

Tree Constraints Verification Report

Land at Wrexham Road

Rhostyllen

Report Ref: 238/R/100

September 2022

mdlandscape

6 Kinderton Close | High Legh | Knutsford| Cheshire | WA16 6LZ | mdlandscape@btinternet.com | 07710 498231

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Prepared by:
Marianne Dobson CMLI, BA Hons, FdScArb, MArborA
Landscape Architect and Arboricultural Consultant
mdlandscape
6 Kinderton Close
High Legh
Knutsford
Cheshire
WA16 6LZ

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1. INTRODUCTION

1.1 Scope of survey

MDLandscape have been instructed by SG Estates Ltd to conduct a review of the condition of trees on land at Wrexham Road, Rhostyllen, in the context of potential development and a review of the validity of the Arboricultural Implication Study undertaken by ACS Ltd ref 1358/DR.06 in April 2013. Refer to documents: 1358/DR.06 Arboricultural Implication Study; 1358_AL_01-SK_01 Arboricultural Layout Plan sheet one of two; 1358_AL_01-SK_02 Arboricultural Layout Plan sheet two of two; 1358_TP_01-SK_01 Tree protection plan 1; and 1358_TP_01-SK_02 Tree protection plan 2.

The verification report by MDLandscape details the existing tree and hedgerow population and notes changes to site vegetation since reported in 2013, including comments on current tree health and condition and any further recommendations pertinent to the development.

1.2 Survey methodology

The survey was carried out on 12th September 2022 and undertaken in mild weather. Inspection was carried out from ground level by M Dobson FdScArb, MArborA and trees were assessed in accordance with *BS5837:2012 Trees in relation to design, demolition and construction – Recommendations*. Investigation to identify extent of cavities or decay detection was not undertaken, but further investigation may be recommended where appropriate.

The survey method was undertaken as follows:

- A recent topographical survey was available to verify tree locations as shown in Figure 3.0;
- Measurements to record height, stem diameter and crown spread were taken using a clinometer and a calibrated specialist diameter tape; and
- Where access to determine exact location was impeded along the railway embankment to the south and east of the site, the measurements were estimated.

The assessment identifies the trees potentially affected by development and discusses their suitability for retention on site and whether there has been a marked change in the health and condition of trees since 2013. The assessment also identifies trees that are undesirable to retain because of structural or other defects, trees that can be retained with an acceptable level of risk in their current location and the measures that are required to ensure their long-term retention.

The British Standard recognises many additional factors will ultimately determine changes to the site, for example redevelopment or natural physical changes. Information in this report is presented in order to allow an informed judgement to be made on tree retention and removal and should not be interpreted rigidly.

This report is valid for two years from the date of survey.

This report includes the following:

- A schedule of all trees located within, or in close proximity to, the proposed working area and is included in Table 2.0 noting:
    - Tree reference number from the ACS Ltd report and additional vegetation features identified by MDLandscape;
    - Tree protection status or designation;
    - Species type stating full common and latin name where identifiable;
    - Height in metres;
    - Stem diameter at-breast-height (dbh) in millimetres;
    - Crown spread to four cardinal points in metres;
    - Height of crown clearance in metres;
    - Maturity – young, semi-mature, middle age, mature, over mature;
    - Condition – good, fair, poor, veteran;
    - Comments on physiological and structural form, condition, health and significant defects;
    - Tree quality category as detailed in Table 1.0;
    - Management recommendations; and
    - Estimated remaining contribution in years – less than 10, 10-20, 20-40 and over 40.

- An assessment of trees, based on *BS 5837:2012* has been undertaken and trees have been categorised into one of four categories: A, B, C or U and are noted in Table 2.0;
- Locations of the trees are mapped, indicating their category, canopy spread and Root Protection Area (RPA);
- An assessment of arboricultural constraints to current site operations and future proposed development and operations; and
- Advice on the management of trees based on their current condition and location.

2 THE SITE AND SURROUNDINGS

2.1 The site

The survey area is located on land centred on SJ 31674 48626 adjacent to Wrexham Road, Rhostyllen as shown in Figure 1.0. The site is a field used for grazing with hedgerows and trees to the site boundary, with the east and south east boundary formed by a railway cutting.



Figure 1.0 Site location - Contains ordnance survey data OS Maps: (ordnancesurvey.co.uk)

2.2 The surroundings

The site lies to the edge of a residential area to the south west of Wrexham, between Wrexham Road to the north and west, railway line to the east, Colliery Road the west and Glanyrafon Brook to the south. The tree cover is concentrated to the periphery of the assessment area.

2.3 Topography

The topography of the site is flat to gently sloping with localised changes in level to the south west towards Glanyrafon Brook.

3 STATUTORY DESIGNATIONS

3.1 Tree Preservation Orders & Conservation Area Designations

A Tree Preservation Orders (TPO) is in force on an ash tree at the site, reference 2834 in the ACS Ltd survey and noted in the order as TPO 1998, number 23 as T1 Ash (E:331646, N:348702).

A direct enquiry to Wrexham Council on the status of other trees to the site boundary has not been made, however it is recommended that confirmation of TPO status is requested from Wrexham Council, prior to undertaking development and any proposed tree works.

TPO are conferred by Local Planning Authorities (LPA) to protect the amenity value of trees as individuals, in a group of trees or woodland. Unauthorised pruning, lopping, topping, felling, uprooting or wilful damage caused to a tree protected by a TPO is prohibited and may incur an unlimited fine and subject to prosecution. Works to trees protected by a TPO or within a conservation area, must only be carried out with the written consent of the Local

Authority. This may take the form of a successful planning application where the removal of protected trees is clearly stated and agreed in the determination of the application or through a formal application process that requires a six-week notice period. Work must not be carried out within that period without consent. The LPA then has six weeks to decide whether the tree should be made the subject of a TPO. Applicants should contact the LPA if they are in any doubts about the procedures.

3.2 Protected Species

Trees and hedges are a potential habitat for nesting birds and roosting habitat for bats, both of which are protected under the *Wildlife and Countryside Act 1981* (as amended) and certain species under the *Conservation of Species and Habitat Regulations 2010*. This makes it an offence to intentionally or recklessly, damage or destroy an active birds' nest.

Several trees within the survey boundary may be suitable habitat for nesting birds and roosting habitat for bats, therefore all trees should be inspected for the absence or presence of nesting bird activity or presence of bats, before removal or major pruning work is carried out. A qualified Ecologist should be appointed to ensure a preliminary ecological assessment is undertaken.

Planning Considerations

In addition to statutory designations and protection, the planning system also confers importance on trees and woodland in the context of potential development. The Planning Policy Wales document[1] states a number of policies relating to trees and benefits of trees in design, specifically relating to trees, woodlands and hedgerows in paragraphs 6.4.24 to 6.4.27:

6.4.24 Trees, woodlands, copses and hedgerows are of great importance for biodiversity. They are important connecting habitats for resilient ecological networks and make a valuable wider contribution to landscape character, sense of place, air quality, recreation and local climate moderation. They also play a vital role in tackling the climate emergency by locking up carbon, and can provide shade and shelter, a sustainable energy source and building materials. The particular role, siting and design requirements of urban trees in providing health and well-being benefits to communities, now and in the future should be promoted as part of plan making and decision taking.

6.4.25 Planning authorities should protect trees, hedgerows, groups of trees and areas of woodland where they have ecological value, contribute to the character or amenity of a particular locality, or perform a beneficial and identified green infrastructure function. Planning authorities should consider the importance of native woodland and valued trees, and should have regard, where appropriate, to local authority tree strategies or SPG. Permanent removal of woodland should only be permitted where it would achieve significant and clearly defined public benefits. Where woodland or trees are removed as part of a proposed scheme, developers will be expected to provide compensatory planting.

6.4.26 Ancient woodland and semi-natural woodlands and individual ancient, veteran and heritage trees are irreplaceable natural resources, and have significant landscape, biodiversity and cultural value. Such trees and woodlands should be afforded protection from development which would result in their loss or deterioration unless there are significant and clearly defined public benefits; this protection should prevent potentially damaging operations and their unnecessary loss. In the case of a site recorded on the Ancient Woodland Inventory, authorities should consider the advice of NRW. Planning authorities should also have regard to the Ancient Tree Inventory.

[1] Planning Policy Wales, Edition 11, February 2021 Welsh Government Planning Policy Wales - Edition 11 (gov.wales)

6.4.27 The protection and planting of trees and hedgerows should be delivered, where appropriate, through locally specific strategies and policies, through imposing conditions when granting planning permission, and/or by making Tree Preservation Orders (TPOs). They should also be incorporated into Green Infrastructure Assessments and plans.

Tree Felling

When considering felling trees related to development, consents for tree felling may be required under different regimes, even if a planning application is not needed. These regimes include felling licences and Environmental Impact Assessments. The developer is responsible for ensuring that any necessary permissions, consents and permits are in place when required. If tree felling related to development is carried out without the necessary planning permission or felling permission, this may lead to enforcement action.

4 TREE QUALITY CATEGORISATION

Under BS 5837:2012 trees and groups are objectively assigned a quality category designed to quantify their value. Table 1 presents a summary of the categories presented in the British Standard. The full table has been reproduced.

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			Identification 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 • 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.*			See Table 2
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
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)	See Table 2
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 with material conservation or other cultural value	See Table 2
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 150 mm	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 no material conservation or other cultural value	See Table 2

Table 1: Summary of *BS 5837:2012* tree quality categorisation criteria

5 TREE POPULATION AND CONDITION

5.1 Tree species and population

The individual trees surveyed include ash, oak, willow species (sp), lime, silver birch, horse chestnut, sycamore, hawthorn and holly, with hedgerow species including cultivated cypress, privet, hawthorn, wych elm, rose, holly, elder, ash and field maple. An area of woodland to the south east of the site, includes species of beech, alder, elder, hawthorn, willow, oak, silver birch, ash, cherry, wych elm, holly and hazel.

A record of the trees and hedgerow assessed, cross referenced against the ACS Ltd report is included in Table 2.0.

A photographic record of the vegetation features is included in Appendix 2.

5.2 Categorisation and value

Trees within the survey area have been identified within categories B, C and U. Some category C trees are considered to have an estimated remaining contribution of less than ten years.

ACS Ltd tree ref number	Species	Height m	Stem diameter mm	Crown spread m				Height of crown clearance m	Age class	Physiological condition	Structural condition	Preliminary management recommendations and comments on condition	Estimated remaining condition in years	Category Rating
				N	S	E	W							
2834	Ash	20	1500	9	11	9.5	7.5	2	Over mature / early veteran	Poor	Poor	Fungal fruiting bodies present on major scaffold branches; recent branch failures of 100mm dia.; adaptive (new) growth to stem, tree is compensating for loss of branches in crown but is in slow decline; healthy crown with no sign of ash dieback; potential to develop into early veteran; if retained as part of new development a review of the potential target area and targets is required; crown reduction required to allow safe retention in an area of potential public access; consider fencing around the crown spread of the tree; crown clearance lower than previous survey	Under 10 Potentially 10-20 years after intervention and with appropriate ongoing tree management and annual inspections	U Potentially B3 after intervention and with appropriate ongoing tree management and annual inspections
2835	Willow											No longer present		
T1	Willow	8	Over 1000 basal diameter	3	3	2	5.5	2	Middle age	Poor	Poor	Tree to north east on railway verge not previously noted; partially collapsed having been extensively pruned; in poor condition	Under 10	U
2836	Oak	14	700	5.5	5	7	7	1.5	Mature	Fair	Fair	Located on boundary with railway; previous pruning to clear crown from over head wires; condition potentially improved from previous survey with growth to crown spread; tree of moderate quality	20-40	B2
G1	Group: Hawthorn, Holly, elder, oak	Up to 7							Mature	Good	Good	Scattered mature large shrubs/small trees along fence on railway verge with occasional oak under 75mm with potential to develop into larger trees; hawthorn, holly and elder can be pruned if crown extends over boundary; oak saplings may develop into trees with positive contribution; sufficient rooting area within development for future growth; no concerns	20-40	C2
G2	Group: Oak	Up to 15m	Up to 440						Young to early mature	Good	Good	Group of oak either side of 2836 on railway verge; crown extends up to 7.5m west into the site but adjacent to proposed open space; no concerns with regard to potential development impact but tree protection fence to RPA is recommended	20-40	B2
2837	Group: 500mm Silver birch est 800mm lime 830mm sycamore 930mm horse chestnut 850mm Lime 680mm horse chestnut 850mm lime 1030mm sycamore 770mm horse chestnut	Up to 8	Up to 1000	4	6	9.5	8	1.8 (W)	Mature	Poor to Good	Poor to Good	Linear group within church grounds adjacent to stone boundary wall including: Silver birch; lime; sycamore of good form and condition; excessive basal epicormic growth and foliage to lime impeding inspection of stem; sycamores with ivy growth; horse-chestnut have the appearance of lapsed pollards with no apical dominance and excessive upright growth and compression forks with included bark and longitudinal cracks; splits present in bark and potential branch tears are a concern due to excessive weight of branches and weak unions. Horse chestnut to the south of the group may be experiencing root plate movement due to natural bracing in the crown and as evidence by damage to the wall to the south east – All three horse chestnut are considered to be of poor condition and are recommended for removal	Group: 20-40 Silver birch (1), sycamore (2), lime (3) Group: under 10 horse-chestnut (3)	B2 U
2838	Hawthorn	6	Up to 300	6	6	6	6	1.5	Mature	Fair	Fair	Within church grounds; retain	20	C2

ACS Ltd tree ref number	Species	Height m	Stem diameter mm	Crown spread m				Height of crown clearance m	Age class	Physiological condition	Structural condition	Preliminary management recommendations and comments on condition	Estimated remaining condition in years	Category Rating
				N	S	E	W							
2839	Group: Cypress	9	Up to 350	2.5	2.5	2.5	2.5	0.5	Mature	Good	Good	Within church grounds; retain	20	C2
2840	Hawthorn											Not noted as an individual tree; considered to have formed part of boundary hedge		
2841	Sycamore											Not noted as an individual tree now potentially forming part of woodland edge or has been removed		
2842	Group: Hawthorn	7	Up to 350	2.5	2.5	2.5	2.5	0.5	Mature	Fair	Fair	Group of hawthorn considered to be unmanaged remnant hedgerow with gappy base to bank with occasional elder; retain	10-20	C2
G3	Privet	Up to 5m							Mature	Good	Good	Groups of privet to boundary and building of similar height and condition – shrubs		Not applicable
H1	Hawthorn hedge	Up to 2m							Mature – over 30 years	Good	Good	Predominantly hawthorn hedge with bramble; robust hedge, maintained to top and sides		
H2	Hawthorn Holly	Up to 2.5m							Mature – over 30 years	Good	Good	Predominantly hawthorn hedge with occasional holly; robust hedge, maintained to top and sides		
H3	Wych elm Hawthorn Elder	Up to 3m							Mature – over 30 years	Good	Fair	Predominantly elm hedge with occasional hawthorn and elder; leggy base in places due to presence of elm and typical growth; suckering of elm in places with vigorous growth		
H4	Elder Hawthorn Privet Holly	Up to 2m							Mature – over 30 years	Good	Good	Mixed species hedge, predominantly privet, well maintained		
H5	Cypress hedge	Up to 2.5m							Mature	Good	Good	Maintained hedge		
H6	Hawthorn Wych elm Holly Elder Field maple	Up to 2m							Mature – over 30 years	Good	Good	Mixed species hedge, predominantly hawthorn, well maintained, planted on slightly raised bank parallel with roadside footpath		
H7	Privet	Up to 5m							Mature	Good	Good	Individual privet to west and south of fence/wall with larger group of privet to south, rose with scrubby growth to south		
H8	Hawthorn Wych elm Elder Rose Ash saplings	Up to 2m							Mature – over 30 years	Good	Good	Mixed species hedge, predominantly hawthorn, well maintained, planted on slightly raised bank parallel with roadside footpath		
T2	Purple leaved cherry	Up to 8m							Early mature	Good	Good	No access for close inspection as within private garden; crown to south and east extends to face of hedge; appears to have multiple stems arising at or below 2m		
T3	Pine tree	Up to 9m	Est 180	2	2	3	2	1.5	Early mature	Good	Good	No access for close inspection as within private garden; crown does not extend to boundary hedge of garden		

Table 2.0 Tree and hedgerow constraints assessment

6 DEVELOPMENT ASPECTS AND RECOMMENDATIONS

6.1 Habitats

Trees and hedgerows within the survey area will provide foraging habitat for both bats and birds. To minimise disturbance to these species, trees should be retained where possible, with standing dead wood retained where it is not a hazard.

6.2 Site planning and development

Tree root systems will increase incrementally with age and it is good practice to leave a larger area around a tree to allow for future root growth. Whether developing in the vicinity of existing trees or planning locations for new trees on development sites, consideration should be given to the potential rooting area relevant to the tree species.

Sufficient soil or growing media and physical space should be assigned to ensure continued thriving or successful tree establishment.

Since the ACS Ltd report was undertaken in 2013, there has been some change to the vegetation features on site as noted in Table 2.0.

6.2.1 Ash tree 2834

The ash tree 2834 appears to be of reasonable vigour with full crown and healthy leaf growth and limited signs of dieback, however recent branch failures were noted and fungal fruiting bodies to scaffold branches as noted in 2013 still flourish. The tree has put on adaptive growth and the stem diameter has increased from 1370mm dbh to 1500mm dbh over the last ten years, however the extent of decay remains uncertain and decay detection was not undertaken at the time of the assessment. It cannot be discounted that decay to the stem has continued and become more extensive and that the adaptive growth to the stem has occurred as a response to decay. There is raised ground to the base of the north side of the tree and included bark to the root flare. It is considered that the ash is in a state of decline. At present failure of parts of the tree or failure of the tree as a whole presents a moderate hazard within the field environment with a moderate risk of damage or injury.

A survey using decay detection equipment may offer a better indication of the extent of decay within the tree and allow an informed decision to be made about the viable long-term retention of the ash.

However it should be noted that changes to the environment around the tree as a result of development and introduction of public access, could increase the potential risk to high and therefore present an unacceptable level of risk. As recommended in the ACS Ltd report, extensive crown reduction would be required to bring the tree within an acceptable level of safety if it were to be retained. Furthermore, it is recommended that permanent access within the crown spread of the tree as a minimum, is excluded if the tree is retained within an area of new development.

A long term management strategy for the ash tree is recommended if it is to be retained, and this should include provision for an annual inspection by an arboricultural consultant.

6.2.2 Goat willow T1 and groups G1 and G2

A goat willow to the north east site boundary (T1) has previously failed and should be removed prior to development due to the potential for long term maintenance issues.

Trees and large shrubs to the east and south east boundary with the railway have matured and while it is not anticipated that these features will have an impact on development, it is recommended that tree protection fencing be installed to the RPA of the oak 2836 and two groups of adjacent oaks, G1 and G2.

6.2.3 Group 2837

A linear group of nine trees to the church yard on church land, ref 2837, include a silver birch, three lime, two sycamore and three horse chestnut. The majority of the trees are of good form and condition, however as noted in Table 2.0, the three horse chestnut are considered to have declined in form and condition since the ACS Ltd survey in 2013. It is possible that the horse chestnut have suffered from drought stress more than neighbouring trees during summer 2022 and that this has exacerbated a decline in condition. At present, due to limited public access and shelter gained from adjacent trees, the horse chestnut are considered to present a low to moderate risk of failure. Similar to the recommendations for the ash tree 2834, it should be noted that changes to the environment around the tree as a result of development and introduction of public access, could increase the potential risk to high. Retention of the horse chestnut may therefore be unacceptable, certainly due to the future use of this space as private gardens. It is therefore recommended that the adjacent landowner, for Holy Trinity Church, be contacted at an appropriate time prior to development, to discuss strategies for future tree management and retention and that removal of the three horse chestnut is discussed. The RPA identified on drawing 1358_AL_01-SK_02 from the

ACS Ltd report of 2013, still represents an acceptable distance of protection from temporary and permanent development for the remaining trees in this group.

It is noted that the group 2837, has low crown clearance of 1.8m and that this may present an unacceptable maintenance issue where the crown overhangs private gardens in the future. Crown raising may be an acceptable management proposal, but should be discussed with the adjacent landowner, prior to any works being carried out. Removal of scaffold branches should be avoided. Pruning should be undertaken in accordance with BS3998:2010 Tree work – Recommendations, to ensure the diameter of pruning cuts do not exceed one-third of that of the parent branch or stem, with the number of cuts kept to a minimum.

It is not recommended to prune lime trees, as this can stimulate and perpetuate additional leaf and branch growth and result in increased maintenance requirements. Any pruning works should kept to a minimum.

6.2.4 Consents and permissions for additional tree works

Any tree pruning and removal works that have not previously been discussed and agreed with the Local Planning Authority (LPA) as part of a formal planning consent, may require approval and the LPA Planning Officer and Tree Officer, as well as the landowner, should be consulted and appropriate permissions and consents obtained before any tree works are undertaken.

For the remainder of the trees and hedgerows at the site, the proposed housing layout and protection methods as detailed in the report and drawings by ACS Ltd allows for safe retention of trees and hedgerow with adequate space for future root growth and crown development. Refer to documents: 1358/DR.06 Arboricultural Implication Study; 1358_AL_01-SK_01 Arboricultural Layout Plan sheet one of two; 1358_AL_01-SK_02 Arboricultural Layout Plan sheet two of two; 1358_TP_01-SK_01 Tree protection plan 1; and 1358_TP_01-SK_02 Tree protection plan 2.

The recommendations put forward in the report by ACS Ltd 2013 are still valid and despite the introduction of new tree protection products into the market place, the 3D cellular confinement system and no dig approach to installation, still represents best practice, when installing hard surface treatments in the vicinity of trees and within RPA. However, avoiding changes in level within the RPA of trees, should be the preferred approach when incorporating trees within development sites.

6.3 Ongoing management and reinspection

Trees are dynamic organisms that are influenced by natural and man-made changes to the environment around them. It is recommended that trees are inspected at least every two years, particularly after storms or other extreme weather events and for development of potential hazards, or changes to known defects. Inspections of all retained trees should be undertaken by a qualified Arboriculturist and records of inspection held at the site or with the landowner.

7 SUMMARY

- The trees recorded in the survey area were generally found to be in a fair condition.

- The trees within the site have moderate value in the landscape. The trees and hedgerows to the site boundary provide links to wider green infrastructure and habitats.

- Based on an objective assessment made in accordance with *BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations*, the trees surveyed were valued as category B, C and U individuals.

- The tree categorisation method identifies the quality and value of the existing tree stock. It is not meant to be interpreted rigidly but is presented to form a balanced judgement on tree retention and removal.

- Tree locations, tree protection status, their quality categories and RPA are illustrated on the ACS Ltd drawings and still applicable as a guide to the most likely position of tree roots necessary for the successful retention of trees, however it is noted that the rooting extent is likely to be affected by existing walls and hard surfacing. Incursion into the RPA by development activities may reduce the chance of healthy tree survival.

- Tree root systems will increase incrementally with age and it is good practice to leave a larger area around a tree to allow for future root growth. When developing in the vicinity of existing trees and establishing new trees on development sites, consideration should be given to the potential rooting area in any site planning and design.

- Individual recommendations for tree management have been given for the ash 2834 and three horse chestnut within group 2837. These recommendations should be discussed with the LPA Planning Officer and Tree Officer and land owner, to discuss and agree tree works.

- Additional permission and consent from the LPA and landowner is likely to be required for any tree pruning and removal not covered by an existing planning consent.

- The recommendations put forward in the report by ACS Ltd 2013 are still valid. Refer to documents: 1358/DR.06 Arboricultural Implication Study; 1358_AL_01-SK_01 Arboricultural Layout Plan sheet one of two; 1358_AL_01-SK_02 Arboricultural Layout Plan sheet two of two; 1358_TP_01-SK_01 Tree protection plan 1; and 1358_TP_01-SK_02 Tree protection plan 2.

APPENDIX 1 – PHOTOGRAPHIC RECORD



Privet hedge H4 with T2 purple leaf cherry and T3 pine in garden



Mixed native species hedge to Wrexham Road H6



Conifer hedge H5 to third party land



Ash 2834 and H6

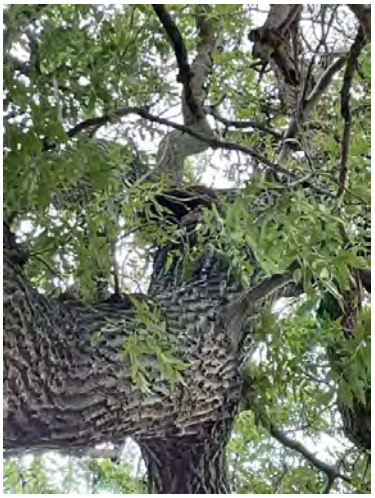


Ash 2834 and plates showing decay and fungal fruiting bodies













Privet G3



Privet G3



Privet hedge H7 to third party property



Scattered young trees and hawthorn to railway group G1







Group G1



Oak 2836



Group G2



Group G1















Linear group of hawthorn 2842



Hawthorn 2838



Linear group to church yard 2837 and with two following plates taken from within the church yard





with following plates showing individual trees

















The following plates show the wall condition adjacent to each tree















Most southerly horse chestnut and wall damage



Conifer (cypress) group 2839 with H3 to left (west)



Hedge H2

The following plates show the woodland edge to the south – not surveyed





Land at Wrexham Road, Rhostyllen













APPENDIX 2 - GLOSSARY OF TERMS

Maturity
Newly planted - Not fully established and capable of being transplanted or easily replaced
Young - Establishing, usually with good vigour, still capable of being transplanted or replaced
Early mature - Established, usually vigorous and increasing in height
Semi-mature – Established with an overall height in excess of 4 metres and or a stem girth measurement (circumference) of 20 centimetres or larger;
Middle Age - Trees in the established growth stage of their life with the potential to continue increasing in size;
Mature - Trees that have reached their ultimate size, given their location and surroundings;
Over-mature - Fully mature, in last quarter of life expectancy, vigour decreasing

Condition
Good, Fair, Poor. An overall assessment of a tree's physiological and structural state.

Veteran
Trees that have biological, cultural or aesthetic value due to age and / or condition. Typically trees that may be living beyond their expected age range for their species.

BS 5837 Tree Quality Assessment
The tree quality assessment is based on four categories (A, B, C and U) are used to denote tree quality (A= High, B = Moderate, C = Low, U= Unsuitable for retention).
Subcategories (1-3) denote the specific function value of the trees and the reasoning behind the allocation of a specific category.

Root Protection Area (RPA)
The theoretical rooting area of a tree as defined in *BS5837: 2012* . RPA is allocated to ensure that a sufficient area is left undisturbed during development. It is provided as an area (m^2) and as the radius of a circle (m) typically plotted from the centre of the stem.

Estimated Remaining Contribution
The approximate life expectancy as healthy functioning tree and relates to species and the condition of the tree at the time of survey.
Long > 40 years
Medium 20 – 40 years
Short – Medium 10- 20 years
Short - Imminent removal <10years

Adventitious or Epicormic shoots
Small branches that grow in clusters around the stem or base of a tree in an uncharacteristic fashion for a normally healthy tree, usually at the site of pruning wounds or as an indicator of stress.

Bifurcate
Divided into two branches or forks.

Buckling
Deformation of a structure subjected to a bending load Buttress zone, irreversible.

Chalara – Ash dieback
Chalara dieback of ash, also known as Chalara or ash dieback, is a disease of ash trees caused by a fungus called *Hymenoscyphus fraxineus*

Decurrent
The tree crown is borne on several major wide spreading limbs of similar size

Defect
A feature which detracts from the uniform distribution of mechanical stress, or which makes the tree mechanically unsuited to its environment.

Dieback
A condition in which a tree or shrub begins to die from the tip of its leaves or roots backwards, owing to disease or an unfavourable environment

Disease
A malfunction or destruction of tissues usually caused by pathogens.

Dominance
The tendency for a leading shoot to grow faster than the lateral shoots; also a tree that maintains a taller crown than its neighbours.
Excurrent
A well-defined central main stem to the crown, bearing branches which are limited in their length, diameter and secondary branching.
Flush-cut
A pruning cut which removes part of the branch bark ridge and or branch-collar.
Girdling root
A root which circles and constricts the stem.
Hazard beam
An upward curving part of a tree in which strong internal stresses may occur without being reduced by adaptive growth; prone to longitudinal splitting or may form a banana shaped crack.
Included bark (ingrown bark)
Bark of adjacent parts of a tree (usually forks, acutely joined branches or basal flutes) which is in face-to-face contact.
Infection
The establishment of a parasitic micro-organism in the tissues of a tree or other organism.
Lopping
Removal of large branches from a tree that does not follow natural target pruning practices
Natural target pruning
The siting of pruning cuts at the branch bark ridge with a cut of minimal surface area to allow quicker healing of the wound
Occlusion
The process of continual radial growth and healing of a wound which is progressively closed by the formation of new wood and bark around it.
Plant pathogen
Infectious organism that causes a disease on a plant. Although relatives of some plant pathogens are human or animal pathogens, most plant pathogens only harm plants. Plants are rarely cured of disease once infected.
Pollarding
The removal of the tree canopy, back to the stem or primary branches. The management regime is usually repeated as part of a regular management programme.
Primary branch
A major branch, of greater order than secondary branches.
Pruning
The removal or cutting back of lesser branches or twigs
Reactive Growth/Reaction Wood
Production of woody tissue in response to mechanical stresses
Root-collar
The transitional area between the stem/s and roots prior to development of a root flare or buttress.
Secondary branch
A branch, of lower order than primary branch.
Veteran tree
An aged old specimen that has features which increase its value as habitat for wildlife (dead wood, cavities etc.) irrespective of its chronological age and that is of interest biologically, culturally or aesthetically because of its age, size or condition, is usually of advanced age
Windthrow
The fall of a tree in high wind, blowing over of a tree at its roots.
Wound wood
Wood developing in response to a wound which gradually heals and occludes the wound.

FIGURES – TREE CONSTRAINTS PLANS 238-T-100, 101, 102

north

Notes

1. Dimensions are given in metres and millimetres as stated on the drawing.
2. Drawing must be reproduced in colour.

Legend

KEY

Trees categorised in accordance with BS5837:2012 Trees in relation to design, demolition and construction : Recommendations
This drawing must be reproduced in colour

- CATEGORY A - high quality
- CATEGORY B - moderate quality
- CATEGORY C - low quality
- CATEGORY U - unsuitable for retention
- HEDGE - CANOPY EXTENTS
- ROOT PROTECTION AREA (RPA)
- T, G, H — REFERENCE tree, group, woodland, hedge

H8
H8
H8
H7
H6
G3
T1-U
G1-C2
G1-C2
2836-B2
G2-B2
G1-C2

Tree Constraints Plan

0 10 20 30 40 50

SCALE 1:500 (A1)
SCALE 1:1000 (A3)
METRES

Project	WREXHAM ROAD, RHOSTYLLEN	Dwg No	238/T/100				
Title	TREE CONSTRAINTS PLAN SHEET ONE OF THREE	Scale	1:500 @ A1 / 1:1000 @ A3	Date	13/09/2022	Drawn	MD

Revision	Date	Reason	Initials
P01	13/09/2022	FOR INFORMATION	MD

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north

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- T, G, H REFERENCE tree, group, woodland, hedge

H6
H7
G3
H6
2834-U (TPO)
H6
H5
T3 not surveyed
T2 not surveyed
H4
not surveyed
copper beech
beech
lime
2837-B2
2837-C2
G1-C2
Wrexham Road

Tree Constraints Plan

0 10 20 30 40 50 METRES

SCALE 1:500 (A1)
SCALE 1:1000 (A3)

Project	WREXHAM ROAD, RHOSTYLLEN	Dwg No	238/T/101				
Title	TREE CONSTRAINTS PLAN SHEET TWO OF THREE	Scale	1:500 @ A1 / 1:1000 @ A3	Date	13/09/2022	Drawn	MD

Revision	Date	Reason	Initials
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north

Legend

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H5
T3 not surveyed
T2 not surveyed
H4
not surveyed
copper beech
beech
lime
2837-B2
2837-C2
H3
2839-C2
ash under 75mm dbh
2838-C2
H2
H1
H1
2842-C2
G1-C2
2842-C2
2840-C2
2841-C2

Tree Constraints Plan

0 10 20 30 40 50 METRES
SCALE 1:500 (A1)
SCALE 1:1000 (A3)

Project	WREXHAM ROAD, RHOSTYLLEN	Dwg No	238/T/102				
Title	TREE CONSTRAINTS PLAN SHEET THREE OF THREE	Scale	1:500 @ A1 / 1:1000 @ A3	Date	13/09/2022	Drawn	MD

Revision	Date	Reason	Initials
P01	13/09/2022	FOR INFORMATION	MD

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