

WHARTON

Natural
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Consultants

Arboricultural Impact Assessment

SITE LOCATION

Hollingworth Lake High Nets

ISSUE DATE

4th January 2022

OUR REFERENCE

220104 1340 AIA V1

PREPARED FOR

Rochdale Borough Council
Number One Riverside
Smith Street
Rochdale
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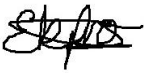
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The detail provided within this report is a true and accurate reflection of both the Site conditions at the time of survey, as well as the professional opinion of the Principal Author.



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1. Introduction

1.1 Terms of instruction

- 1.1.1 This Arboricultural Impact Assessment (AIA) has been commissioned by Rochdale Borough Council ('the Client'). The AIA has been prepared in relation to the Proposed Scheme at land south of Hollingworth Lake, Littleborough ('the Site') (see Red Line Boundary Plan at Appendix 1).
- 1.1.2 Trees may form a constraint to the Proposed Scheme and therefore a detailed tree survey and arboricultural report was undertaken in accordance with BS5837:2012 (Trees in Relation to Design, Demolition and Construction: Recommendations) to fulfil the requirements of the Local Planning Authority (LPA), Rochdale Metropolitan Borough Council (RBC), who require an AIA to make an informed decision on our client's full planning application.
- 1.1.3 The assessment considered trees directly on-site or within influencing distance of the Site (based on the surveyor's discretion).
- 1.1.4 Should the LPA be minded granting planning permission, an Arboricultural Method Statement (AMS) should be conditioned to ensure sufficient protection of retained trees.

1.2 Scope of project

- 1.2.1 The scope of assessment detailed within BS5837 broadly comprises three stages, these are:
- i. Undertake a survey of trees on the Site and within influencing distance of the Site to fulfil the requirements of BS5837:2012 Trees in Relation to Design, Demolition and Construction: Recommendations.
 - ii. Provide a Tree Constraints Plan for the Site including Root Protection Areas (RPA) and canopy spreads.
 - iii. Provide an AIA to evaluate the effects which are likely to arise from a final design layout implementation and identifies mitigation for the direct and indirect impacts on retained trees.



2. Site Overview

2.1 Site description

2.1.1 The Site comprises a contained grassed field compartment accessed to the south off Hollingworth Lake, via an existing private access track for pedestrian use only off Rakewood Road (see land within the red line boundary on Appendix 1), known herein as 'the Site'. The Site is centred approximately at OS National Grid Reference SD 93793 14712 and lies c.4.4km west of Rochdale. The Site is c. 1.3ha in size.

2.1.2 The Site is bordered immediately to the north, east and west by Hollingworth Lake and south by public footpaths and agricultural fields.

2.2 Statutory and Non-Statutory Designations

National Planning Policy Framework (NPPF) (July 2021)

2.2.1 When determining planning applications, Local Planning Authority's (LPA) should apply the following principles from the NPPF:

- *Paragraph 131*

"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."

- *Paragraph 174 (B & D)*

"Planning policies and decisions should contribute to and enhance the natural and local environment by:

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;

d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures."

- *Paragraph 180 (A, C & D)*

"When determining planning applications, local planning authorities should apply the following principles:

a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons⁶³ and a suitable compensation strategy exists; and

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate."



Local Planning Policy

- 2.2.2 The Core Strategy for RBC¹ was adopted on 19 October 2016. It's the lead document in the Local Plan. The Unitary Development Plan from our 1996-2016 Local Plan is still in place until our Allocations Development Plan is adopted.

Tree Preservation Orders and Conservation Areas

- 2.2.3 RBC is responsible for implementing any legal controls imposed through Tree Preservation Orders (TPOs) and Conservation Areas within the study area. The statutory status of arboricultural features within the study area was checked using the Council's online register² on 04 January 2022. RBC do not have an online record of any trees subject to a TPO. To establish this information, the local authority will need to be contacted via email. At the time of writing this assessment, the presence of any TPOs has not been confirmed.
- 2.2.4 The arboricultural desk study confirmed that the Site is not situated within a Conservation Area.

Relevant wildlife legislation

- 2.2.5 The Wildlife and Countryside Act 1981 (as amended) and the Conservation of Species and Habitat Regulations 2017 (as amended) provide statutory protection of birds, bats and other species that can inhabit trees. The Natural Environment and Rural Communities Act 2006 (Section 41 England and Section 42 Wales) also places a duty on Local Planning Authorities to consider biodiversity when carrying out their duties. The Conservation of Habitats and Species Regulations 2017 specifically provides safeguards for European Protected Sites and Species (as listed in the Habitats Directive). This has recently been amended by the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019 which continue the same provision for European protected species, licensing requirements, and protected areas now that the UK has left the European Union.
- 2.2.6 Great care is required to avoid an offence under the above legislation, and consideration should be given to the potential presence of protected species within a tree subject to future works. Where the presence of protected species is suspected, the project ecologist or Natural England should be contacted for advice before works proceed.

Felling Licence

- 2.2.7 Tree felling is also restricted under the Forestry Act 1967. Under this act, there is an exemption from the need for a felling licence for "*Felling trees immediately required for the purpose of carrying out development authorised by planning permission (granted under the Town and Country Planning Act 1990) ...*"
- 2.2.8 If full planning permission is granted, then any trees which require felling to implement the approved plans are exempt from this statutory protection. Outline planning permission does not provide an exemption to the regulations that control tree felling in the Forestry Act 1967.

¹ Rochdale Borough Council, Core Strategy [Online]. Available at < <http://www.rochdale.gov.uk/planning-and-building/local-planning-policy/the-local-plan/core-strategy/Pages/default.aspx> > (Last Accessed. December 2021)

² Rochdale Borough Council, 2021. Conservation Areas in the Borough of Rochdale [Online]. Available at: < <http://www.rochdale.gov.uk/planning-and-building/heritage-and-conservation/Pages/conservation-areas.aspx> > [Last Accessed. 04 January 2022]



3. Arboricultural Survey Results

3.1.1 The tree assessment was undertaken on 25th November 2021 by Elva Preston (Wharton Arboricultural Consultant) and the trees were inspected from ground level. The weather at the time of survey was clear and bright, there were no limitations to the assessment.

3.2 Method of data collection

3.2.1 The trees on the Site were originally surveyed without reference to the site layout as detailed in Clause 4.4.1.1 of BS5837:2012. However, for the purposes of this arboricultural assessment, the design of the Proposed Scheme has been considered.

3.2.2 The survey recorded trees either as individual specimens or as groups, where these trees were aerodynamically, culturally, or visually important as groups. The tree numbers associated with each tree are cross-referenced within the schedule and plans at Appendix 3 and 4 respectively. The complete method of data collection for the tree survey is provided at Appendix 2.

3.3 Summary of data

3.3.1 A total of 26no. individual trees and 9no. groups of trees were surveyed. This included 9no. category A, 22no. category B and 4no. category C arboricultural features. None of the features surveyed were retention category U.

3.3.2 The comments for each tree vary and are given in detail in the BS5837:2012 Tree Schedule at Appendix 3. Tree numbers T1-T6 and group numbers G1-G7 are not included as part of this assessment, as they are part of a wider survey area, not considered as part of this location.

3.3.3 Of the 35no. arboricultural features assessed, 8no. individual trees and 1no. individual group (G12) were regarded as offering a high arboricultural quality (category A).

3.3.4 The category A individual trees (T12, T13, T14, T19, T21, T22, T23 & T25) were predominantly mature in age and were located in a cluster to the centre of the Site and a second cluster in the north eastern corner. They comprised pedunculate oak, common beech, Austrian pine and sycamore and ranged in height from 17m to 19m, with stem diameters from 605mm to 965mm.

3.3.5 G12 was a group of early mature to mature sycamore, common beech, holly and pedunculate oak situated in the north eastern corner of the Site. G12 exhibited a fair structural and good physiological condition at the time of assessment and was characterised by several mature beech specimens with a distinct understory beneath. The trees comprising the group formed a cohesive canopy which contributed high arboricultural value to the Site.

3.3.6 It should be noted that *Table 1* of BS5837:2012 only gives recommendations in relation to remaining years. A tree may be considered to have a longer remaining life, however, still be of a lower category given its maturity, condition, or overall impact to the application site.

3.3.7 In line with BS5837:2012, the category A and B trees should be considered as providing a substantial contribution to a site. Therefore, Category A and B trees should be retained and incorporated into the Proposed Scheme where possible and feasible.

3.3.8 Generally, category C and U trees are of low quality or are young specimens, which can be readily replaced, therefore, should not be considered a constraint to Proposed Scheme. However, it is understood that, wherever possible, trees will be retained for the benefits that they currently provide as well as helping to ensure a continuity of tree cover and providing a mature landscape to the Proposed Scheme.

3.3.9 The location of each tree and their associated constraints including canopy spread and root protection areas with and without the Proposed Scheme are illustrated on plan A001 at Appendix 4.



4. Proposed Scheme

4.1 Description

4.1.1 The Proposed Scheme is for the construction of an aerial High Nets course, elevated by metal support posts on individual footings.

4.2 Reference documents

4.2.1 As background information, the following documentation has been referenced in *Table 1* below.

Table 1 Document and Plans Provided

Document Description	Reference No.	Prepared By	Date
Topographical Survey	211007 20G227_2D	Unknown	2021
Proposed Plans	Hollingworth Lake Assembly – Location option 1 (preferred)	Challenge Academy CIC	2021

5. Impact Assessment

5.1 Relationship between the Site layout and trees

5.1.1 To implement the Proposed Scheme, there will be an overall loss of 1no. category B individual tree (T11) and 1no. category C individual tree (T10). There will also be the requirement to reduce the canopy of G8 and G9 to facilitate the Proposed Scheme. The direct impacts have been summarised in *Table 2 below*.

5.1.2 The removal of these trees will be necessary to facilitate the positioning of the proposed High Net course with associated metal supporting poles.

5.1.3 The loss of a small number of trees will not be noticeable from beyond the curtilage of the site and will not detract from the amenity currently provided to the wider, local area. Furthermore, the removal of such a low number of trees will not have a detrimental impact of the arboricultural resource of the Site.

Table 2 Trees to be removed for proposed works.

Reason for removal	Proposed works or reason	Tree retention category				Total
		A	B	C	U	
<i>Proposed Scheme</i>	Fell to facilitate development.	-	T11	T10	-	2
<i>Partial Removal</i>	To facilitate the development.	-	G8, G9	-	-	2
Total		0	3	1	0	4

5.1.4 The High Net course has been located to minimise tree loss, as far as practicable, and to remain in keeping with the current site setting.

5.1.5 The loss of tree cover, albeit limited and confined to the internal areas of the site, away from the principal boundaries, can be compensated through the implementation of new structured tree



planting as part of an appropriately considered landscape proposal. There are opportunities within the Proposed Scheme to exploit the area around the course to plant new trees and shrub masses.

- 5.1.6 Ground Guards will be used during the construction process to minimise soil compaction within the Root Protection Areas (RPAs) of the retained trees across the Proposed Scheme. This will consist of 100mm of woodchip laid onto geotextile base overlaid with wooden boards. This will significantly reduce the likelihood of ground compaction as detailed within BS5837:2012 Clause 6.2.3.3 Note a. Woodchip and ground boarding should not be piled up around the base of trees and clearance should be given to ensure that no damage is caused.
- 5.1.7 Section 5.1.1 of BS5837:2012 recognises that the competing needs of development mean that trees are only one factor requiring consideration. It also states that misplaced tree retention can be detrimental on a site where it will cause excessive pressure on those trees being retained and could necessitate their removal in the future.
- 5.1.8 All trees, which are directly or indirectly impacted upon by the Proposed Scheme, are illustrated on plan number A002, at Appendix 4.

5.2 Below Ground Constraints

Root protection area

- 5.2.1 The below ground constraints are generally summarised as the root protection areas (RPA). The RPA is an area equivalent to a circle with a radius 12 times the diameter of the trees measured at 1.5 metres for single stemmed trees. For trees with more than one stem, one of two calculation methods should be used, dependent on the number of stems. In all cases, the stem diameter(s) should be measured in accordance with Annex C, and the RPA should be guided from Annex D of BS5837:2012.
- 5.2.2 The RPA is an area in which no ground works should be undertaken without due care in relation to the retained tree(s) and this is to avoid soil compaction, changes in levels or soil contamination which could alter the trees condition and/or stability. The shape of the RPA and its exact location will depend upon arboricultural considerations and ground conditions.
- 5.2.3 The RPA for the trees has been calculated as prescribed by BS5837:2012 and are shown as pink dashed circles on the Tree Constraints Plan at Appendix 4. These plans illustrate the relationship between the RPAs associated with the trees and the Proposed Scheme.
- 5.2.4 In addition to the illustration of RPAs on the plans at Appendix 4, the numerical RPA values are provided within the Tree Schedule at Appendix 3. Within the schedule both RPA radius in metres from the main stem and total area for the RPA as square metres.

New RPA incursion

- 5.2.5 The default position should be that structures are located outside of the RPAs of trees to be retained. However, where there is an overriding justification for construction within the RPA, technical solutions might be available to prevent damage to the tree(s), recommended within BS 5837:2012, paragraph 5.3.1.
- 5.2.6 To construct the proposed High Nets, there will be new incursions within the RPA of features G8 and G9.
- 5.2.7 Given the minimal nature of the incursions (<20% of the RPA), the impacts resulting from these incursions would be considered minor and would not adversely impact the existing physiological conditions of the trees.
- 5.2.8 It is recommended that any construction materials to be moved around the Site avoid the RPAs



of retained trees. A draft Tree Protection Plan has been provided at Appendix 4.

5.3 Above Ground Constraints

Canopy protection zone

- 5.3.1 The above ground constraints predominantly refer to the impact of the canopy of any retained tree on the Site either by size and form, shadowing, and nuisance factors. As a result, it is sometimes required that a canopy protection zone is established to ensure it is not harmed during construction.
- 5.3.2 Where the current and/or ultimate height of a Category A, B or C tree will cause an obstruction to the Proposed Scheme, this must be considered as a constraint. This is usually considered in terms of issues relating to shade and light.
- 5.3.3 An Amenity Clearance Zone (ACZ) is used to consider the impact of the proximity of retained trees to structures. The ACZ is defined as an area surrounding the tree that enables a satisfactory relationship to exist between the property and the tree, and as such is equal to two-thirds of the tree's expected mature height. The ACZ is a combination of factors such as:
- Shading (of buildings and open space)
 - Direct damage to structures
 - Future pressure for removal
 - Seasonal nuisance (e.g., leaf fall blocking gutters, fruit fall creating slippery patches and honey dew dripping on vehicles and surfaces)
- 5.3.4 Consideration is also given to species characteristics such as:
- Deciduous or evergreen.
 - Density of foliage.
- 5.3.5 Although not part of BS5837, the ACZ also reflects a more intangible factor of how comfortable the inhabitant of the property is likely to feel by the proximity of the tree to the house. It serves to protect retained trees from pressure to be felled or undergo surgery after occupation of the property.
- 5.3.6 The tree canopies are marked on the attached TCP as a continuous line around each individual tree.

Proposed pruning works.

- 5.3.7 To implement the Proposed Scheme, there is a requirement to prune G8 and G9 to provide sufficient clearance from the High Nets course. Pruning will be a crown reduction of lateral branches by no more than 3m in length to provide adequate clearance and working room for the construction process and to reduce the likelihood of injurious contact between any of the retained trees and the structures in future.

Future growth

- 5.3.8 The future growth of the trees will have a minor impact on the proposed scheme layout. Boundary trees along the High Nets course will require minor future pruning. This can be addressed with minor pruning of the lateral branches, which encroach towards the proposed built structures and parking.



6. Conclusions

- 6.1.1 This survey and impact assessment include records of 26no. individual trees and 9no. groups of trees. This included 9no. category A, 22no. category B and 4no. category C arboricultural features. Tree numbers T1-T6 and group numbers G1-G7 are not included as part of this assessment.
- 6.1.2 It has been considered desirable wherever possible that trees and groups of trees should be retained, although care has been exercised over misplaced tree preservation. In terms of the current site layout plan, there is conflict with the trees that cannot be avoided and therefore mitigation proposals are considered.
- 6.1.3 To implement the design proposal there will be an overall loss of 1no. category B individual tree (T11) and 1no. category C individual tree (T10), along with the pruning of 2no. category B groups (G8 & G9). All category A features recorded shall be retained and incorporated into the Proposed Scheme along with the remainder of the existing tree cover.
- 6.1.4 The proposed removals would have minimal impact on both the arboricultural resource and amenity value of the surrounding area. The loss of these trees is considered acceptable in the context of the Proposed Scheme and with the recommended mitigation implemented.
- 6.1.5 To construct the Proposed Scheme, there will be new incursions into the RPA of 2no. tree groups to be retained. Recommendations have been made in relation to construction techniques to minimise root disturbance resulting from these new incursions within section 5 of this report.

7. Recommendations

- 7.1.1 The successful retention of those trees that will remain on the Site will be dependent upon the quality and maintenance of any protection system that is put in place. An Arboricultural Method Statement should be provided to detail how the necessary tree protection will be implemented.
- 7.1.2 An indicative draft Tree Protection Plan (A003 – Appendix 4) has been provided, however, this is subject to alteration following a final decision notice and a detailed method statement (AMS) should be provided as part of a robust planning condition.

8. References

British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendation'

British Standard 3998:2010 'Tree work – Recommendations'

British Standard 8545:2014 Trees: from nursery to independence in the landscape – Recommendations

National Planning Policy Framework (NPPF) 2021

The Forestry Act 1967

The Town and Country Planning Act 1990

The Town and Country Planning (Tree Preservation) (England) Regulations 2012

9. Caveats and Limitations

- 9.1.1 The report is for the sole use of the client and its reproduction or use by anyone else is forbidden unless written consent is given by the author.
- 9.1.2 This is an arboricultural report and as such no reliance should be given to comments relating to buildings, engineering, or soil.
- 9.1.3 This is not an arboricultural health and safety survey, a more detailed survey of internal decay



detection etc can be supplied but would be subject to a further fee.

- 9.1.4 This is a report which should be to accompany a planning application and provides no detail specifically in relation to the health and safety of the trees.
- 9.1.5 All tree inspections were undertaken from ground level and no climbing inspections were undertaken.
- 9.1.6 Where trees have been captured beyond the Site boundary, all dimensions of trees and their associated parts are based on estimation unless otherwise stated. If trees are located within the Site boundary, measurements will not be estimated unless otherwise stated within the comments of the Tree Schedule.
- 9.1.7 Trees are growing dynamic structures. Whilst reasonable effort has been made to identify defects within the trees inspected, no guarantee can be given as to the absolute safety or otherwise of any individual tree. No tree is ever safe due to the unpredictable laws and forces of nature. As a result of this, natural failure of intact trees will occur; extreme climatic conditions can cause damage to even apparently healthy trees.
- 9.1.8 Trees are living organisms whose health, condition and structure can change quickly and without warning. Therefore, the contents of this report are valid for a period of one year from the date of this survey.
- 9.1.9 On undertaking the recommended works, the arborist/tree surgeon must without delay report any defects that become apparent while climbing or working on the tree/s in question. Those defects must be reported immediately to the relevant project manager, landowner and/or the author of this report to enable the appropriate remedial action.
- 9.1.10 This is an arboricultural report and therefore does not rely on ecological or archaeological data. If either is commented upon within the report further professional advice should be sought.



Appendix 1: Red Line Boundary Plan

Hollingworth lake High Nets

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Appendix 2:

Survey and Assessment Methodology

- i. The trees on the Site were originally surveyed without reference to site layout as detailed in paragraph 4.4.1.1 of BS5837:2012. However, for the purposes of the Arboricultural Impact Assessment the Proposed Scheme for the Site has been considered.
- ii. The position of each tree was plotted with reference to the supplied ordinance survey plan. Small trees with a stem diameter less than 75mm were generally not surveyed as they would either be easily replaced or relocated.
- iii. Each individual tree has been given a tree identification number, the groups and hedges clearly defined for the purpose of this report. Metal tags have not been used for this survey as identification on-site does not require this. The tree numbers associated with each tree are cross referenced within the schedule and plans at Appendix 3 and 4 respectfully.
- iv. The tree species have been recorded with both common and botanical names.
- v. All tree heights have been assessed using a clinometer and were indicated in groups the height of the tallest tree was measured unless otherwise stated. Tree heights are given in metres.
- vi. All stem diameters were measured at 1.5 metres above ground level and are given in millimetre units (unless otherwise stated where "gl" is an abbreviation for ground level where diameter was measured just above root flare, "est" is an estimate and "av" is an average).
- vii. The canopy spread is recorded in either the four cardinal points or is given as an average diameter for the crown, especially in groups or where the crown is evenly weighted. Canopy spreads are measured in metres.
- viii. The height of the ground clearance is given in metres and is an estimate of the height of the first branch above ground level.
- ix. In absence of detailed information on the age the following classification has been used:

Young	Young trees aged less than 1/3 life expectancy.
Semi-Mature	Established specimen approaching 1/3 life expectancy.
Early-Mature	Middle age trees 1/3 – 2/3 life expectancy.
Mature	Mature trees over 2/3 life expectancy.
Over-Mature	Over-mature – declining or moribund trees of low vigour; and
Veteran	Veteran trees – specimens exhibiting 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.
- x. Age class is indicative and will vary between species.
- xi. The structural condition of the trees has been assessed and is summarised as:

Good	Few minor defects of little overall significance.
Fair	A significant defect or several small defects.
Poor	Major defect present or many small defects.

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- xii. The physiological condition has been recorded to provide an indication of the tree's general health and vitality. The trees have been described thus:

Good	Generally in good health typical of the species.
Fair	Reasonable health with few defects.
Poor	Trees that exhibit significant defects which are irremediable or moribund tree.
Dead	Tree has died.

- xiii. Each tree was individually assessed and comments, where appropriate, were recorded for the condition of each tree's roots, main stem, and crown.
- xiv. General comments have also been made where appropriate, with recommendations when relatively immediate works are given.
- xv. Estimated remaining contribution has been categorised as: less than 10 years, 10-20 years, 20-40 years or over 40 years, based upon an assessment of the tree's potential safe useful life expectancy. The remaining contribution in years has not always been directly followed in relation to the retention categories of the trees as trees may have a long remaining life however be of little significance in terms of development.



Glossary of Terms

Term	Acronym	Definition
Arboricultural Clerk of Works	ACoW	The ACoW is a competent arboriculturist that is employed to oversee all construction matters relating to trees. Typical site monitoring tasks include but not limited to: checking tree protection fencing is installed and positioned correctly, oversee excavation works that are within the RPA of trees and deliver toolbox talks.
Arboricultural Impact Assessment	AIA	An element of the British Standard 5837:2012 '<i>Trees in Relation to Design, Demolition and Construction - Recommendation</i>'. An AIA is a report intended to inform the Local Planning Authority of the impacts of a Proposed Scheme to the surrounding trees. The report acknowledges the direct and indirect impacts that the development will (or may, in relation to outline applications) have on the trees and conversely, the trees on the development. The aim is to establish if the trees can co-exist in harmony with the development and continue to contribute to the site for many years.
Arboricultural Method Statement	AMS	Part of British Standard 5837:2012 ' <i>Trees in Relation to Design, Demolition and Construction - Recommendation</i> ' the AMS specifies what works are required in relation to tree protection and retention and details any alternative construction methods necessary to protect and avoid foreseeable damage to retained trees.
Construction Exclusion Zone	CEZ	The CEZ is a designated area decided by the project arboriculturist. It is where pedestrians, storage of materials and vehicular movement is prohibited during the construction period. This is identified on a tree protection plan, where lines are annotated onto the site plan, indicating where fencing must be installed onsite to form an exclusion zone.
RPA	Root Protection Area	The RPA provides the minimum amount of space deemed sufficient to sustain a trees viability. This area is typically calculated by measuring the diameter of a trees stem at 1.5m from ground level in millimetres and multiplied by 12. This equals the radius in metres and is used to create a circular radius centred off the stem. There are external factors that means there are sometimes variations to this method.



Term	Acronym	Definition
TCP	Tree Constraints Plan	The initial stage of a BS5837:2012 tree survey. A site assessment of all trees on or within influencing distance of the site, trees are denoted on a plan overlaid with the existing context of the site, often in the form of a topographical survey or OS map. Trees are superimposed onto the plan to show their reference number (e.g., T1), canopy spread, retention categorisation and RPA,
TRRP	Tree Retention and Removals Plan	A plan denoting which trees will be lost as a result of the development and the trees that can viably be retained within the proposed setting. Trees are often denoted in green and red, for retention and removal.
TPP	Tree Protection Plan	A plan showing the retained trees will be protected through construction of the Proposed Scheme. Various annotations are added to demonstrate what mitigation and protection is required; pre, during and post development.
ACZ	Amenity Clearance Zone	An ACZ is used to consider the impact of the proximity of retained trees to structures. The ACZ is defined as an area surrounding the tree that enables a satisfactory relationship to exist between the property and the tree, and as such is equal to two-thirds of the tree's expected mature height. The ACZ is a combination of factors such as shading, future pressure for removal and seasonal nuisance.



Impact Assessment Methodology

Level of Effect		Criteria
Significant	<i>Substantial</i>	Effects assigned this level of significance represent key factors in the decision-making process. These effects are generally, but not exclusively, associated with sites and features of national or regional importance. The effects may result in a change at a county scale site or feature may also enter this category.
	<i>Major</i>	These effects are likely to be important considerations at a district scale and may become key factors in the decision-making process.
	<i>Moderate</i>	These effects, while important at a local scale, are not anticipated to be key decision-making issues.
Not Significant	<i>Minor</i>	These effects may be raised as local issues but are unlikely to be of importance in the decision-making process.
	<i>Negligible or No Effect</i>	These effects are imperceptible, or within normal bounds of variation, or in the margins of forecasting errors. Such effects should not be considered by the decision-maker.

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VERSION: V1 DATE: January 2022
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Environmental Effects	Duration	Criteria
Permanent	<i>Permanent</i>	A change that is irreversible (e.g. permanent land take) or will last for the foreseeable throughout the operation, the operation of the Proposed Scheme and are more generally associated with the completed development.
Temporary	<i>Long</i>	Assessment of the likely significant effects that last for six or more years.
	<i>Medium</i>	Assessment of the likely significant effects that last between one and five years.
	<i>Short</i>	Assessment of the likely significant effects that last between one and five years.



Appendix 3: Schedules

BS5837:2012 Cascade Chart

Complete Tree Schedule

Category and Definition	Criteria (including subcategories where appropriate)			ID Colour on Plan
Trees unsuitable for retention (see Note)				
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 (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning); Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline; and/or 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; see 4.5.7.			Dark Red (127-000-000)
Trees to be considered for retention (see Note)				
	1 - Mainly arboricultural qualities	2 - Mainly landscape qualities	3 - Mainly cultural values, including conservation	
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years.	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue).	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features.	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture).	Light Green (000-255-000)
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 remediable 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 <i>with</i> material conservation or other cultural value.	Mid Blue (000-000-255)
Category C Trees of low quality currently in adequate condition with at least 10 years life expectancy, 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 only temporary/transient landscape benefits.	Trees with <i>no</i> material conservation or other cultural value.	Grey (091-091-091)

BS5837:2012 Tree Schedule



Tree No.	Tag No.	Species (Common Name)	Species (Botanical Name)	Height (m)	Stem Dia (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Phys Con	Struc Con	Additional notes	Preliminary works recommendations	Estimated remaining contribution	Ret Cat	RPA (m²)	RPA Radius (m)
						N	E	S	W										
INDIVIDUAL TREES																			
T7	No Tag.	Sycamore	<i>Acer pseudoplatanus</i>	14	635	5	3	7	9	4	Mat	Fair	Fair	Situated along the sites southern boundary. Small cavity at base noted on the north eastern side. Cavity occluding well. Bifurcates at 2.5m. Canopy slightly sparse however could be due to adjacent trees which have been recently removed. Unsuitable for high ropes without further assessment of cavity.	No works required at the time of assessment.	20 to 40 years	B1	177	7.5
T8	No Tag.	Sycamore	<i>Acer pseudoplatanus</i>	14	635	4	8	7	9	2.5	Mat	Fair	Good	Situated on the sites western boundary. Located on embankment down to public footpath. Small pruning wounds noted on the lower stem, some of which have formed small cavities. Crown opens up at c.4m and becomes multi stemmed. Lower crown is exhibiting signs of dieback leaving minor deadwood. Canopy cohesive and suppressed by adjacent tree to the north. Moderate arboricultural potential. Likely suitable from tree risk perspective however open spreading crown form may be difficult.	No works required at the time of assessment.	20 to 40 years	B1	177	7.5
T9	No Tag.	Common beech	<i>Fagus sylvatica</i>	17	635	7	7	3	9	3	Mat	Good	Good	Situated on the sites western boundary. Located on embankment down to public footpath. Small pruning wounds noted on the lower stem, which have occluded. Trifurcates at 3m. Canopy cohesive and suppressed by adjacent tree to the south. Moderate arboricultural potential. Likely suitable from tree risk perspective however open spreading crown form may be difficult.	No works required at the time of assessment.	20 to 40 years	B1	177	7.5
T10	No Tag.	Silver birch	<i>Betula pendula</i>	8	300	5	3	4	5	3	S/Mat	Good	Good	Semi mature specimen located centrally within the site. Single stem. Minor lean to the north. Adds to the wider group.	No works required at the time of assessment.	10 to 20 years	C1, 2	41	3.6
T11	No Tag.	Sycamore	<i>Acer pseudoplatanus</i>	15	775	3	5	10	9	5	Mat	Fair	Fair	Mature specimen located centrally within the site. Single stem with minor lean south. Trifurcates at c.2m. Canopy biased south. Dieback associated with the southern portion of the canopy with a sparse canopy. Possibly as a result of drought conditions. Small diameter deadwood associated with canopy. Unsuitable for high ropes.	No works required at the time of assessment.	20 to 40 years	B1, 2	272	9.3
T12	No Tag.	Pedunculate oak	<i>Quercus robur</i>	17	605	11	4	6	10	3	E/Mat	Good	Good	Situated in the centre of the public open space. Small Holly growing at base obscured base. Eastern canopy suppressed by adjacent tree. Moderate pruning wound on the western face of the lower stem is occluding well. Bird box noted on the stem. Tree crown spreads from c.5m. High quality arboricultural feature. Likely suitable for high ropes course.	No works required at the time of assessment.	>40 years	A1, 2	163	7.2
T13	No Tag.	Austrian pine	<i>Pinus nigra var nigra</i>	18	665	7	7	5	4	3	Mat	Good	Good	Situated in the centre of the public open space. Western canopy suppressed by adjacent tree. Tree has formed significant primary branch at c.2.5m which is as wide as the main stem. Fibres appear to be buckling at the underside of the branch union. Tree appears to be putting on reactive growth but structural stability should be investigated further. Tree has high crown form making the canopy a little sparse. Some moderate deadwood present in the lower canopy. High quality arboricultural feature. Likely suitable for high ropes however will need further investigation on secondary stem.	No works required at the time of assessment.	>40 years	A1, 2	206	8.1

BS5837:2012 Tree Schedule



Tree No.	Tag No.	Species (Common Name)	Species (Botanical Name)	Height (m)	Stem Dia (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Phys Con	Struc Con	Additional notes	Preliminary works recommendations	Estimated remaining contribution	Ret Cat	RPA (m²)	RPA Radius (m)
						N	E	S	W										
T14	No Tag.	Pedunculate oak	<i>Quercus robur</i>	18	910	7	7	5	8	3	Mat	Fair	Fair	Mature specimen located on the western boundary of the site. Single stem. Dense ivy on the stem and scaffold partially obscuring assessment. Large prominent feature along the boundary. Small diameter deadwood associated with canopy. Slightly sparse canopy. Adds height to the wider group.	Sever ivy at base and allow to die back.	>40 years	A1, 2	366	10.8
T15	No Tag.	Pedunculate oak	<i>Quercus robur</i>	14	425	7	4	3	8	3	E/Mat	Fair	Fair	Early mature specimen located on the western boundary of the site. Single stem. Small Holly located at the base. Canopy significantly biased to the west. Adds to the wider linear group.	No works required at the time of assessment.	20 to 40 years	B1, 2	82	5.1
T16	No Tag.	Pedunculate oak	<i>Quercus robur</i>	14	630	8	9	9	8	3	E/Mat	Good	Good	Situated to the north of the footpath outside of the RLB. Within the public open space. Small pruning wounds on the lower stem have occluded. Tree has open spreading crown form and becomes multi stemmed at c.4m. Small to medium diameter deadwood is noted in the lower canopy. Particularly sparse canopy to the east, which could due to dieback suppression from wider tree group. Epicormic growth on branches within the crown. Moderate future potential.	Remove suspended deadwood over the footpath.	20 to 40 years	B1, 2	177	7.5
T17	No Tag.	Silver birch	<i>Betula pendula</i>	14	485	6	6	6	6	2	Mat	Good	Good	Mature specimen located on the northern boundary of the site. Single stem. Good radial canopy. Birdbox at c.3m East. Adds to the wider group located beyond the site boundary.	No works required at the time of assessment.	20 to 40 years	B1, 2	102	5.7
T18	No Tag.	Sycamore	<i>Acer pseudoplatanus</i>	17	650	6	9	8	6	5	Mat	Fair	Fair	Situated adjacent to the footpath towards the northern boundary of the site. Located on a slight embankment with the lowest point to the north. Vigorous epicormic suckers at base. Delaminating bark on stem. Historic pruning wounds in lower stem at various widths are trying to occlude. Canopy biased to the east and south due to suppression from adjacent trees. Small and medium diameter deadwood present in the crown which is relatively sparse. Moderate future potential.	No works required at the time of assessment.	20 to 40 years	B1	191	7.8
T19	No Tag.	Common beech	<i>Fagus sylvatica</i>	19	875	9	9	11	7	2	Mat	Good	Fair	Mature specimen located on the northern boundary of the site. Single stem with minor bias to the southwest. Cavity at base southwest, with small cavity on stem northeast. Possible central decay column forming with visible reaction growth on the lower stem. Lower canopy previously raised. Large wide spread canopy appears to be of good vigor. High value tree forms part of a wider boundary wooded group.	Further investigation required to determine the extent of decay associated with the base.	20 to 40 years	A1, 2	346	10.5
T20	No Tag.	Pedunculate oak	<i>Quercus robur</i>	17	605	6	9	7	5	3	E/Mat	Fair	Good	Early mature specimen located on the northern boundary of the site. Single stem. Large initial limb east at c.3m. Sparse canopy throughout, likely as a result of drought. Condition should be monitored.	No works required at the time of assessment.	20 to 40 years	B1, 2	163	7.2

BS5837:2012 Tree Schedule



Tree No.	Tag No.	Species (Common Name)	Species (Botanical Name)	Height (m)	Stem Dia (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Phys Con	Struc Con	Additional notes	Preliminary works recommendations	Estimated remaining contribution	Ret Cat	RPA (m²)	RPA Radius (m)
						N	E	S	W										
T21	No Tag.	Common beech	<i>Fagus sylvatica</i>	19	925	12	9	10	12	3	Mat	Good	Good	Situated along the northern boundary of the site. Footpath runs along the south east of the stem. FFB noted on the ground close to base, unlikely to be associated with the tree. Small cavities between buttress flares. Stem and underside of lower branches do not have smooth bark, it is characterised by small bobbles. Bird box on stem. Tree becomes multi stemmed at c.3.5m. Historic pruning wounds in canopy have occluded. Open spreading crown form. High quality arboricultural feature. Would need assessing for structural integrity to determine suitability for high ropes course.	No works required at the time of assessment.	>40 years	A1, 2	387	11.1
T22	No Tag.	Common beech	<i>Fagus sylvatica</i>	18	745	9	6	8	8	2.5	Mat	Good	Good	Situated along the northern boundary of the site. Footpath runs along the south of the stem. Small cavities between buttress flares. Stem and underside of lower branches do not have smooth bark, it is characterised by small bobbles. Small cavity in the stem on the northern face at c.1.5m. Tree becomes multi stemmed at c.3.5m. Two branches have merged to the south at c.3.5m forming included union. Historic pruning wounds in canopy have occluded. Open spreading crown form. High quality arboricultural feature. Would need assessing for structural integrity to determine suitability for high ropes course.	Remove deadwood in lower canopy.	>40 years	A1, 2	254	9.0
T23	No Tag.	Sycamore	<i>Acer pseudoplatanus</i>	15	635	6	3	6	8	3.5	Mat	Good	Good	Mature specimen located centrally within the site. Single stem. Footpath located adjacent to the west. Canopy biased to the east. Common cohesive canopy with the adjacent specimens. Good future potential.	No works required at the time of assessment.	>40 years	A1, 2	177	7.5
T24	No Tag.	Sycamore	<i>Acer pseudoplatanus</i>	15	555	4	7	3	3	3.5	E/Mat	Good	Fair	Early mature specimen located centrally within the site. Single stem. Footpath located adjacent to the east. Canopy biased to the west. Common cohesive canopy with the adjacent specimens. Good future potential.	No works required at the time of assessment.	20 to 40 years	B1, 2	137	6.6
T25	No Tag.	Common beech	<i>Fagus sylvatica</i>	19	965	10	11	9	10	3	Mat	Good	Good	Mature specimen located centrally within the site. Single stem. Footpath located adjacent to the stem west. Lower canopy previously raised with good occlusion. Good radial canopy, although suppressed east by adjacent group. Good future potential. Of high arboricultural merit.	No works required at the time of assessment.	>40 years	A1, 2	430	11.7
T26	No Tag.	Sycamore	<i>Acer pseudoplatanus</i>	18	660	9	6	8	5	4	Mat	Fair	Fair	Situated close to the eastern boundary of the site. Located on top of embankment which slopes down to the public footpath in the south east. Basal epicormic suckers around stem. Surface roots exposed where ground is compacted on top of the slope. Tree putting on reactive growth to the eastern face of the stem. Historic pruning wounds have occluded. Lower canopy exhibits signs of dieback. Small and medium deadwood throughout canopy. Crown suppressed by adjacent trees. Moderate future potential. Unlikely to be suitable for high ropes course.	No works required at the time of assessment.	20 to 40 years	B1	191	7.8

BS5837:2012 Tree Schedule



Tree No.	Tag No.	Species (Common Name)	Species (Botanical Name)	Height (m)	Stem Dia (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Phys Con	Struc Con	Additional notes	Preliminary works recommendations	Estimated remaining contribution	Ret Cat	RPA (m²)	RPA Radius (m)
						N	E	S	W										
T27	No Tag.	Sycamore	<i>Acer pseudoplatanus</i>	17	645	5	6	9	2	3	Mat	Fair	Fair	Situated close to the eastern boundary of the site. Located on top of embankment which slopes down to the public footpath to the south east. Basal epicormic suckers around stem. Tree has significant lean down the bank to the south which has caused root plate life to the north. Surface roots exposed where ground is compacted on top of the slope. Tree putting on reactive growth to the southern face of the stem to prevent collapse. Historic pruning wounds have occluded. Lower canopy exhibits signs of dieback. Small and medium deadwood throughout canopy. Crown suppressed by adjacent trees. Limited future potential. Not suitable for high ropes course.	No works required at the time of assessment.	10 to 20 years	C1	191	7.8
T28	No Tag.	Common beech	<i>Fagus sylvatica</i>	17	625	9	9	4	6	4	E/Mat	Good	Good	Early mature specimen located towards the southern boundary of the site. Single stem. Canopy biased northeast. Good future potential.	No works required at the time of assessment.	>40 years	B1, 2	177	7.5
T29	No Tag.	Pedunculate oak	<i>Quercus robur</i>	17	580	11	5	5	9	4	E/Mat	Good	Good	Early mature specimen located towards the southern boundary of the site. Single stem. Lower canopy previously raised. Canopy biased north. Good future potential.	No works required at the time of assessment.	>40 years	B1, 2	150	6.9
T30	No Tag.	Common beech	<i>Fagus sylvatica</i>	17	540	6	3	1	9	4	E/Mat	Good	Good	Early mature specimen located towards the southern boundary of the site. Single stem. Lower canopy previously raised. Canopy biased west. Good future potential.	No works required at the time of assessment.	>40 years	B1, 2	137	6.6
T31	No Tag.	Sycamore	<i>Acer pseudoplatanus</i>	17	515	5	5	5	6	4	E/Mat	Fair	Good	Situated close to the sites eastern boundary along the public footpath. Epicormic basal suckers. Birds nest noted in basal suckers. Small cavity on the south western stem at c.0.5m. Tree trying to occluded. High crown form. Cohesive and suppressed by adjacent trees. Tar spots on leaves. Small to medium diameter deadwood in the lower crown. Moderate future potential.	No works required at the time of assessment.	20 to 40 years	B1, 2	125	6.3
T32	No Tag.	Common beech	<i>Fagus sylvatica</i>	18	765	6	7	7	3	3	Mat	Good	Fair	Situated close to the sites eastern boundary along the footpath. Small cavities noted in between the buttress flares. Stem has significant lean to the south down the embankment. Crown growing away from adjacent trees. Little reactive growth on stem noted. Tree becomes multi stemmed at c.2.5m. Debris decay pocket in union. Branches leaving the union have become included and formed one branch. Bird box on stem. Small to medium diameter deadwood in the crown. Historic and recent pruning wounds noted. Moderate future potential. Unlikely to be suitable for high ropes course.	No works required at the time of assessment.	20 to 40 years	B1, 2	272	9.3

BS5837:2012 Tree Schedule

Client Name: Rochdale Borough Council
 Site: Hollingworth Lake
 Ref No: 211125 1340 TS V1 High Ropes

Consultant: E. Preston
 Survey Date: November 2021



Tree No.	Tag No.	Species (Common Name)	Species (Botanical Name)	Height (m)	Stem Dia (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Phys Con	Struc Con	Additional notes	Preliminary works recommendations	Estimated remaining contribution	Ret Cat	RPA (m²)	RPA Radiu (m)
						N	E	S	W										
TREE GROUPS																			
G8	No Tag.	Sycamore, Common beech, English holly, Pedunculate oak	<i>Acer pseudoplatanus</i> , <i>Fagus sylvatica</i> , <i>Ilex aquifolium</i> , <i>Quercus robur</i>	6 - 12	375 - 725	7	7	7	7	2	E/Mat	Fair	Fair	Situated in southernmost boundary of the site. 12 trees growing in public open space around footpath. Group on slight embankment which is higher towards the northern end. Removal of rhododendron around the base of these trees has been recently carried out. Trees exhibit some recent pruning wounds on their lower stems. Trees, especially sycamore have high canopy forms. Most trees have sparse crowns with spindly upper branches. Moderate arboricultural value. Not suitable for high roped course given sparse canopies and spreading crown forms from c.3/4m.	No works required at the time of assessment.	20 to 40 years	B1, 2	238	8.7
G9	No Tag.	Sycamore, Common beech, English holly, Pedunculate oak	<i>Acer pseudoplatanus</i> , <i>Fagus sylvatica</i> , <i>Ilex aquifolium</i> , <i>Quercus robur</i>	6 - 12	365 - 565	8	8	8	8	2	E/Mat	Fair	Fair	Situated on westernmost boundary of the site. 8 trees growing in public open space around footpath. Group on slight embankment which is higher towards the centre of the site. Holly is multi stemmed from base. Oak specimen has noticeable sparse crown. Trees exhibit some large pruning wounds on their lower stems. Trees have low, open spreading canopy forms. Most trees have sparse crowns with spindly upper branches. Both oak trees have small branch socket cavities in their lower stems. Moderate arboricultural value. Not suitable for high roped course given low and spreading crown forms from c.2/3.	No works required at the time of assessment.	20 to 40 years	B1, 2	150	6.9
G10	No Tag.	Sycamore, Pedunculate oak	<i>Acer pseudoplatanus</i> , <i>Quercus robur</i>	13 - 15	580 - 900	10	10	10	10	0	E/Mat	Fair	Fair	Situated in the centre of the public open space. 2 trees with footpath running through the middle of the two trees. Sycamore to the south is multi stemmed from 1m. Stem union shows bowl feature in the centre with surface cracks on either side where the stems are growing in different directions. Medium sized recent pruning wounds on the lower stem. Some epicormic growth noted in the lower canopy. Bird box on one of the stems. Open spreading crown form which has suppressed the oak to the north. Oak is growing heavily biased to the north with significant lean on the canopy. Epicormic shoots are present in the lower crown. Small basal cavity is noted to the south. And old branch socket cavity to the south which is trying to occlude. Northern canopy has large diameter deadwood in the lower crown. Dense epicormic growth throughout. Crown spread to the east is 12m. Both trees are unsuitable for high ropes course.	No works required at the time of assessment.	20 to 40 years	B1	366	10.8
G11	No Tag.	Sycamore	<i>Acer pseudoplatanus</i>	12 - 14	380 - 675	7	7	7	7	3	E/Mat	Good	Good	Situated in the centre of the public open space. Two trees with cohesive canopy. Recent and historic pruning wounds to the lower stem. Historic wounds have occluded. Northernmost smallest tree is in decline with large diameter deadwood comprising the lower canopy. Likely due to suppression from adjacent trees. Both trees have sparse canopies. Telephone wire running through the canopies. Open spreading crown forms. Trees unsuitable for high ropes course.	Remove deadwood over footpath.	20 to 40 years	C1, 2	206	8.1
G12	No Tag.	Sycamore, Common beech, English holly, Pedunculate oak, Rhododendron species	<i>Acer pseudoplatanus</i> , <i>Fagus sylvatica</i> , <i>Ilex aquifolium</i> , <i>Quercus robur</i> , <i>Rhododendron sp.</i>	6 - 19	250 - 975	7	7	7	7	2	Mat	Good	Fair	Early mature to mature group located on the northern boundary of the site. Single stems. Located on a steep bank. Common cohesive canopy. Of high arboricultural merit. Good future potential.	No works required at the time of assessment.	>40 years	A1, 2	430	11.7
G13	No Tag.	Sycamore, Common hazel, Common hawthorn, Common beech	<i>Acer pseudoplatanus</i> , <i>Corylus avellana</i> , <i>Crataegus monogyna</i> , <i>Fagus sylvatica</i>	10 - 14	280 - 555	5	5	5	5	15	E/Mat	Good	Good	Early mature group framing the eastern boundary of the site. Mix of single and multi stemmed species. Forms a dense cohesive canopy. Frames offsite Road to the west. Good future potential. Not suitable for high ropes.	No works required at the time of assessment.	20 to 40 years	B1, 2	137	6.6

BS5837:2012 Tree Schedule

Client Name: Rochdale Borough Council
Site: Hollingworth Lake
Ref No: 211125 1340 TS V1 High Ropes

Consultant: E. Preston
Survey Date: November 2021



Tree No.	Tag No.	Species (Common Name)	Species (Botanical Name)	Height (m)	Stem Dia (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Phys Con	Struc Con	Additional notes	Preliminary works recommendations	Estimated remaining contribution	Ret Cat	RPA (m²)	RPA Radius (m)
						N	E	S	W										
G14	No Tag.	Sycamore, Common hazel, Common hawthorn, Common beech, Pedunculate oak	<i>Acer pseudoplatanus</i> , <i>Corylus avellana</i> , <i>Crataegus</i> <i>monogyna</i> , <i>Fagus sylvatica</i> , <i>Quercus robur</i>	10 - 14	280 - 555	5	5	5	5	15	E/Mat	Good	Good	Early mature group framing the eastern boundary of the site. Mix of single and multi stemmed species. Forms a dense cohesive canopy. Frames offsite Road to the west. Good future potential. Not suitable for high ropes.	No works required at the time of assessment.	20 to 40 years	B1, 2	137	6.6
G15	No Tag.	Sycamore, Pedunculate oak	<i>Acer pseudoplatanus</i> , <i>Quercus robur</i>	16 - 12	280 - 600	7	7	7	7	5	E/Mat	Good	Fair	Early mature group located towards the eastern boundary of the site. Comprises of 2no sycamore and 1no pedunculate oak. Single stems. Common cohesive canopy. Mutually suppressed. Moderate future potential.	No works required at the time of assessment.	20 to 40 years	B1, 2	163	7.2
G16	No Tag.	Red maple	<i>Acer rubrum</i>	3 - 5	75 - 90	1	1	1	1	1	NP	Fair	Good	New plantings. Significant wilting, likely resulting from a lack of maintenance.	Implement a watering regime.	10 to 20 years	C1, 2	5	1.2



Appendix 4: Plans

Tree Constraints Plan (A001)

Tree Retention and Removal Plan (A002)

Draft Tree Protection Plan (A003)



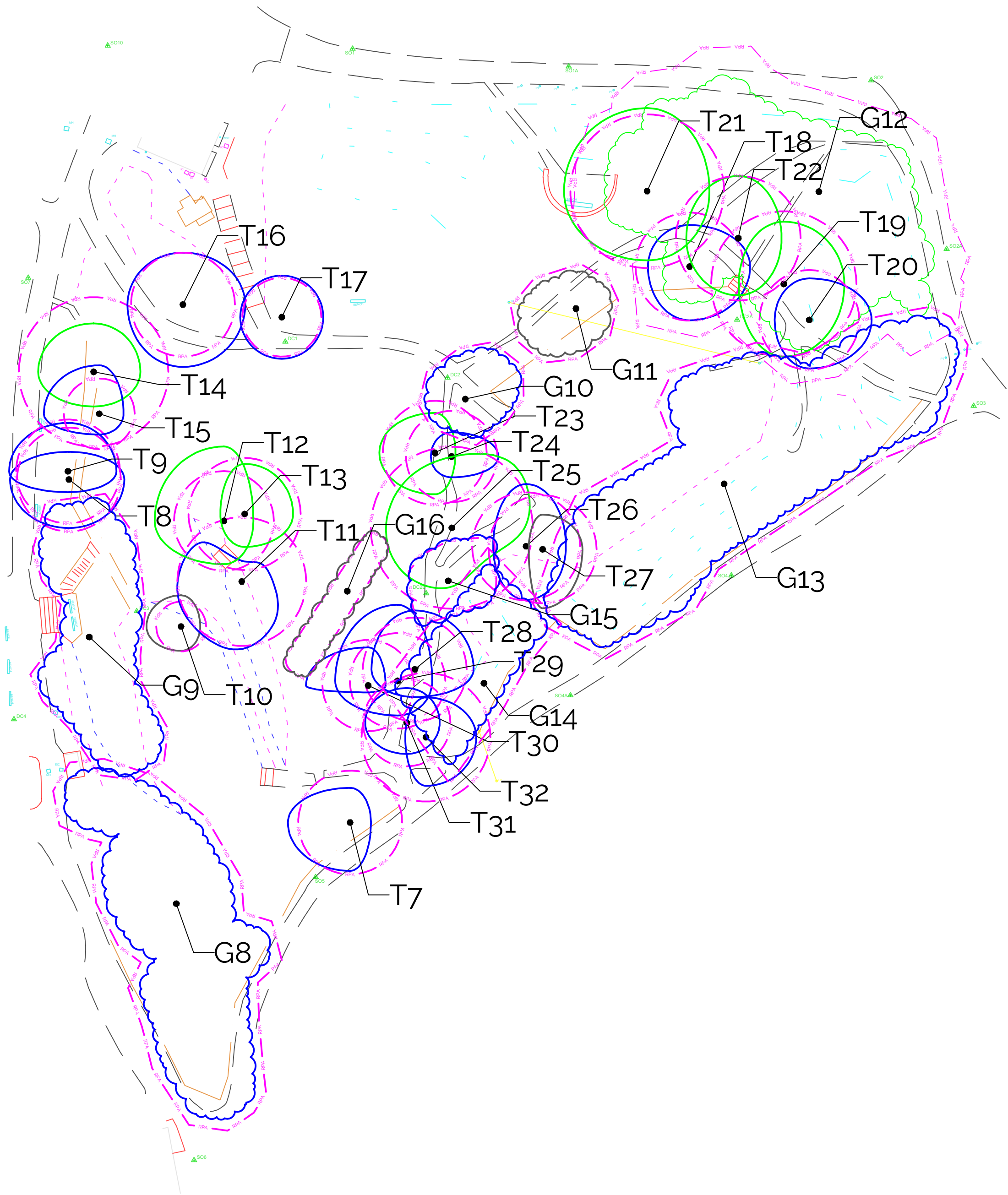
A Category Trees /
High Retention Value

B Category Trees /
Moderate Retention Value

C Category Trees /
Low Retention Value

U Category Trees /
Remove

Canopy Spread (m)
Tree Stem
Root Protection
Area (RPA)



This TCP is created as a design tool and does not make an assessment of the impacts or subsequent effects of the Proposed Development to trees. Therefore, the TCP must not be submitted solely to inform the planning application. An Arboricultural Impact Assessment or similar report will be required to inform the planning application which the TCP may form part of.

Date: November 2021

Client: Rochdale Borough Council

Project: High Nets, Hollingworth Lake

Title: Tree Constraints Plan

Map file reference	DWG No
211013 1340 TCP P2 V1	A001

WHARTON
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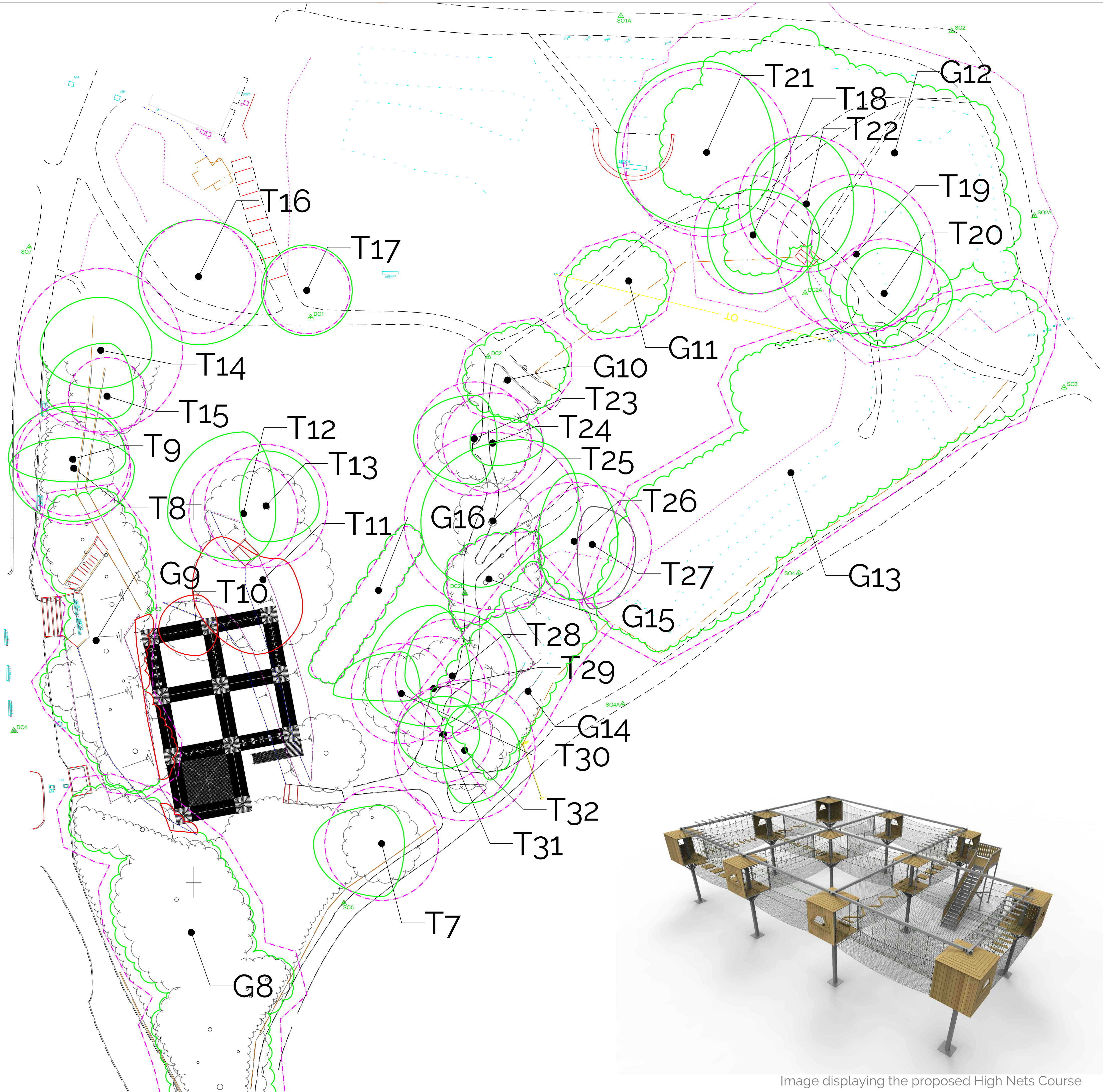
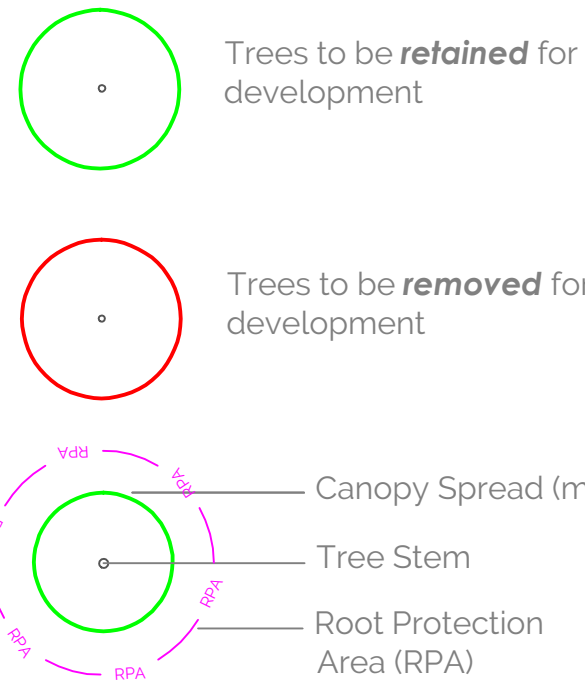


Image displaying the proposed High Nets Course

Date: January 2022

Client: Rochdale Borough Council

Project: Hollingworth Lake High Ropes

Title: Tree Retention and Removals Plan

Map file reference	DWG No
220104 1340 TRRP V1	A002

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A Category Trees /
High Retention Value

B Category Trees /
Moderate Retention Value

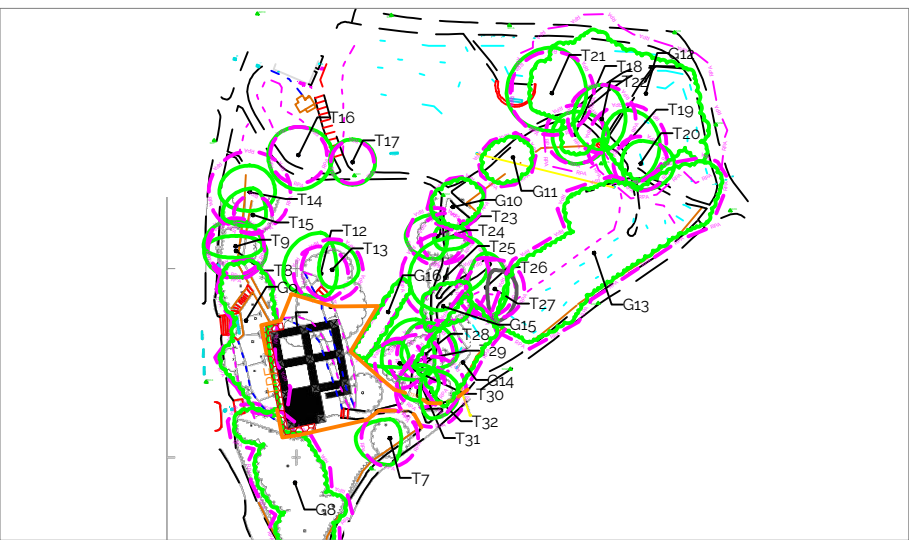
C Category Trees /
Low Retention Value

U Category Trees /
Remove

Canopy Spread (m)
Tree Stem
Root Protection
Area (RPA)

Tree Protection Fencing

Ground Guards



Date: January 2022

Client: Rochdale Borough Council

Project: Hollingworth Lake High Ropes

Title: Tree Protection Plan

Map file reference

DWG No

220104 1340 TPP V1

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Ground-Guards

Bulletin

TREE ROOT PROTECTION DURING CONSTRUCTION PROJECTS

The Department for Communities and Local Government's guide "Tree Roots in the Built Environment" states that "ground protection should be installed before any materials or machinery is brought onto the site" (Section 9.3.3.2)

It has been shown that "the major contribution to soil compaction from vehicle movements comes from the first passes of vehicles over the ground" (Section 4.2.3)

Thus it is essential that ground protection is specified and installed from day one of construction projects.

Failure to protect the ground from compaction will lead to reduced water and oxygen infiltration to the tree roots, and can ultimately lead to the decline of the tree.

The use of GROUND-GUARDS for tree root protection

The Ground-Guards temporary roadway system is frequently used on construction sites to protect the ground from erosion and damage by construction vehicles. Ground-Guards are usually installed as a roadway consisting of a parallel track of 2.4m x 1.2m panels with a 1.2m space in between. Where a temporary roadway must pass near to trees, the following extra precautions must be taken in order to provide cushioning for the ground under the tree canopy:

1. Edge rails of 200 x 50mm sawn timber should be installed where the trackway will pass under the tree canopy. These should be staked on either side of the trackway using 50 x 50x 500mm timber stakes at 1.5m spacings.
2. A layer of geotextile membrane should be laid to cover at least the area under the tree canopy, and preferably under the whole of the trackway.
3. A pad of Ground-Guards, three boards wide should be laid on top of the geotextile membrane, between the timber rails.
4. A 150mm deep layer of wood chippings should be laid.
5. The twin trackway can then be laid so that it rises over the wood chippings as it passes under the tree canopy. Extra Ground-Guard boards should be installed in the gap between the twin trackway at this point to retain the wood chips in place.

Ground protection is essential to maintain the health of tree roots on construction sites

Ground-Guard trackways should have additional cushioning installed where they pass near to trees

200x50 timber rails
50x50x500 timber stakes
Geotextile Membrane
Base layer of Ground-Guards
Wood Chippings
Ground-Guard Trackway

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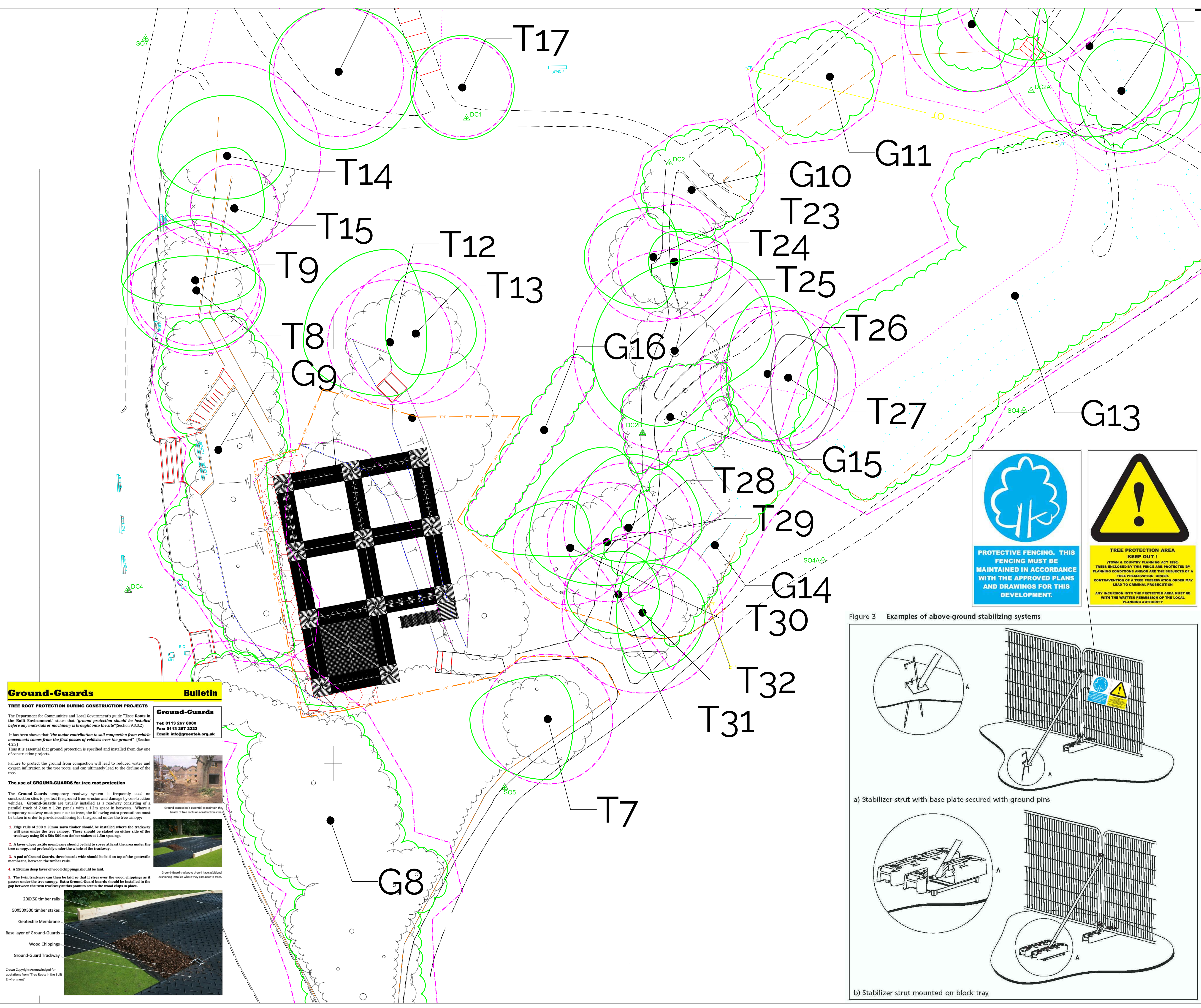
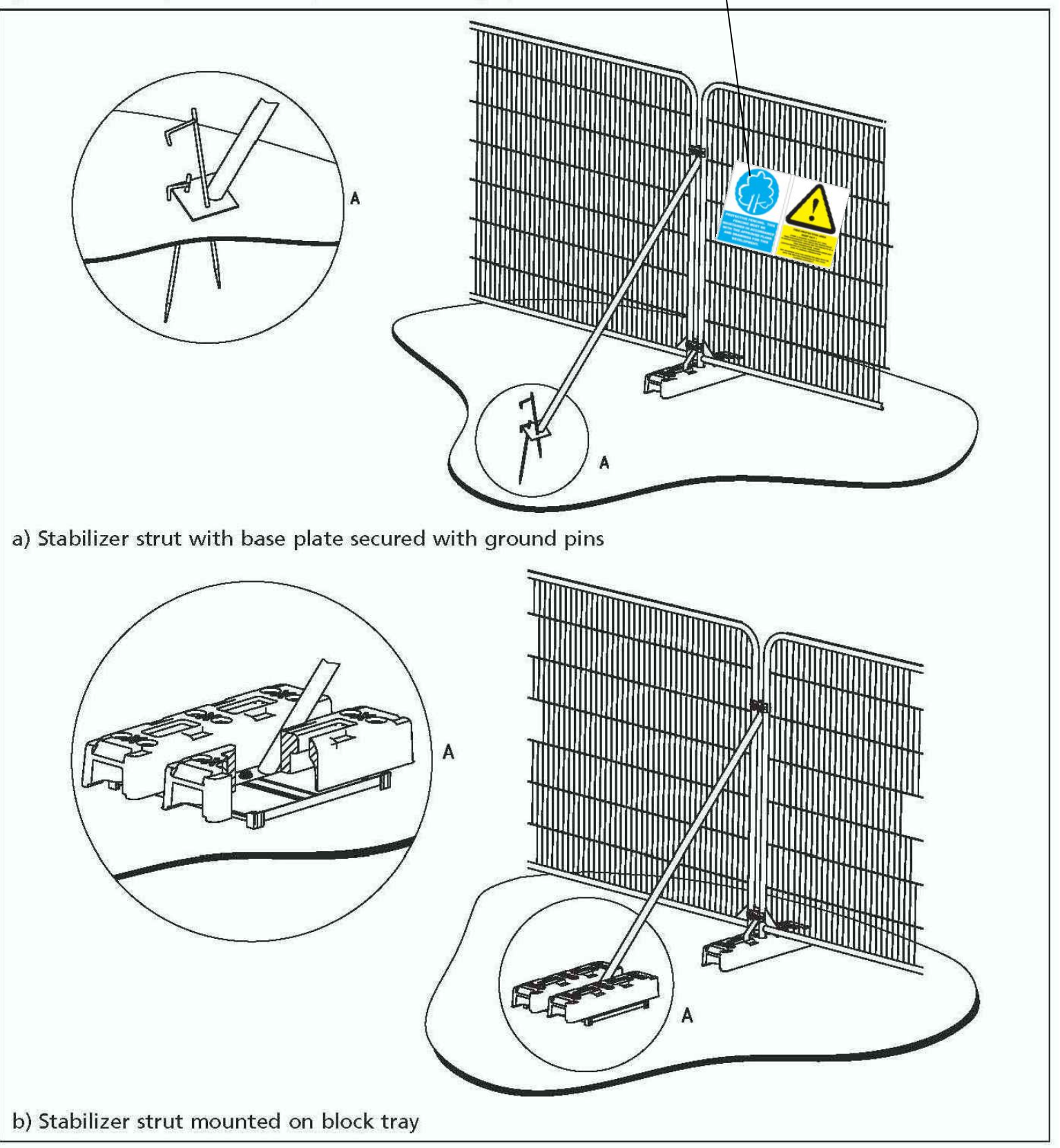


Figure 3 Examples of above-ground stabilizing systems



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