T35, T37, T39, T40	T2, T6, T7, T8, T9, T11, T12, T13, T18, T19, T21, T25, T26, T27, T29, T33, T36
Groups of Trees	None	None	G1, G4, G5, G6, G7, G8, G10, G11, G12, G13, G17, G18, G20, G21, G22	G2, G3, G9, G14, G15, G16, G19
Hedges	None	None	H7	H1, H2, H3, H4, H5, H6, H8
Woodlands	None	None	W1	None

2.9 None of the trees surveyed were considered to be of 'high' arboricultural value (Category A) and no tree veteran or ancient trees in terms of age class were identified. There are therefore no trees of such significant merit that represent a major constraint to development on the site.

2.10 Trees of moderate arboricultural value (Category B) are denoted by a 'Blue' tree canopy outline as illustrated on the Tree Constraints Plan. They signify those that provide moderate arboricultural value to the site have been considered as desirable to retain as part of development where possible.

2.11 Trees of low arboriculture value (Category C) trees are denoted by a 'Grey' tree canopy outline as illustrated on the TCP. These includes trees and groups with limit arboricultural merit or those that provide transient benefits which may be readily replaced in the existing context. The subsequently presented a reduced arboricultural constraint to the proposed design. The retention of low value

trees was however recognised as desirable where possible as they contribute to the overall extent of tree cover across the site, however, there loss is considered more appropriate where it allows the retention of moderate value trees.

2.12 Three trees were identified as being unsuitable for retention due to poor condition, this includes trees T5, T24 and T38.

Tree-related Designations

2.13 Following a background check of available online mapping as well as email confirmation (conducted on the 20th November 2020), the presence or absence of tree-related designations is detailed in **Table 2** below.

Table 2: Tree-related Designations

Designation Type	Tree Reference Numbers
Tree Preservation Order	None
Conservation Area	None
Ancient Woodland	None
Woodland Habitat [5]	Woodland W1 - Priority Habitat Inventory (Deciduous Woodland) Sections of Groups G11 and G7 - Priority Habitat Inventory (Deciduous Woodland)

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

Section 3: Arboricultural Impact Assessment

3.1. The baseline tree constraints as detailed previously formed part of the overall design phase of the proposed development layout with respect to minimising impacts of arboricultural features. An arboricultural impact assessment has been completed based on a composite overlay of the proposed Landscape Masterplan and the TCP. The overlay is illustrated on the Tree Retention and Removal Plan (TRRP) and Tree Protection Plan (TPP) located at the rear of this report (**See Plan 2 and 3**).

Tree Retention and Removal

3.2. The TRRP (**See Plan 2**) identifies existing trees to be retained, removed, or pruned to facilitate the development and associated new landscaping. Further details are provided in **Tables 3 and 4** below.

Table 3: Proposed Tree Removal

Category Grading	Individual trees	Groups of trees	Hedgerows	Woodland groups
Category A	None	None	None	None
Category B	T1, T10, T14, T15, T20, T30, T31, T32, T34, T35, T37	G4, G5, G6, G12, G13, G17, G18, G20	H7	W1 (partial)
Category C	T8, T9, T11, T12, T13, T18, T19, T21, T25, T26, T27, T33, T36	G2, G3, G14, G16, G19	H1, H2, H3, H4,	None
Category U	T24	None	None	None

Tree Removal and New Planting Commentary

3.3. To enable the proposed development there will be a loss of circa 21,550sq.M of existing tree canopy cover. This includes low and moderate value trees. The removal of such tree cover is considered unavoidable to accommodate the layout of the new prison area, which has parameters extending much of the internal parts of the site where trees are present. In response to the required tree removals, there will be circa 15,050sq.M of new tree planting. This presents a shortfall of circa 6,500sq.M of tree cover. However, the wider landscape strategy for the site includes for an array of new habitat typologies to achieve a 20% biodiversity net gain. The land take associated with new habitat creation may well accommodate new trees; however, this would impact the delivery and quality of a multi-functional green and blue infrastructure strategy, which includes substantial new tree planting.

3.4. Local planning policy BNE10 of The Chorley Local Plan 2012 – 2026 (adopted 2015) relating to the removal of trees for new development states that "*Replacement planting will be required where it is considered that the benefit of the development outweighs the loss of some trees or hedgerows. Replacement planting will be required where it is considered that the benefit of the development outweighs the loss of some trees or hedgerows. Tree planting will be required as part of new*

development proposals and an associated maintenance scheme. Tree Preservation Orders will be used to protect trees of landscape or townscape significance.". The ratio of new tree planting to compensate for the removal of existing tree is not stipulated, however, it is considered that an appropriate balance has been met between the removal of trees, and new tree planting alongside the delivery of wider biodiversity benefits.

3.5. Tree removals are largely contained to the internal parts of the site, with trees at the boundaries being retained and protected, particularly to the east where they adjoin Moss Lane and a residential development context. The amenity function provided by these trees to the wider locality will therefore be preserved, including their function as a screen and green enclosure to the site.

3.6. The proposed Comprehensive Landscape Masterplan (**See Appendix 1**) shows where new soft landscaping will be delivered across the site. New tree planting is proposed throughout the site consisting of formal trees within the parking area and around the proposed buildings. Within the northeast corner a new woodland will be planted which will be continued along the northern boundary to link in with the existing trees in the retained section of woodland W1.

3.7. The landscape strategy overall considers, protects, and reinforces existing habitat and vegetation where possible and the proposed soft landscape scheme aims to maximise Biodiversity Net Gain whilst taking into account arboricultural, ecological and landscape / visual requirements within the site constraints.

Tree Pruning

3.8. No pruning works to retained trees is considered necessary to facilitate the development. It is recommended that a post-development review if tree condition is completed to identify any requirements for remedial tree pruning to ensure trees are retained in a safe condition. This includes a review of tree canopies at the newly formed edges of groups that are being partially removed, i.e. G7 and W1

Retained Trees and Construction Mitigation

3.9. Trees to be retained will remain unaffected by the proposed development subject to the adoption of tree protection measures during the construction phase. The TPP and Arboricultural Method Statement (**See Plans 3 and 4**) details the measures for the protection of trees in accordance with BS5837.

3.10. The scheme has been designed to avoid new built located within the RPAs of retained trees. Tree protection fence will be used to protect the existing trees throughout the construction of the proposed development.

Conclusion

3.11. The proposal development is considered supportable from an arboricultural perspective subject to the implementation of the proposed new tree and soft-landscaping and the adoption of tree protection measures for existing trees as detailed within this report.

3.12. It is recommended that the Tree Protection Plan and Arboricultural Method Statement is secured by way of a suitably worded planning condition.

Appendix 1: Proposed Landscape Masterplan

0 10 20 30 40 50 60 70 80 90 100 M

KEY

- Site Boundary
- MoJ Ownership Boundary
- Extent of Perimeter Fence Clearance Zone
- Existing Trees / Vegetation To Be Retained
- Other Existing Areas To Be Retained
- Existing Pond

Soft Landscape Proposals

- Proposed Trees
- Proposed Orchard Trees
- Proposed Multi-stemmed Trees
- Proposed Ornamental Shrubs
- Proposed Specimen Shrubs
- Proposed Ready Hedge (Pre-Grown)
- Proposed Woodland Planting
- Proposed Native Hedgerow
- Proposed Amenity Grass
- Proposed Sports Pitch Grass
- Proposed Wildflower Meadow
- Proposed Wetland Meadow
- Proposed Bulb Planting
- Proposed Allotment Plot
- Proposed Pond
- Existing Grassland to be Converted to Neutral Grassland

Hard Landscape Proposals

- Proposed Vehicular Tarmac
- Proposed Pedestrian Tarmac
- Proposed Textured Concrete
- Proposed Utilitarian Concrete
- Proposed Safety Surfacing
- Proposed Self Binding Gravel
- Proposed Reinforced Grass System
- Proposed Concrete Slab Paving
- Proposed Tactile Paving
- Proposed Resin Bound Gravel
- Proposed Decorative Pebble
- Proposed Polymeric Surfacing
- Proposed Timber Seating and Picnic Tables
- Proposed Concrete Bollard
- Proposed Hardwood Timber Planter
- Proposed Softwood Timber Planter
- Proposed Water Feature
- Proposed Pram Shelter
- Proposed Smoking Shelter
- Proposed Polytunnel
- Proposed Garden Shed
- Proposed Cycle Shelter and Cycle Stands
- Proposed Feature Stone
- Proposed Play Equipment
- Proposed Outdoor Fitness Equipment

NOTES

1. Refer to Architect's Proposed Site Layout Drawing No;
608623-0000-PEV-GHX0011-ZZ-DR-A-0201
608623-0000-PEV-GHX0021-ZZ-DR-A-0201
608623-0000-PEV-GHX0021-ZZ-DR-A-0202
608623-0000-PEV-GHX0031-ZZ-DR-A-0201

2. To be read in conjunction with Arboricultural Survey doc no, 661227-0000-TYL-WAX000-XX-RP-X-0001 and Arboricultural Impact Assessment by Tyler Grange.

Rev	Date	Description
P06	12/07/2021	Energy Centre and Associated Car Park Updated
P05	05/07/2021	Revised to incorporate recieved comments. Bus layby added. Cycle storage area expanded.
P04	24/06/2021	Updated with Revised Site Boundary and Ecologist's Recommendation for Habitat Recreation and Enhancement.
P03	27/04/2021	Revised to Incorporate Received Comments
P02	16/04/2021	Reference to Arboricultural Reports Added.
P01	13/04/2021	First Issue

This document references the following linked files

File Reference	Status	Revision

Project Status
RIBA Stage 02

Client
Ministry of Justice

Project
New Prisons Programme

Ministry of Justice, 102 Petty France, London, SW1H 9AJ

Project Name / Site
New Prisons Programme
Garth & Wymott 2

Project Address
Site Adjacent to HMP Garth & HMP Wymott

Building Type
Site Infrastructure

Drawing Title
Comprehensive Landscape Masterplan

Originator Logo
PICK EVERARD

Drawn By	JBY	Date	13/04/2021
Checked By	MAO	Date	13/04/2021
Approved By	n/a	Date	13/04/2021

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Data Handling Classification		Suitability
OFFICIAL		S3

Appendix 2: Planning Policy Context

National and Local Planning Policy

A2.1. The consideration for existing trees and woodlands in relation to planning and new is set out within Section 15 'Conservation and Enhancing the Natural Environment' within the NPPF.

A2.2. Paragraph 175 states that "development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons, and a suitable compensatory strategy exists".

A2.3. At a national level, the consideration for trees is recognised in the context of their contribution green infrastructure and biodiversity networks, and also in terms of their contribution in landscape terms to the local setting and character to a place. Great weight is also applied to the importance of conserving existing aged trees, including ancient woodland and trees and trees considered to be 'veterans'. No veteran, ancient trees or ancient woodlands are present to be affected by the proposed development and therefore para 175 as it relates to these features is not considered applicable to the application.

A2.4. Local planning policy relating to trees and new development is set-out in The Chorley Local Plan 2012 – 2026 (adopted 2015). No specific planning policy relating to trees and new development was identified within the Central Lancashire Adopted Core Strategy Local Development Framework (adopted July 2021) and associated SPDs.

The Chorley Local Plan, Policy BNE9: Biodiversity and Nature Conservation:

"*In Chorley, Biodiversity and Ecological Network resources will be protected, conserved, restored and enhanced:*

Priority will be given to:

i. Protecting and safeguarding all designated sites of international, national, regional, county and local level importance including all Ramsar sites, Special Protection Areas, Special Areas of Conservation, national nature reserves, sites of special scientific interest and biological heritage sites, geological heritage sites, local nature reserves and wildlife corridors together with any ecological network approved by the Council;

ii. Protecting, safeguarding and enhancing habitats for European, nationally and locally important species;

iii. The ecology of the site and the surrounding area (safeguarding existing habitats / features such as but not exclusive to trees, hedgerows, ponds and streams), unless justified otherwise;

iv. When considering applications for planning permission, protecting, conserving, restoring and enhancing Chorley's ecological network and providing links to the network from and/or through the proposed development site. In addition development must adhere to the provisions set out below:

a) The production of a net gain in biodiversity where possible by designing in wildlife and by ensuring that any adverse impacts are avoided or if unavoidable are reduced or appropriately mitigated and/or compensated;

b) The provision of opportunities for habitats and species to adapt to climate change;

c) The support and encouragement of enhancements which contribute to habitat restoration;

d) Where there is reason to suspect that there may be protected habitats/species on or close to a proposed development site, the developer will be expected to carry out all necessary surveys in the first instance; planning applications must then be accompanied by a survey assessing the presence of such habitats/species and, where appropriate, make provision for their needs;

e) In exceptional cases where the need for development in that location is considered to significantly outweigh the impact on the natural environment, appropriate and proportionate mitigation measures or as a last resort compensatory habitat creation and/or restoration will be required through planning conditions and/or planning obligations.

The following definition of what constitutes damage to natural environmental assets will be used in assessing applications potentially impacting upon assets:

1. Loss of the undeveloped open character of a part, parts or all of the ecological network;
2. Reducing the width or causing direct or indirect severance of the ecological network or any part of it;
3. Restricting the potential for lateral movement of wildlife;
4. Causing the degradation of the ecological functions of the ecological network or any part of it;
5. Directly or indirectly damaging or severing links between green spaces, wildlife corridors and the open countryside;
6. Impeding links to ecological networks recognised by neighbouring planning authorities.
7. Significant adverse effect on the interest features of a designated nature conservation site".

The Chorley Local Plan, Policy BNE10: Trees

"*Development proposals which would result in the loss of trees and/or involve inappropriate works to trees which contribute positively to the character and appearance of a Conservation Area will not be permitted. The removal of such trees will only be permitted in exceptional circumstances and where consent is granted, replacement trees will be required to be planted. Proposals that would result in the loss of trees, woodland areas or hedgerows which make a valuable contribution to the character of the landscape, a building, a settlement or the setting thereof will not be permitted. Replacement planting will be required where it is considered that the benefit of the development outweighs the loss of some trees or hedgerows. Tree planting will be required as part of new development proposals and an associated maintenance scheme. Tree Preservation Orders will be used to protect trees of landscape or townscape significance*".

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

Field Work

A3.1. In accordance BS5837, the tree survey included all trees within / in influence of the site and the site boundaries that were over 75mm diameter at breast height (1.5m).

A3.2. Measured topographical survey data (supplied by others) was used to inform tree locations their surrounding context. Any trees not identified on the topographical survey are prefixed with (*) and their locations have been approximated using measurements during the tree survey and further informed by aerial photography where required.

A3.3. The trees surveyed were visually inspected from ground level only. No invasive investigations or climbing inspections were necessary to confirm visual or audible signs of defect or debility and no tissue or soil samples were undertaken. For further clarification please refer to the tree survey explanatory notes in below.

Tree Numbers

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

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

'H' prefixes have been used to identify hedgerows.

'W' prefixes have been used to identify woodlands.

Species

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

Height and Stem Diameter

A3.5. The stem diameter is measured at 1.5m above ground level and given in millimetres (mm). Tree heights are measured in metres (m) using a clinometer where access and land 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

A3.6. Radial crown spread is measured in metres and is listed for each of the four cardinal points where access has been possible to obtain a measurement. Where access was not possible to measure the spread of the canopy, such distances have been estimated by eye or informed by aerial photography.

A3.7. The measured canopy shapes have been plotted on the Tree Constraints Plan at the four cardinal points. For groups of trees, the extent of the canopy has been measured as an average across the group and plotted using the topographical survey mapping. In some instances, Tyler Grange will use aerial photography to inform the canopy spread of larger tree groups and woodlands where topographical data is limited for such features.

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

Age Class

The age of each tree is defined as follows:

Young - within the first third of reaching full maturity;

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

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

Mature - specimen at full maturity; and

Veteran – tree that, by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.

Physiological and Structural Condition

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

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

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

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

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

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

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

Good – no significant structural defects.

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

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

Tree Quality Gradings

A3.12. The value of trees has been assessed in accordance with the BS5837 Cascade Chart for Tree Quality Assessment (See Appendix 4). Grading subcategories (1, 2 and 3) reflect arboricultural, landscape and cultural values, respectively.

Root Protection Areas

A3.13. The Tree Constraints Plan shows the approximate extent of Root Protection Areas (RPAs). The RPAs have been plotted and calculated in accordance with the methodology set out in Appendices C and D of BS5837, using the tree stem diameter dimensions obtained during the site visit.

A3.14. Plotted RPAs serve as a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.

A3.15. Where pre-existing site conditions or other factors indicate that rooting may occur asymmetrically, a polygon of equivalent area should be produced. Modifications to the shape of the RPA should reflect a soundly based arboricultural assessment of likely root distribution observed on-site. Any deviation in the RPA from the original circular plot should take account of the following factors whilst still providing adequate protection for the root system:

a) the morphology and disposition of the roots, when influenced by past or existing site conditions (e.g. the presence of roads, structures and underground apparatus);

b) topography and drainage;

c) the soil type and structure;

d) the likely tolerance of the tree to root disturbance or damage, based on factors such as species, age, condition and past management.

A3.16. The plotted RPAs have therefore informed the design of the proposed development where possible. While developing within RPAs should be avoided, special working methods can be adopted to alleviate the RPA disturbance for cases where the development is considered necessary and unavoidable.

Tree Canopies and Shading

A3.17. The distribution of tree canopy cover on and within influence of the site is illustrated on the TCP. Canopies have been plotted at cardinal points for individual and groups of trees. The Tree Survey Schedule included at Appendix 5 to the rear of this report lists the vertical clearance from site ground level to significant tree branching of individual trees. This measurement informs the impacts of accessibility and development beneath tree canopies.

A3.18. The principal tree shadow constraints are shown on the TCP and have been plotted in accordance with BS5837 using the current height of surveyed trees. The indicative shade cast by existing surveyed trees signifies the area within which the amenity interests of shading, available daylight and the proximity of trees to any future site uses may be impacted upon should a tree be retained as part of development.

A3.19. Where shading is unavoidable, the potential adverse impact of shadowing should also be reviewed on balance with the positive aspects of retaining a degree of canopy shade. BS5837:2012 (para. 5.3.4, a) NOTE 1) states that "shading can be desirable to reduce glare or excessive solar heating, or to provide comfort during hot weather. The combination of shading, wind speed/turbulence reduction and evapotranspiration effects of trees can be utilised in conjunction with the design of buildings and spaces to provide local microclimatic benefits".

Limitations

A3.20. The comments made are based on observable factors present at the time of inspection. Although the health and stability of trees in their current context is an integral part of their suitability for retention, it must be understood that this report is not a tree risk assessment and should not be construed as such. While every attempt has been made to provide a realistic and accurate assessment of the trees' condition at the time of inspection, it may have not been appropriate, or possible, to view all parts or all sides of every tree to fulfil the assessment criteria of a risk assessment.

A3.21. No tree can be considered entirely safe, given the possibility that exceptionally strong winds could damage or uproot even a mechanically 'perfect' specimen. It is therefore usually accepted that hazards are only recognisable from distinct defects or from other failure-prone characteristics of the tree or the site. An assessment of the potential influence of trees upon existing buildings or other structures resulting from the effects of trees upon shrinkable load-bearing soils or the effects of incremental root or branch growth, are specifically excluded from this report.

Un-assessable Risks

A3.22. Any alteration to the application site or development proposals could change the current circumstances and may invalidate this report and any recommendations made.

A3.23. The Wildlife and Countryside Act (WCA) 1981 (as amended) makes it an offence to disturb nesting birds or recklessly endanger a bat or its roost. Bats are also a European protected species and are additionally protected under the Conservation (Habitats & c) Regulations 1994 and 2010 (as amended). The survey findings, constraints, opportunities and design or mitigation recommendations included within that report must be read alongside this document.

A3.24. A lack of recommended work does not imply that a tree does not pose an unacceptable level of risk and likewise, it should not be implied that a tree will present an acceptable level of risk following the completion of any recommended work.

Appendix 4: Cascade Chart for Tree Quality Assessment

Appendix 4: Cascade Chart for Tree Quality Assessment

TREES FOR REMOVAL				
Category and Definition	**Criteria**			**Identification on Plan**
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning).			DARK RED
	Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline.			
	Trees infected with pathogens of significance to the health and/or safety of other trees nearby or very low-quality trees suppressing adjacent trees of better quality. (NOTE: Category U trees can have existing or potential conservation value which it might be desirable to preserve)			
TREES TO BE CONSIDERED FOR RETENTION				
Category and Definition	**Criteria - Subcategories**			**Identification on Plan**
	1.Mainly Arboricultural Values	2. Mainly Landscape Values	3. Mainly Cultural Values, including Conservati	
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remedial defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural benefits.	MID BLUE
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or temporary/transient landscape benefit.	Trees with no material conservation or other cultural value.	GREY

Appendix 5: Tree Survey Schedule

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
T1	Common ash	7m	250	4.50	4.50	4.50	4.50	1.50	Semi mature	Good	Good	B.1	Located 0.2m from concrete SUDS outlet. Single stemmed with balanced crown formation. No significant defects observed. Acceptable condition at present.	3.0	28.3
T2	Hawthorn	5m	100, 75	2.00	2.00	2.00	2.00	0.20	Early mature	Good	Good	C.2	Located on SUDS embankment. Unable to fully inspect. No significant defects observed.	1.5	7.1
T3	Common ash	7m	200, 200	4.50	4.50	4.50	4.50	1.00	Semi mature	Good	Good	B.1	Located on SUDS embankment. Unable to fully inspect. No significant defects observed.	3.4	36.2
T4	Italian alder	14m	490	5.00	5.00	5.00	4.00	1.75	Mature	Good	Good	B.1	Single stemmed specimen. Acceptable condition at present. Outside of redline boundary.	5.9	108.6
T5	Italian alder	13m	490	5.00	3.00	5.00	5.00	2.00	Mature	Poor	Very Poor	U	Single stemmed specimen. Fungal fruiting bodies of *Daedaleopsis confragosa* (Blushing bracket) on south east of stem from ground level to 0.4m. Basal decay and hollowing of stem detected with percussion hammer. Outside of redline boundary; recommended for removal to mitigate risk to health and safety of site users.	5.9	108.6
T6	Goat willow	8m	550, 135, 300	6.00	7.00	7.00	7.00	2.00	Mature	Good	Good	C.2	Self set, multi stemmed tree located on SUDS embankment. Previously crown lifted. Minor deadwood within crown.	7.7	185.9
T7	Goat willow	7m	225	5.00	0.50	1.00	5.00	2.00	Semi mature	Fair	Fair	C.1	Unremarkable tree located on SUDS embankment.	2.7	22.9
T8	Hawthorn	4m	120, 100, 100, 90	3.00	2.50	3.00	3.00	0.20	Early mature	Good	Good	C.2	located on SUDS embankment. Unable to fully inspect. No sig defects observed.	2.5	19.2

Tyler Grange

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
T9	Crack willow	7m	500	5.00	5.00	2.00	2.00	1.50	Mature	Fair	Fair	C.2	Collapsed tree with primary stem resting on ground with compensatory crown development. Neighbouring stem is decaying on ground with no regrowth. Low target area. Retain on site if possible as ecological habitat.	6.0	113.0
T10	Alder sp.	8m	100, 475, 130	5.00	4.00	5.00	5.00	2.00	Mature	Good	Good	B.2	Multi stemmed tree located on SUDS embankment. Unable to fully inspect. Previous poor crown lifting works evident. No significant defects observed.	6.0	114.5
T11	Hawthorn	6m	180	2.50	2.50	1.00	2.50	2.00	Mature	Good	Good	C.2	Single stemmed tree located on SUDS embankment. Unable to fully inspect. No significant defects observed.	2.2	14.6
T12	Hawthorn	4m	180	2.00	2.00	2.00	2.00	1.00	Mature	Good	Good	C.2	Single stemmed tree located on SUDS embankment. Unable to fully inspect. No significant defects observed.	2.2	14.6
T13	Apple sp.	5m	235	3.00	3.00	1.25	1.25	2.00	Mature	Fair	Fair	C.1	Single stemmed tree with large basal cavity and stem cavity at 1.5m; callous growth present and stem appears solid at time of survey. Low target area.	2.8	25.0
T14	Common ash	16m	900	8.00	12.00	11.00	6.00	3.00	Mature	Good	Fair	B.2	Located on SUDS embankment. Unable to fully inspect. Neighbouring alder growing 1m from stem. Minor deadwood within upper crown. DBH estimated.	10.8	366.2
T15	Alder sp.	9m	500	6.00	8.00	3.00	5.00	4.00	Early mature	Good	Fair	B.1	Located on SUDS embankment. Unable to fully inspect. Neighbouring ash growing 1m from stem. Minor deadwood within upper crown. DBH estimated.	6.0	113.0
T16	Common ash	16m	900	11.00	9.00	10.00	8.00	4.00	Mature	Good	Fair	B.1	Located adjacent to footpath. Unable to fully inspect. Historic snap outs of scaffold limbs at 7-9m with evidence of dysfunctional bark in lower - middle stem. Minor deadwood within upper crown. DBH estimated.	10.8	366.2

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
T17	Crack willow	17m	1100	9.00	9.00	10.00	9.00	5.00	Mature	Good	Good	B.1	Tree located at edge of SUDS embankment. Minor deadwood present, with some snapped and hung up branches. Typical form for species. Recommendations: Remove deadwood.	13.2	547.1
T18	Rowan	5m	100	1.00	1.50	2.50	1.50	2.00	Young - Semi mature	Good	Fair	C.2	Unremarkable tree with strimmer damage to base.	1.2	4.5
T19	Hawthorn	4m	120, 100, 100, 90	3.00	2.50	3.00	3.00	0.20	Early mature	Good	Good	C.2	Located on fenceline. Unable to fully inspect. inspect. No significant defects observed.	2.5	19.2
T20	Alder sp.	7m	430	5.00	5.00	5.00	4.50	3.00	Early mature	Good	Good	B.1	Single stemmed tree. Acceptable condition at present.	5.2	83.6
T21	Horse chestnut	6m	365	3.00	2.00	3.00	3.00	3.00	Semi mature	Good	Good	C.2	Unremarkable tree with evidence of poor crown lifting. Not on topo.	4.4	60.2
T22	Common ash	12m	465	4.75	4.75	4.75	4.75	4.00	Semi mature - Early mature	Good	Good	B.2	Bifurcated stem at 1.5m with co-dominant stems. Previously crown lifted. Acceptable condition at present. Not accurately plotted on topo.	5.6	97.8
T23	Hybrid black poplar	16m	750	9.00	8.50	9.00	7.00	5.00	Mature	Fair	Fair	B.2	Single stemmed tree with deadwood present within crown; some snapped and hung up limbs. Previously poorly crown lifted. Recommendations: Re-inspect after leaf flush of 2021.	9.0	254.3
T24	Horse chestnut	7m	500	5.00	4.00	5.00	5.00	2.50	Semi mature - Early mature	Poor	Poor	U	Tree in state of decline. Recommendations: remove.	6.0	113.0
T25	Alder sp.	7m	120, 100, 120, 120	3.00	2.50	3.00	2.50	2.00	Semi mature	Good	Good	C.2	Multi stemmed tree located 1m from building. Crown in contact with building. Acceptable condition at present.	2.8	24.1
T26	Field maple	4m	75	1.25	1.75	1.75	1.75	2.00	Young	Good	Good	C.1	Unremarkable tree.	0.9	2.5

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
T27	Cherry sp.	7m	340	6.00	7.00	4.00	4.00	2.00	Early mature	Fair	Fair	C.1	Bifurcated stem at 1.6m with stem wound at 1.4m; fungal fruiting body present at wound (unidentifiable due to deteriorated condition). No other defects observed. Recommendations: monitor rate of decline.	4.1	52.3
T28	Italian alder	13m	470	3.75	3.75	3.75	3.00	3.00	Early mature - Mature	Good	Good	B.1	Single stemmed tree with minor crown lifting works. Acceptable condition at present.	5.6	99.9
T29	Field maple	7m	80	0.25	2.00	1.00	1.00	3.00	Young	Good	Good	C.1	Unremarkable tree.	1.0	2.9
T30	Pedunculate oak	8m	350	4.00	4.00	4.00	3.75	3.50	Semi mature - Early mature	Good	Good	B.1	Single stemmed tree with some poor crown lifting wounds, although occluding. Acceptable condition at present.	4.2	55.4
T31	Hybrid black poplar	18m	640	4.00	6.50	6.50	6.50	4.00	Mature	Good	Fair	B.1	Single stemmed tree. Previously crown lifted over car park. Minor deadwood present. Acceptable condition at present.	7.7	185.2
T32	Hybrid black poplar	20m	840	8.00	8.00	8.00	8.00	4.00	Mature	Good	Fair	B.1	Single stemmed tree. Previously crown lifted over car park. Deadwood present within crown above access track. Recommendations: Remove deadwood.	10.1	319.0
T33	Common ash	6m	100	1.75	1.75	1.75	1.75	2.50	Young - Semi mature	Good	Good	C.1	Self set, unremarkable tree.	1.2	4.5
T34	Western red cedar	12m	390	3.25	3.25	3.25	3.25	2.00	Early mature	Good	Good	B.1	Single stemmed tree located 2.5m from building. Acceptable condition at present.	4.7	68.8
T35	Pedunculate oak	11m	500	5.25	6.50	6.25	6.00	2.00	Early mature	Good	Fair	B.1	Single stemmed tree with good form. Minor deadwood above public right of way. Recommendations: Remove deadwood from above track.	6.0	113.0

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
T36	Common alder	6m	300, 180, 225	4.00	3.50	4.00	2.75	1.00	Mature	Good	Good	C.2	Located on drainage ditch embankment. Unable to fully inspect. No significant defects observed. Dimensions estimated.	5.0	78.3
T37	Pedunculate oak	11m	700	5.25	9.00	11.25	5.75	2.00	Mature	Good	Good	B.1	Located on drainage ditch embankment. Unable to fully inspect. No significant defects observed. Dimensions estimated. Crown lifted and reduced away from access track.	8.4	221.6
T38	Silver maple	13m	550	5.00	5.00	5.00	5.00	2.00	Dead	Dead	Dead	U	Large standing dead tree with significant basal decay; Ganoderma fungal fruiting bodies present from ground level to 1.4m. Recommendations: Monolith to 4m and retain as habitat pole.	6.6	136.8
T39	Pedunculate oak	12m	480	7.50	8.00	9.00	5.00	4.00	Early mature	Good	Good	B.1	Third party tree close to public right of way. Unable to fully inspect. No significant defects observed from point of survey. Dimensions estimated.	5.8	104.2
T40	Pedunculate oak	13m	481	8.50	9.00	10.00	6.00	5.00	Early mature	Good	Good	B.2	Third party tree close to public right of way. Unable to fully inspect. No significant defects observed from point of survey. Dimensions estimated.	5.8	104.6
G1	Silver birch, Alder sp.	15m	350	3.50	3.50	3.50	3.50	2.00	Early mature - Mature	Fair	G	B.2	10x Silver birch to northern end of group, 25x Italian alder in remaining group. Birch in overall good condition. Many alder showing signs of bacterial bleeding; potentially Phytophthora alni. Many alder have been 75% ring barked at base; presumably from mower or strimmer damage. Many alder feature deadwood within crowns. 1x standing dead tree in group. Group lies in part outside of redline boundary. Recommendations: Remove dead standing trees and those exhibiting bacterial bleeding. Remove deadwood from crowns. Dimensions averaged for group. Collective category B, some C grade trees throughout. One Cat U tree.	4.2	55.4

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
G2	Hawthorn	5m	200	2.50	2.50	1.00	2.50	2.00	Mature	Good	Good	C.2	Trees located on SUDS embankment. Unable to fully inspect. No significant defects observed. Heights range from 2.5-5m. Dimensions averaged for group.	2.4	18.1
G3	Crack willow, Hawthorn	7m	150	2.00	2.00	2.00	2.00	1.00	Semi mature - Mature	Good	Fair	C.2	Group consisting of failed but regenerating mature crack willow (stem located at pond edge) with area of self set hawthorn within fenced off, low target area. Unable to fully inspect.	1.8	10.2
G4	Lime sp.	9m	330	4.75	4.75	4.75	4.75	2.00	Semi mature - Early mature	Good	Good	B.2	2x single stemmed trees. Previously crown lifted. Acceptable condition at present. Dimensions averaged for group.	4.0	49.2
G5	Alder sp., Cherry sp., Apple sp., Norway maple, Rowan, hawthorn	10m	450	4.00	4.00	4.00	4.00	1.50	Young - Early mature	Good	Good	B.2	Mixed species group. Heights range from 4 - 10m. DBH range from 75 - 400mm. No significant defects observed. Acceptable condition at present. Dimensions averaged for group.	5.4	91.6
G6	Hybrid black poplar	19m	1000	7.00	7.00	7.00	7.00	4.00	Mature	Good	Fair	B.2	Group of mature Hybrid black poplar. Single stemmed with balanced crown formations. Minor deadwood within crowns. Acceptable condition at present. Dimensions averaged for group. Not on topo.	12.0	452.2
G7	Common ash, Poplar sp., Pedunculate oak, Silver birch, Hazel	10m	200	2.25	2.25	2.25	2.25	2.50	Young - Semi mature	Good	Good	B.2	Area of planted screening. Ash die back present within group. Not fully inspected. No other significant defects observed. Would benefit from selective thinning and removal of infected ash. Dimensions averaged for group.	2.4	18.1
G8	Sycamore, Norway maple	8m	350	4.25	4.25	4.25	4.25	4.00	Semi mature - Early mature	Good	Good	B.2	2x single stemmed trees. Previously crown lifted. Acceptable condition at present.	4.2	55.4

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
G9	White willow	10m	630	7.00	7.00	7.00	7.00	3.00	Early mature	Good	Fair	C.2	2x twin stemmed trees. Minor deadwood within crowns. Previously crown lifted. Acceptable condition at present. Not accurately plotted on topo.	7.6	179.5
G10	Pedunculate oak	9m	650	5.50	6.00	6.00	6.00	3.00	Early mature	Good	Fair	B.2	2x single stemmed trees. Minor deadwood within crowns. Previously crown lifted. Acceptable condition at present. Not accurately plotted on topo.	7.8	191.0
G11	Field maple, Alder sp., Horse chestnut, Hybrid black poplar, Common ash, Willow sp., Silver birch	17m	750	7.50	7.50	7.50	7.50	3.50	Young - Mature	Fair	Fair	B.2	Area of mixed species planting; predominantly ash, birch, alder with occasion hybrid black poplar, Norway maple, willow sp. and horse chestnut. Trees at group edge feature historical snap outs and hanging deadwood. Some deadwood overhanging road. Stem diameters range from 75 to 650 mm. Height range from 7 to 16m. Recommendations: remove deadwood from over road.	9.0	254.3
G12	Purple leaved plum, cherry sp, apple sp.	7m	250	3.50	3.50	3.50	3.50	2.00	Early mature	Good	Good	B.2	Group of 5x purple leaved plum, 2x cherry, 1x apple. 1x cherry is located in bowling green area; unable to fully inspect. No significant defect from point of survey. Dimensions averaged for group.	3.0	28.3
G13	Common ash, Alder sp., Lime sp., Norway maple, Cherry sp.	11m	450	4.50	4.50	4.50	4.50	3.00	Semi mature - Early mature	Good	Fair	B.2	Mixed species group. Evidence of poor arboricultural management, with deadwood and hung up limbs present in some trees. Dense ivy on some stems prevented full inspection. Dimensions averaged for group. Recommendations: remove deadwood and snapped limbs in accordance with BS 3998.	5.4	91.6
G14	Willow sp.	12m	650	7.00	6.00	4.00	7.00	5.00	Early mature - Mature	Fair	Fair	C.2	2x trees growing in unison. Southern tree features historical main stem failure. Compensatory crown development. Unable to fully inspect due to restricted access.	7.8	191.0

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
G15	Horse chestnut, Norway maple	7m	400	5.00	5.00	5.00	5.00	3.00	Semi mature - Early mature	Fair	Fair	C.2	2x horse chestnut, 1x field maple. Horse chestnut in early decline. Field maple is supressed. All feature poor pruning wounds. Recommendations: monitor rate of decline.	4.8	72.3
G16	Horse chestnut, Hawthorn	6m	250	2.00	2.00	2.00	2.00	2.00	Semi mature - Mature	Good	Good	C.2	Unremarkable trees.	3.0	28.3
G17	Western red cedar	13m	350		3.75		3.75	1.50	Early mature	Good	Good	B.2	Screen planting of 10x trees. Acceptable condition at present.	4.2	55.4
G18	Common ash, Willow sp.	13m	620, 500	7.00	7.00	7.00	7.00	3.50	Mature	Good	Good	B.2	2x twin stemmed ash, 1x single stemmed willow. Well managed trees with minor deadwood present. Acceptable condition at present. Dimensions averaged for group.	9.6	286.6
G19	Common alder	4m	100	1.75	1.75	1.75	1.75	0.50	Young	Good	Good	C.2	Located on drainage ditch embankment. Unable to fully inspect. No significant defects observed. Dimensions averaged for group.	1.2	4.5
G20	Hawthorn, Common Ash	5m	250	3.50	3.50	3.50	3.50	0.20	Early mature - Mature	Good	Good	B.2	Group of predominantly hawthorn with occasional ash. Located on bunded earth at field edge. Acceptable condition at present. Dimensions averaged for group.	3.0	28.3
G21	Crack willow, Leyland cypress, Goat willow, common ash, Hawthorn, Cherry, Pedunculate oak, Silver maple	13m	400	5.00	5.00	5.00	5.00	2.00	Semi mature - Mature	Good	Fair	B.2	Mixed species group, with fishing pool located to north. Unable to fully inspect due to restricted access. Some deadwood throughout crowns. Dimensions averaged for group.	4.8	72.3
G22	Crack willow, Goat willow	13m	500	7.00	7.00	7.00	7.00	4.00	Semi mature - Mature	Fair	Fair	B.2	Wooded area of predominantly willow species	6.0	113.0
H1	Cherry laurel	2m	100	0.25		0.25		0.10	Semi mature	Good	Good	C.2	Linear hedge maintained with regular clipping.	1.2	4.5

Tree Number	Common Species Name	Height (m)	Trunk Diameter (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Physiological Condition	Structural Condition	BS5837 Category	Comments/Preliminary Management Recommendations	RPA Radius (m)	Root Protection Area (m2)
				N	E	S	W								
H2	Cherry laurel	2m	100	0.25		0.25		0.10	Semi mature	Good	Good	C.2	Linear hedge maintained with regular clipping.	1.2	4.5
H3	Hawthorn, Common alder, Pedunculate oak	2m	100		1.00		1.00	0.10	Early mature	Good	Good	C.2	Mixed species hedgerow along access track. Patchy in places. Maintained by irregular clipping.	1.2	4.5
H4	Hawthorn, common alder, Pedunculate oak	2m	100		1.50		1.50	0.10	Early mature	Good	Good	C.2	Mixed species hedgerow adjacent to access track. Patchy in places. Maintained by irregular clipping.	1.2	4.5
H5	Hawthorn	2m	100		1.00		1.00	0.10	Early mature	Good	Good	C.2	Hawthorn hedgerow adjacent to access track. Patchy in places. Maintained by regular clipping.	1.2	4.5
H6	Hawthorn	2m	100		1.00		1.00	0.10	Early mature	Good	Good	C.2	Hawthorn hedgerow adjacent to access track. Patchy in places. Maintained by regular clipping.	1.2	4.5
H7	Leyland cypress	5m	75	0.50	0.75	0.50	0.75	0.10	Young	Good	Good	B.3	Third party garden boundary hedges. Acceptable condition at present.	0.9	2.5
H8	Privet, Hawthorn	2m	50	0.75	0.75	0.75	0.75	0.10	Young	Good	Good	C.2	Third party garden boundary hedges. Acceptable condition at present.	0.6	1.1
W1	Crack willow, Common ash, Aspen, Silver birch, Hazel, Hawthorn, Blackthorn	18m	450	5.00	5.00	5.00	5.00	4.00	Semi mature - Early mature	Good	Fair	B.3	Area of managed mixed species woodland with hazel, hawthorn and blackthorn understory. Unable to fully inspect due to restricted access. Some low hanging crowns (2.5m) above field boundary to north, with some failed trees close to boundary. DBH range of 75-500mm. Dimensions averaged for group.	5.4	91.6

Plan 1: Tree Constraints Plan

Key:

- Tree Survey Boundary
- Category B - Trees of Moderate Quality and Value
- Category C - Trees of Low Quality and Value
- Category U - Trees Recommended for Removal
- Approximate Extent of BS5837 Calculated Root Protection Areas (RPAs)
- BS 5837 Calculated Tree Shadow Constraints

**Denotes trees and groups not identified on topographical. Locations approximated using measurements taken on site.*

Project Name

Garth Wymott 2

Drawing Title

Tree Constraints Plan

Tyler Grange

South Bank Central Vivo Tower, 30 Stamford Street, London SE1 9PY
Tel: 020 3934 9470 E: info@tylergrange.co.uk
W: www.tylergrange.co.uk

Scale 1:1000 @ A1	Date November 2020
Drawn by LB	Checked by GDT
Drawing No. 13498/P01	Revision A

Plan 2: Tree Retention and Removal Plan

Existing dense Vegetation / Trees Area

HMP Garth

Existing high security prison fence

New boiler house compound

HMP Wymott

Existing high security prison fence

New pumping station subject to separate application

New redirected Pump House Lane

Existing Vegetation / Trees Area

Residential Area

Public bus shelter/stop & connecting foot path to Willow Road

51 cycle parking bays

Accessible parking bays

525 Car Parking Space (including 24 accessible)

Proposed SUDs pond

Existing Vegetation / Trees Area

SITE ENTRANCE

WORKSHOPS BUILDING

KITCHEN BUILDING

SUPPORT BUILDING

CENTRAL SERVICES HUB

ENTRANCE RESOURCE HUB

HOUSE BLOCK 01

HOUSE BLOCK 02

HOUSE BLOCK 03

HOUSE BLOCK 04

HOUSE BLOCK 05

HOUSE BLOCK 06

HOUSE BLOCK 07

MUGA

CASU

Sub-station

Water Storage Compound

Mobile Screening Unit Compound

Kennels

NEW BOILER HOUSE

BARRIER

MOSS LANE

WILLOW ROAD

Wymott Park

Pond

Play Area

Wymott

CUTT CLOSE

GLOVER CLOSE

WRAY CRESCENT

THE CAUSE

El Sub Sta

Drain

Track

+12.85

+12.35

+11.58

+11.30

+11.10

+11.50

+12.50

+12.00

+11.20

+11.00

+13.28

Category B - Trees of Moderate Quality and Value

Category C - Trees of Low Quality and Value

Category U - Trees Recommended for Removal

Root Protection Areas

Tree Shading Constraints

Proposed Tree Removals

Existing Site Features

Proposed layout

*Denotes trees and groups not identified on topographical survey. Locations approximated using measurements taken on site.

Rev	Description	Date
-	-	-

Tyler Grange

Head Office: Marsden Estate, Rendcomb, Cirencester, Gloucestershire GL7 7EX

E:info@tylergrange.co.uk

W: www.tylergrange.co.uk

Project title
Garth Wymott 2

Drawing title
Tree Retention and Removal Plan

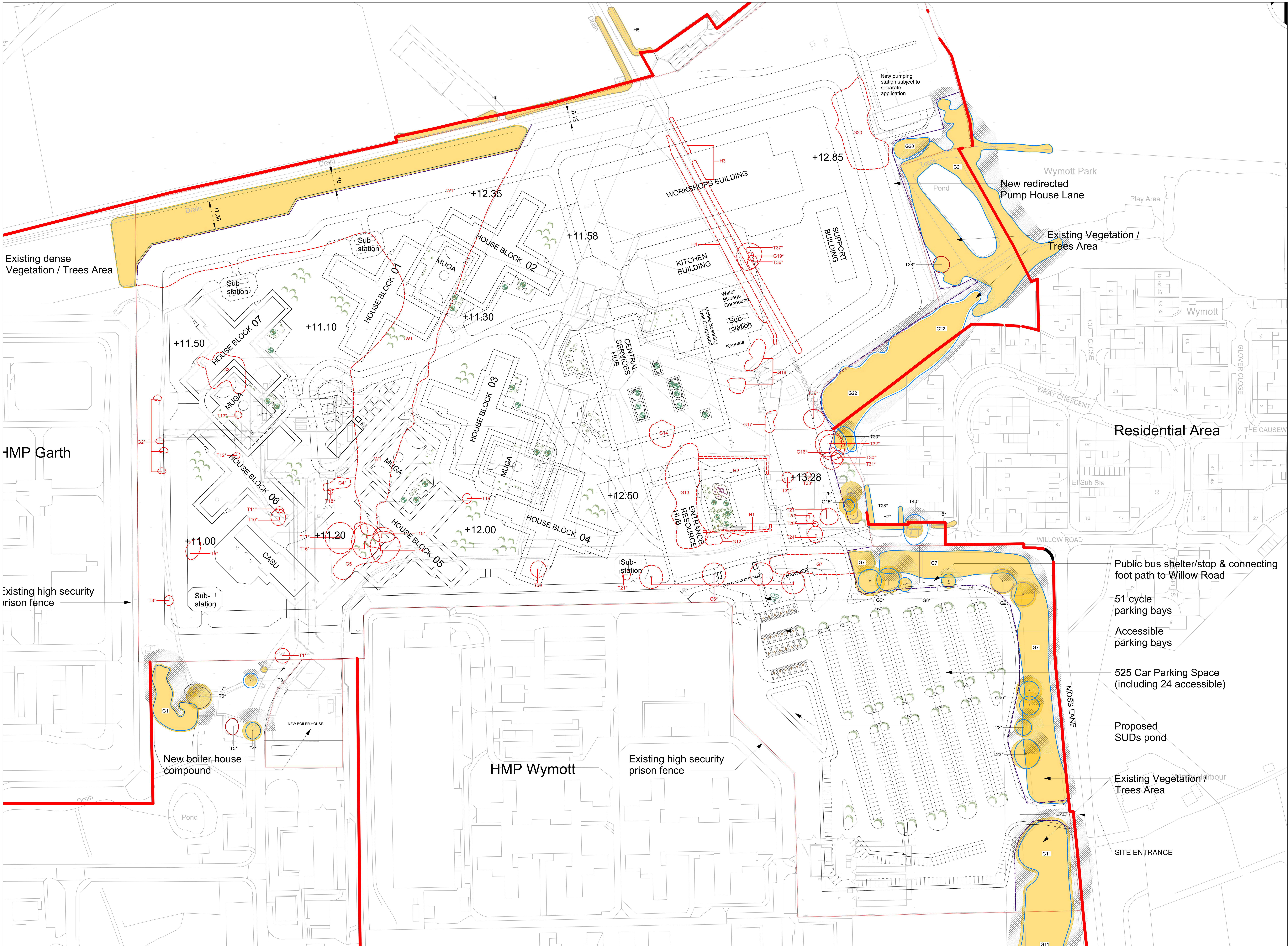
Scale 1:750 @ R0
Date 29.06.21
Drawn RA
Checked JP

Drawing number
13498_P02

Revision
-

0 25m

Plan 3: Tree Protection Plan



Category B - Trees of Moderate Quality and Value

Category C - Trees of Low Quality and Value

Category U - Trees Recommended for Removal

Root Protection Areas

Tree Shading Constraints

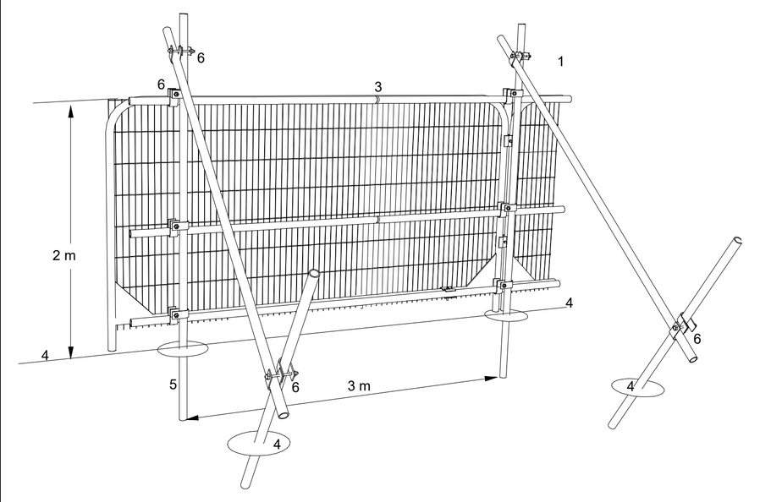
Proposed Tree Removals

Existing Site Features

Proposed layout

Tree Protection Barrier Locations

*Denotes trees and groups not identified on topographical survey. Locations approximated using measurements taken on site.



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

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

Rev	Description	Date
-	-	-

Tyler Grange

Head Office: Marsden Estate, Rendcomb, Cirencester, Gloucestershire GL7 7EX
E:info@tylergrange.co.uk
W: www.tylergrange.co.uk

Project title
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-

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Tyler Grange accepts no responsibility for this document to any other party other than the person by whom it was appointed.

Plan 4: Arboricultural Method Statement

Specification: Tree Removals and Pruning Works

1. Tree removals necessary to implement the proposals are identified by a dashed **PINK** tree canopy outline with solid pink hatched center, coupled with a pink tree identification number on the **Tree Retention and Removal Plan (13498/P02)**.
Tree removals will be restricted to:

Tree Category Grading	Number of Removals Required
Category A	None
Category B	20x trees, 15x groups
Catgegory C	17x trees, 7x groups
Category U	3x trees
Total	40x trees, 23x groups

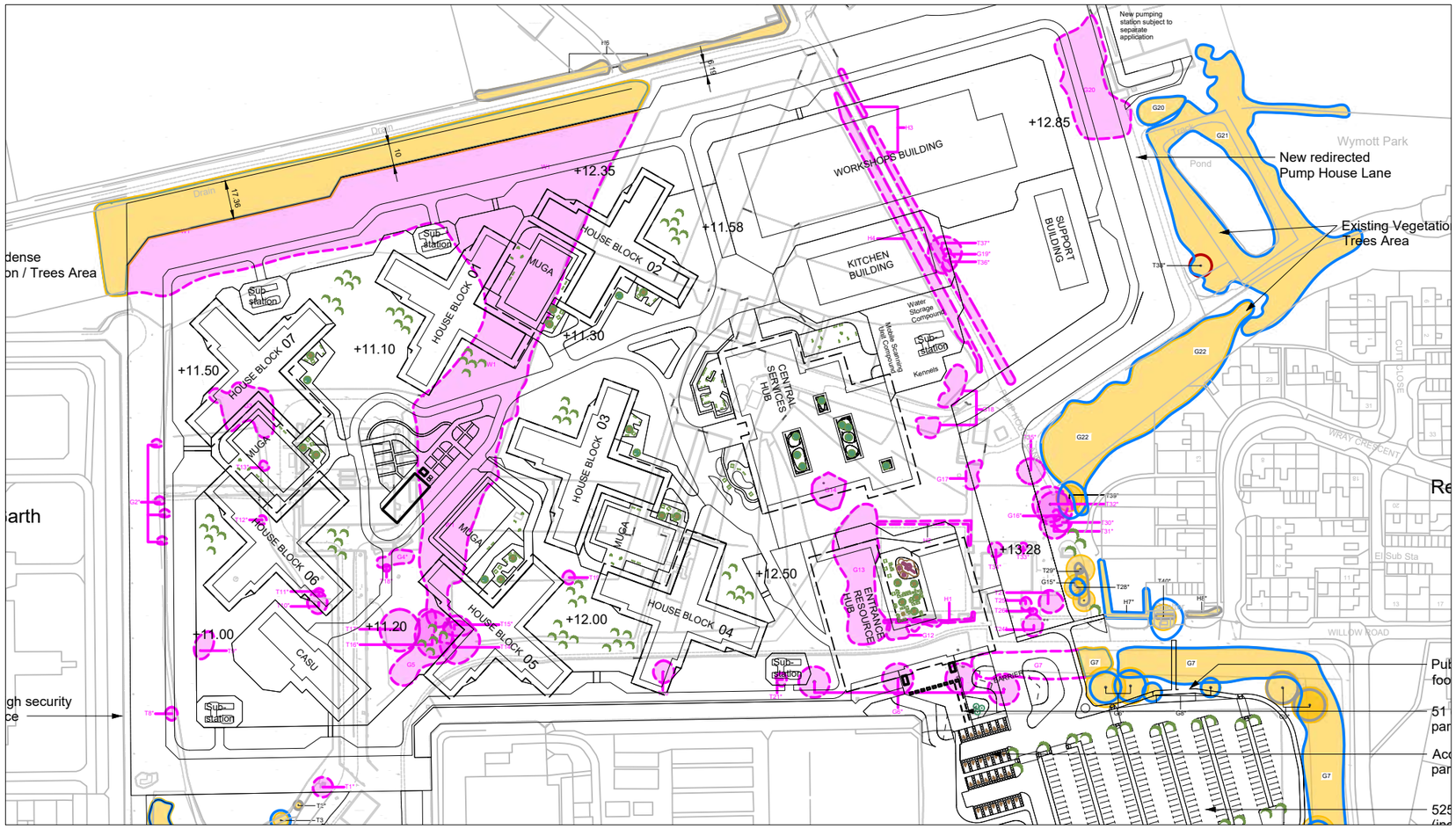
3. Trees to be removed will be clearly identified on-site (via spray marking / taping / tagging as required) by an appointed project Arboriculturalist to avoid erroneous tree felling.

4. Section of woodland group W1 is to be removed. This section will be marked out with a surveyor prior to works stating to identify what trees are being removed.

5. Tree removals works should be carried out prior to the installation of tree protection barriers.

6. Particular care is required when removing the trees established within cohesive groups to avoid damage to the retained tree cover. Remaining stumps from felled trees must be carefully ground out as opposed to pulled out with a machine where required. This is required to avoid up-rooting and disturbance within the rooting environment of adjacent retained trees.

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



Extract from Tree Retention and Removal Plan (13498/P02)

Project Name	Garth Wymott 2
Drawing Title	Arboricultural Method Statement -01

Tyler Grange
South Bank Central Vivo Tower, 30 Stamford Street
London, SE1 9PY
E: arboriculture@tylergrange.co.uk
W: www.tylergrange.co.uk

Scale: NTS	Date: 30.06.2021
Drawn by: RA	Checked by: JP
Drawing No.: 13498_P04	Revision: -

Specification: Tree Protection Barriers and Stem Protection and Ground Protection

Tree Protection Barriers

1. The purpose of tree protection barriers is to prohibit access into areas around the tree, that require protection from construction activity, such as tree roots, trunks and branches.

2. Tree protection barriers will be fully installed before the arrival of any plant or demolition/construction activity on-site. Except where stated in this AMS, tree protection barriers will remain in place for the duration of the development.

3. The locations of tree protection fencing is shown by a **squared purple line** or on the **Tree Protection Plan (13498_P03)** for construction phases of the development.

4. A DXF document can be provided digitally proving a ground surveyor with the accurate location of the TPF

5. Tree protection fencing will consist of the default specification recommended within BS5837:2012, comprising 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 - Figure A).

6. Special attention is essential in maintaining the protective barriers during the development, ensuring that it remains rigid and complete as well as fit for the purpose intended. To avoid disturbances to the protective barriers once installed, they will be inspected frequently, including during site visits by the project Arboriculturist. Repairs shall be made immediately where required.

7. All-weather notices will be attached to the barriers with words such as 'Construction Exclusion Zone - No Access' (see **Figure B and Appendix 4** for a full A4 size).

Figure A: Default specification for protective barrier

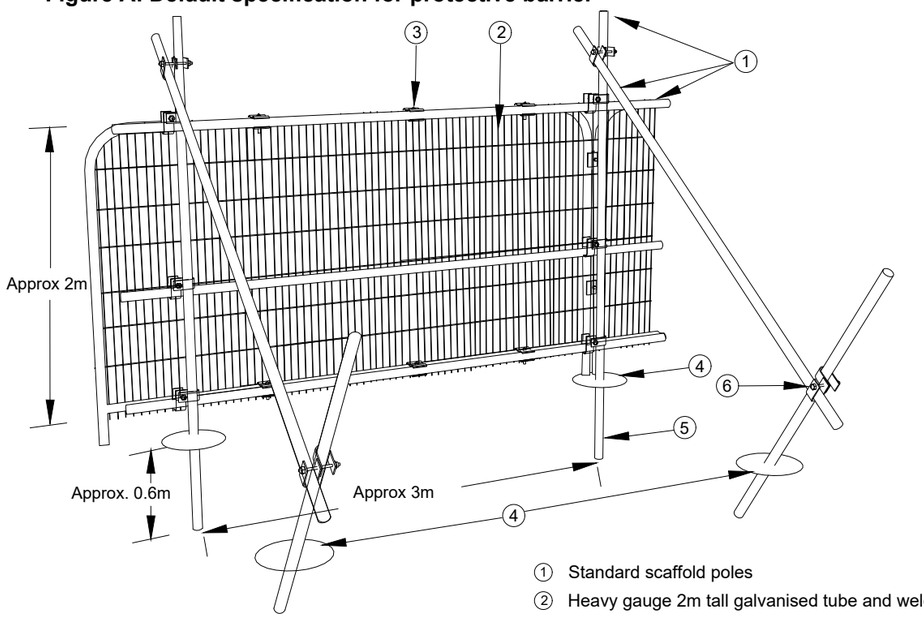


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Figure B: Signage Example

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

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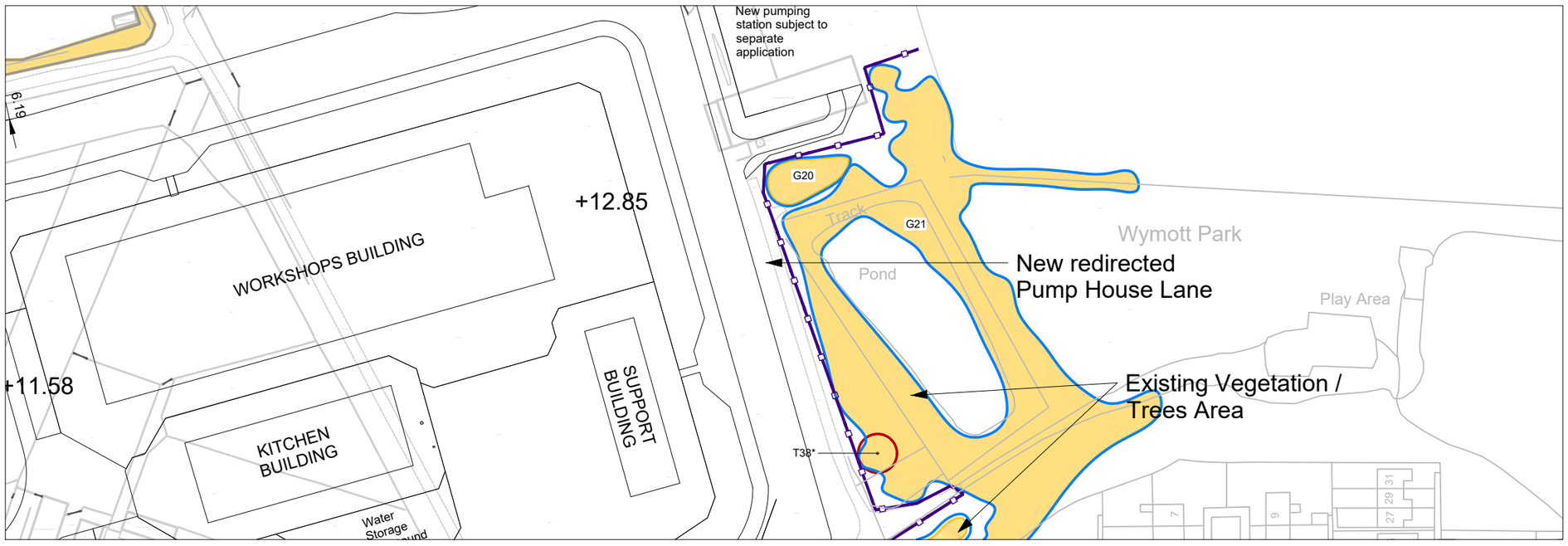

Extract from Tree Protection Plan (13498-P03)

Project Name
Garth Wymott 2

Drawing Title
Arboricultural Method Statement -02

Tyler Grange
South Bank Central Vivo Tower, 30 Stamford Street
London, SE1 9PY
E: arboriculture@tylergrange.co.uk
W: www.tylergrange.co.uk

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NTS	30.06.2021
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RA	JP
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13498_P04	-

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