Frodsham Solar
Arboricultural Assessment

May 2025

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Frodsham Solar – BS 5837: 2012 Arboricultural Report and Impact Assessment

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Executive Summary

On behalf of Axis PED Ltd (the Client), Cura Terra Land and Nature Limited (CTLN) has carried out a tree survey to BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations in February 2025 at on land at Frodsham Marsh, Frodsham, Cheshire. This survey has formed the basis for an assessment of the impacts that development proposals may have on the existing tree cover and recommends methodologies that will need to be adopted to protect retained trees during development.

The survey recorded all significant trees within the site and those which may be affected by any development proposed within the site boundary, recording several parameters including species, crown spread and Root Protection Area (RPA). Established trees along the main site access from Pool Lane and Grinsome Road were not surveyed as they do not present a constraint to the development proposal.

The RPA of any given tree is calculated in accordance with BS 5837:2012 and is generally a circular plot centred on its stem. This area around each tree should not be disturbed by excavation, compaction, contamination or other related demolition and construction activities. Minor encroachment into the RPA may be possible if specific methodologies are put in place that reduce the likelihood of the tree being negatively impacted.

The survey recorded 54 individual trees, 48 tree groups, 6 areas and 32 hedgerows. The survey area covered 5.8 kilometres from Frodsham Wind Farm in the southwest of the site to Frodsham Substation on the northeast bank of the River Weaver and covered several different land uses including unmanaged marshland, grassland, agricultural and arable land and disused grounds surrounding Frodsham Substation. Species were predominantly mixed native of general good quality although unmanaged and overgrown.

Access to Cheshire West and Chester Council public map viewer confirmed that no trees within the site boundary are protected by a Tree Preservation Order (TPO) and the site is not located within a Conservation Area.

An online search using the Multi Agency Geographical Information for the Countryside (MAGIC) website for statutory conservation sites was undertaken (where appropriate) to determine the presence of Ancient Woodland within 15.0 m of the site boundary. This revealed that no ancient woodland was present within a 15.0 m buffer of the site.

The Proposed Development comprises a new ground-mounted solar energy generating station and an associated Battery Energy Storage System (BESS). The Proposed Development includes

underground cabling and the infrastructure required for connection to the local electricity distribution network, as well as a private wire electricity connection. The main site access would be routed from the west via the Pool Lane roundabout and would utilise the access tracks used for the Frodsham Wind Farm. An existing access would be utilised for access to the SPEN / National Grid Frodsham Substation. A Non-Breeding Bird Mitigation Area (NBBMA) and Skylark Mitigation Area are also proposed.

This will require the removal of two tree groups, one area and sections from a further two tree groups and one area along with removal of small sections of 17 hedgerows, and may also have an impact on the roots, stems and canopies of retained trees unless suitable protection measures are put in place. Proposed overhead line infrastructure to the Frodsham solar substation and into the SPEN/NG substation area on the northeastern side of the River Weaver, cross areas of trees which could require further tree loss to facilitate the installation of Trident poles, the locations of which will be decided through detailed design.

This report details the potential arboricultural impacts of development at the site and offers a range of protection measures and construction methodologies which should be adopted. These measures aim to prevent accidental damage and other adverse effects on the health of retained trees.

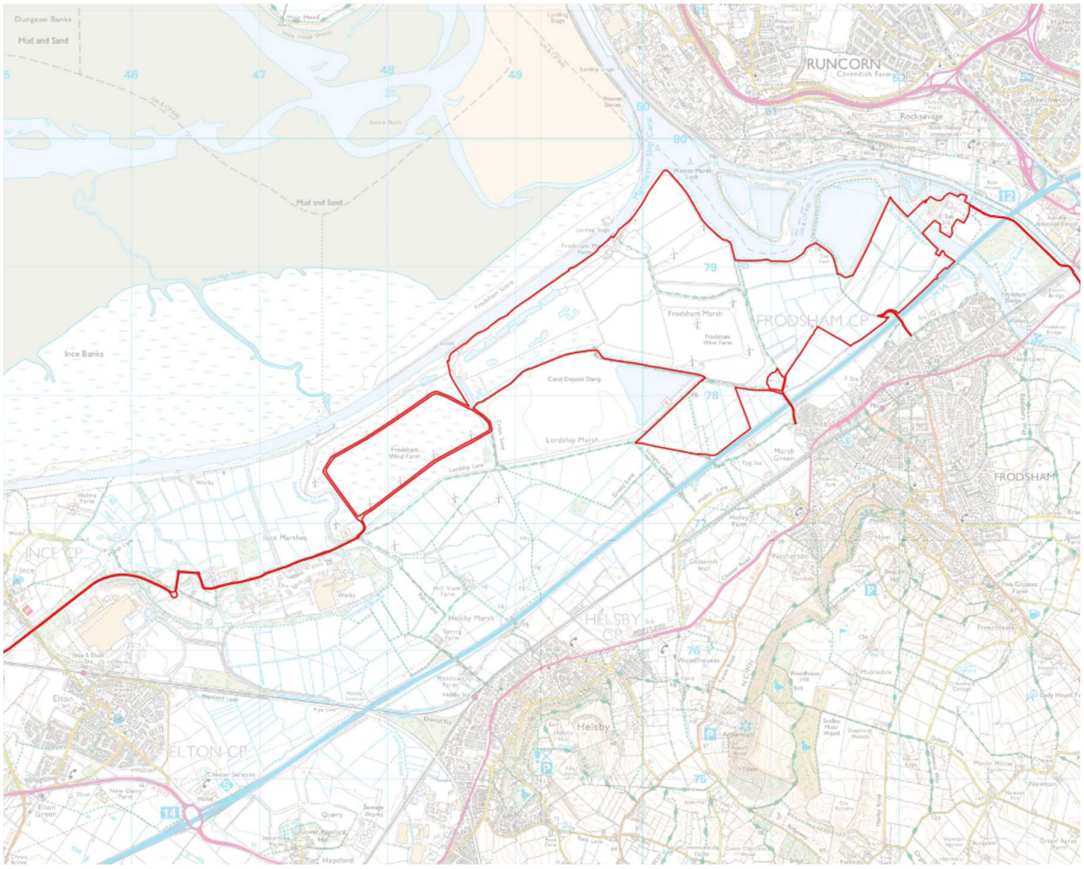
The report also makes recommendations for any measures to mitigate or compensate for the loss of trees within the site and the likely impact on the site and the wider local landscape.

1. Introduction

1.1 Location

1.1.1 Cura Terrae Land and Nature Limited has been commissioned by the Client to undertake a tree survey of the site at Frodsham Marsh, Frodsham, Cheshire, WA6 7BQ, Ordnance Survey UK Grid Reference SJ 50165 78824, and prepare the findings in a report. The site location is shown in Figure 2.

Figure 1: Location Map



1.3 Tree Designations

1.3.1 The information available on the Cheshire West and Chester Council website (https://www.cheshirewestandchester.gov.uk/) has confirmed that the site is not located within a conservation area and no trees included in the survey are protected by a TPO.

1.3.6 The permission of the local planning authority must be sought before any works are carried out to protected trees. Potentially unlimited fines can be imposed for illegally carrying out any works to protected trees.

1.3.7 Reference to the Multi Agency Geographical Information for the Countryside (MAGIC) website indicates that no ancient woodland is present within a 15.0 m buffer of the site.

1.4 Protected Species

Bats

1.4.1 Mature trees can often contain cavities or hollows which provide potential roosting locations for bats. Bats and the places they use for shelter or protection (i.e. roosts) are protected under *The Conservation of Habitats and Species Regulations 2017* (Habitats Regulations 2017). They also receive legal protection under the *Wildlife and Countryside Act* (WCA) 1981. Consequently, causing damage to a bat roost constitutes an offence.

1.4.2 Generally, should the presence of a bat roost be suspected whilst completing works on any trees on site then an appropriately licensed bat worker should be consulted for advice.

Birds

1.4.3 Trees and hedgerows can provide habitat for nesting birds which are protected under the *Wildlife and Countryside Act* (WCA) 1981. Some species are further protected by special penalties. This legislation makes it an offence to intentionally or recklessly damage or destroy an active bird nest or part thereof.

1.4.4 As the trees at the site provide potential habitat for nesting birds all tree work should ideally be completed outside the peak nesting bird season (Generally March to August inclusive).

1.4.5 If this is not possible then the vegetation should be subject to a nesting bird inspection by a suitably experienced ecologist prior to commencement of works. If active nests are identified then the vegetation, and a defined buffer zone, will need to remain in place until the young have fully fledged.

2. Tree Survey Methodology

2.1 Site survey

2.1.1 CTLN have undertaken the tree survey in accordance with BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*, to provide detailed and independent arboricultural advice in the context of potential development. The survey was a ground based visual inspection carried out by a suitably qualified arboriculturist. No trees were tagged as part of the survey.

2.1.2 The tree inspection was carried out in February 2025 by Andrew Bagshaw Principal Arboricultural Consultant, when the deciduous trees were generally not in leaf.

2.1.3 The weather on the day of the survey was overcast and dry. This allowed for a thorough inspection of all trees included in the survey.

2.1.4 The survey recorded all trees with a stem diameter of 75 mm or more at a height of 1.5 m above ground level within the site boundary. Any significant trees outside the boundary which could be significantly affected by the future development of the site were also recorded.

The following characteristics were recorded:

- Species
- Stem diameter at 1.5 m above ground level (mm)
- Estimated height (m)
- Approximate crown spread (m) in North, East, South and West directions
- Estimate of the number of years that the tree is likely to remain suitable for retention
- Age class
- Condition category in accordance with BS 5837:2012. The categories are defined as:
    - 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

- Category A = Trees of high quality with an estimated remaining life expectancy of at least 40 years
- Category B = Trees of moderate quality with an estimated remaining life expectancy of at least 20 years
- 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

- Value subcategories where appropriate in accordance with BS 5837:2012. These are defined as:
  - 1 = Mainly arboricultural qualities
  - 2 = Mainly landscape qualities
  - 3 = Mainly cultural values, including conservation
- General notes about physiological and structural condition and any management recommendations

2.1.5 All survey data has been based on a topographical survey where possible, supplied by the client. Where topographical information has not identified tree positions Ordnance Survey mapping has been utilised, trees and hedgerows have been positioned using GPS and aerial photography to provide approximate locations in relation to existing surrounding features. Further confirmation of tree locations through a topographical survey of the site is recommended to ensure future design accuracy.

2.1.6 Some measurements for trees with limited accessibility may have been estimated. This is highlighted with a hash (#) symbol in the Tree Survey Schedule at Appendix 1.

2.1.7 Where trees formed a contiguous canopy they may have been grouped, in line with the guidance of BS 5837:2012. If densely wooded areas are not expected to be directly affected by development proposals only the significant trees at the woodland perimeter will have been surveyed.

2.1.8 Trees are living organisms that change over time. A re-survey of all trees should be carried out if there have been any significant storm events or more than 12 months have passed since the survey was carried out.

2.2 Calculation of Root Protection Area (RPA)

2.2.1 The Root Protection Area (RPA) is calculated according to the formulae set out in BS 5837:2012. This is a layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure should be treated as a priority.

2.2.2 Due to the specific topography of the site and the presence of surrounding structures the RPA is likely to be a simplified representation of the actual morphology and disposition of tree roots. Any deviation in the shape of the RPA from the calculated circular shape will largely be based on conjecture and so should generally be avoided.

3. Tree Survey Results

3.1 General Site Description

3.1.1 The Site includes several fields separated by ditches, watercourses, hedgerows and tree lines. The fields primarily comprise grassland and arable land, some of the grassland fields are grazed. Also present are areas of reedbeds, scrub, broadleaved woodland, ponds, tracks and roads. The site borders the River Weaver to the north and east, Manchester Ship Canal to the north, Ince industrial estate to the west and the M56 motorway with the town of Frodsham beyond to the southeast.

3.1.2 Trees were interspersed across the site within several localised areas predominantly close to the boundaries, both within the site and on neighbouring land. The landscape character altered from the southwest to the northeast from open agricultural land with occasional broadleaf trees and groups to more enclosed narrow fields bordered by established hawthorn hedgerow towards the northeast and the River Weaver. The substation to the northeast of the R. Weaver was surrounded by mature landscape plantings.

3.1.3 Several public access bridleway and footpaths crossed the site and followed the river and Manchester Ship Canal. Previous landscaping with steep east facing embankments (cells of the former MSC dredging deposit grounds, flood defences and structures associated with the M56) are prominent within the immediate landscape.

3.2 Results of Tree Survey

3.2.1 The Tree Survey Schedule at Appendix 1 details the results of the tree survey and includes any management recommendations. The schedule should be read in conjunction with the tree plans at Appendix 3 which show the location of each tree, group and hedgerow surveyed and the extent of their canopies and RPA.

3.2.2 54 individual trees, 46 tree groups, 6 areas and 31 hedgerows have been recorded during the survey. A summary of the tree survey findings is shown in Table 1.

Table 1: Summary of Tree Survey Findings

Category A	Category B	Category C	Category U
Trees: 1 Groups: 2 Areas: 1	Trees: 18 Groups: 33 Areas: 0	Trees: 29 Groups: 13 Areas: 5	Trees: 6 Groups: 0 Woodlands: 0

Hedgerows: 0	Hedgerows: 27	Hedgerows: 5	Hedgerows: 0

3.2.3 The most significant trees were the mixed species groups within area (A091) and (G085) along with groups (G107), (G108), (G067) and (G068). These groups all contained maturing species which were, visually prominent trees, with good arboricultural value. They had good future prospects and will add significant value to any new development.

3.2.5 The predominant vegetation across the site consisted mainly of natural colonisation of hawthorn, elder and willow within the southwest and central areas. The eastern end of the site was of a slightly more sheltered nature and consisted of more closely spaced specimens either of landscape planting origin or a network of dense field boundary hedgerow.

3.2.6 Many of the trees were of low value, retention category C. However, these trees provide some moderate collective amenity value. Large scale tree removals should be avoided where trees are not in conflict with design proposals.

3.2.7 Some ground areas around the individual field boundary trees had been significantly compacted and had suffered from soil erosion. This is likely to be the result of cattle grazing in this area and may have had a detrimental long-term impact on tree roots.

3.2.8 The trees T042, T043, T047, T048, T052 and T088 have been categorised as retention category U. Due to the low occupancy of the area and subsequent low risk posed by these trees they could be retained in the current site context. In these circumstances category U trees can be retained for the short-term amenity and ecosystem service benefits that they provide.

3.3 Ash Die Back (Hymenoscyphus fraxineus)

3.3.1 Ash Die Back (ADB) also known as Chalara or Chalara Dieback of Ash, is a disease of ash trees caused by a fungus called *Hymenoscyphus fraxineus*. ADB causes leaf loss, crown dieback and bark lesions in affected trees. Once a tree is infected the disease is usually fatal, either directly or indirectly by weakening the tree to the point where it succumbs more readily to attacks by other pests or pathogens.

3.3.2 It is difficult to assign ash trees a retention category using the BS5837:2012 standards because of ADB. The general advice from public bodies is to retain ash trees and see how the disease develops within the local population. However, if clear signs of ADB are found on sites, it is highly likely that all the ash trees on that site will succumb in time. It could therefore be unreasonable to consider an ash tree a significant constraint to development.

3.3.3 The Tree Council has produced a document giving guidance to tree owners and managers on how to deal with ADB. Ash dieback: an Action Plan Toolkit (Summer 2019). This gives guidance on assessing the danger posed by trees infected with ADB. CTLN have adopted the Suffolk County Council Ash Health Assessment System (Appendix 4). The system categorises ash trees with ADB symptoms into 4 classes:

- Ash Health Class (AHC) 1 – 100% - 75% Live Canopy (Vitality Class 0)
- Ash Health Class (AHC) 2 – 75% - 50% Live Canopy (Vitality Class 1)
- Ash Health Class (AHC) 3 – 50% - 25% Live Canopy (Vitality Class 2)
- Ash Health Class (AHC) 4 – 25% - 0% Live Canopy (Vitality Class 3)

3.3.4 Many local authorities have concluded that any trees which fall within AHC 3 and 4 require management and it seems reasonable to follow a similar system. The priority of that management depends on the severity of the tree's condition, with trees declining from AHC 2 into AHC 3 requiring work as part of a program of regular works. As the trees decline towards AHC 4, action becomes more urgent to abate any hazard, assuming the tree is in a high-risk area. Ash was not a prolific species across the site.

[1] https://treecouncil.org.uk/wp-content/uploads/2019/11/Tree-Council-Ash-Dieback-Toolkit-2.0.pdf

4. Arboricultural Impact Assessment (AIA)

4.1 Introduction

4.1.1 A BS 5837:2012 Arboricultural Impact Assessment (AIA) has been carried out for all trees included in the survey. The AIA methodology evaluates the potential direct and indirect impacts the proposed development could have on the trees at the site. Where necessary mitigation measures are recommended.

4.1.2 BS 5837:2012 paragraph 5.4.2 states:

> *"The assessment should take account of the effects of any tree loss required to implement the design, and any potentially damaging activities proposed in the vicinity of retained trees. Such activities might include the removal of existing structures and hard surfacing, the installation of new hard surfacing, the installation of services, and the location and dimensions of all proposed excavations or changes in ground level, including any that might arise from the implementation of the recommended mitigation measures. In addition to the impact of the permanent works, account should be taken of the buildability of the scheme in terms of access, adequate working space and provision for the storage of materials, including topsoil."*

4.2 Development Proposals

4.2.1 The Proposed Development comprises a new ground-mounted solar energy generating station and an associated Battery Energy Storage System (BESS). The Proposed Development includes underground cabling and the infrastructure required for connection to the local electricity distribution network, as well as a private wire electricity connection. The main site access would be routed from the west via the Pool Lane roundabout and would utilise the access tracks used for the Frodsham Wind Farm. An existing access would be utilised for access to the SPEN / National Grid Frodsham Substation. A Non-Breeding Bird Mitigation Area (NBBMA) and Skylark Mitigation Area are also proposed.

4.2.2 This AIA is based on the development layout provided by the Client (ref: (Axis) Indicative Operational Site Layout Figure 2.2 dated February 2025).

4.3 Tree Retention and Removal

4.3.1 The development proposals indicate that two tree groups (G034 and G069), one area (A106), sections from a further two tree groups (G067 and G099) and one area (A090) along with removal of small sections of 17 hedgerows (H003, H006, H007, H012, H013, H014, H015, H016, H018, H019, H022, H024, H026, T028, T029, H030 (2x sections) and H032) within the

site boundary will need to be removed to facilitate the new development, as they are situated in the footprint of new structures or their retention and protection throughout the development is not suitable.

4.3.2 The tree groups that need to be removed along with the sections of groups G067, G099, area A090 and the sections of hedgerow are detailed in the Tree Survey Schedule at Appendix 1 and located on the Tree Impacts Plan at Appendix 2. A summary of the required tree removals is shown in Table 2.

Table 2: Summary of Required Tree Removals

Trees to be Removed			Trees to be Retained		
Category A	**Category B**	**Category C**	**Category A**	**Category B**	**Category C**
Trees: 0	Trees: 0	Trees: 0	Trees: 1	Trees: 18	Trees: 29
Groups: 1	Groups: 0 Small sections of 2x groups	Groups: 1	Groups: 1	Groups: 33	Groups: 12
Areas: 0	Areas: 0	Area: 1 Section of 1x further area	Areas: 1	Areas: 0	Areas: 4
Hedgerows: 0	Hedgerows: 0 Small sections of 15x hedgerows	Hedgerows: 0 Small sections of 2x hedgerows	Hedgerows: 0	Hedgerows: 27	Hedgerows: 5
Total: 1	**Total: 0**	**Total: 2**	**Total: 3**	**Total: 78**	**Total: 50**

4.3.3 Removal of High Value 'A' category group G034 is required to facilitate the creation of a bird mitigation area required to enhance the value of the land for use by birds of the Mersey Estuary SPA and SSSI.

4.3.4 Due to the general low value of the trees to be removed the removals will have only a negligible negative arboricultural impact. The minor tree loss can be mitigated through the planting of suitable species. New planting across the site includes the following approximate areas of tree and hedgerow planting:
3.6 km of new native hedgerows and 4.7km of tree and shrub belts.
6.4 km of enhancement of existing hedgerow and hedges with native tree species.
2.2 ha of native woodland and shrub planting.

4.3.5 The development proposals have allowed space for the planting of replacement trees throughout the site once the development is complete. The planting of diverse tree species that are in keeping with the surrounding landscape character and tolerant of climate change can mitigate for the required removals and, in the longer term, increase the amenity value and ecosystem service benefits that the site's trees provide.

4.4 Tree Pruning

4.4.1 The pruning of trees should only be undertaken where essential, to prevent open wounds that can lead to bacterial or fungal infection. Pruning works should generally be undertaken during the winter months when the tree is dormant or during the summer months when the tree is fully active.

4.4.2 Any pruning works that are required to facilitate the development are detailed in the Tree Survey Schedule at Appendix 1.

4.4.3 Tree pruning should be carried out by a suitably qualified and insured arboricultural contractor and in accordance with the recommendations of BS 3998:2010 Tree work – Recommendations.

4.5 Impacts from Demolition/Construction Operations

4.5.1 Where proposed operations encroach beneath the canopy or into the RPA of retained trees there is the potential for damage to occur.

4.5.2 New hard surfaces are proposed within the RPA of the retained hedgerows H003, H006, H007, H012, H013, H014, H015, H016, H018, H019, H022, H024, H026, H028, H029, H030 and H032 and group G094, as detailed on the Tree Protection Plan at Appendix 2.

4.5.3 All works within the RPA or beneath the canopy of retained trees have been detailed as part of the Arboricultural Method Statement at Appendix 2, to ensure that these works are carried out in a manner that eliminates the likelihood of any damage occurring.

4.6 Mitigation and Protection

4.6.1 The retained trees will need protecting from development operations to ensure that they are not negatively impacted during the development. This has been detailed as part of the Arboricultural Method Statement. The primary method to achieve this is through the use of temporary protection fencing which encloses the RPA of retained trees, creating a sacrosanct Construction Exclusion Zone (CEZ) where no works can take place

4.6.2 In areas where protection fencing is not practicable or would cause an excessive constraint to development operations, further protective methods can be employed such as ground protection measures to avoid soil compaction or stem boxes to protect tree stems from physical damage.

4.6.3 Where existing hard surfaces are present within the RPA of retained trees they should be kept in place where possible, even if they are not part of the design proposals. These hard surfaces will provide ground protection for any roots present beneath the hard surface during development works.

4.6.4 Any works that are proposed beneath the canopy or within the RPA of retained trees must be carried out as specified in an Arboricultural Method Statement. It is likely that these works will need to be supervised by the project arboriculturist so that any tree related issues that occur can be suitably dealt with.

4.6.5 To compensate for potential root damage and stress caused by construction activities, retained trees onsite should be mulched. The materials that may be used include wood chip, pulverized bark, or leaf mould. The mulched area should extend throughout the open ground within the RPA. The depth of an organic mulch should not be so much as to inhibit aeration of the root system or to cause overheating (Approximately 50 mm to 100 mm).

4.6.6 Where the removal of trees is required to facilitate the development, the planting of suitable replacement trees will be required as part of a wider landscaping scheme. It is recommended that tree planting follows a 5 – 10 – 20 - 30 formula (i.e. No more than 5% of any one cultivar, no more than 10% of any one species, no more than 20% of any one genus, and no more than 30% of any one family.) This gives any new tree population maximum resilience against pests and diseases.

4.6.7 Tree planting and establishment should be carried out in accordance with BS 8545:2014 *Trees: from nursery to independence in the landscape – Recommendations.*

5. Hedgerow Regulations 1997

5.1 Introduction

5.1.1 A hedgerow is defined as a row of woody bushes or trees, usually less than 5m wide at the base, located at the edge of a garden, field, or road. The Hedgerows Regulations 1997 protect important countryside hedges from removal. The regulations apply to hedgerows in England and Wales. Wildlife, historical and landscape criteria determine whether a hedge is important, as below.

5.2 Legal protection

5.2.1 Length - A hedgerow is protected if it is more than 20m long with gaps of 20m or less in its length or less than 20m long but meets another hedge at each end.

5.2.2 Location – A hedgerow is also protected if it is on or next to:

- land used for agriculture or forestry
- land used for breeding or keeping horses, ponies or donkeys
- common land
- a village green
- a Site of Special Scientific Interest (SSSI)
- Special Area of Conservation (SAC) or Special Protection Area (SPA)
- a local or national nature reserve
- land belonging to the state.

A hedgerow is not protected if it's in, or marks the boundary of, a private garden.

5.2.3 Importance - A hedgerow is 'important', and is protected, if it is at least 30 years old and meets at least one of these criteria:

- includes woody species and associated features as specified in Schedule 1, Part II Criteria, paragraph 7(1) of the Hedgerow Regulations.
- marks all or part of a parish boundary that existed before 1850
- contains an archaeological feature such as a scheduled monument
- is completely or partly in or next to an archaeological site
- marks the boundary of an estate or manor or looks to be related to any building or other feature that is part of the estate or manor that existed before 1600
- is part of a field system or looks to be related to any building or other feature associated with the field system that existed before 1845
- contains protected species listed in the Wildlife and Countryside Act 1981 (as amended) and/or The Conservation of Habitats & Species Regulations 2017 (as amended)

- contains species that are endangered, vulnerable and rare and identified in the British Red Data books

Schedule 1, Part II Criteria, paragraph 7(1) of the Hedgerow Regulations.

7.(1) Subject to sub-paragraph (2), the hedgerow includes—

(a)at least 7 woody species;

(b)at least 6 woody species, and has associated with it at least 3 of the features specified in sub-paragraph (4);

(c)at least 6 woody species, including one of the following—

black-poplar tree (Populus nigra ssp betulifolia);

large-leaved lime (Tilia platyphyllos);

small-leaved lime (Tilia cordata);

wild service-tree (Sorbus torminalis); or

(d)at least 5 woody species and has associated with it at least 4 of the features specified in sub-paragraph (4), and the number of woody species in a hedgerow shall be ascertained in accordance with sub-paragraph (3).

The above needs to be read with reference to Schedule 1 (Additional Criteria for determining 'Important' Hedgerows) of The Hedgerows Regulations 1997.

5.3 Findings

5.3.1 Thirty-one hedgerows were surveyed in the tree survey, all located on the flood plain between Frodsham Marsh Windfarm and Frodsham substation on the northeast bank of the R. Weaver. The predominant feature of the vast majority of all the surveyed hedgerows was they were field boundary hedgerows over 20 metres in length and consisted of mostly Hawthorn (80 to 90%) with natural colonisation of elder, blackthorn, willow, wild cherry and silver birch with an understorey of bramble. Most of the hedgerows were lapsed (had not seen any recent management) and potentially provided habitat corridors for a variety of priority species including European Protected Species'.

5.3.2 Based on the above all the hedgerows would be subject to protection under the Hedgerows Regulations 1997.

6. References

BS 3998:2010 *Tree work – Recommendations*. ISBN 978 0 580 53777 6

BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*. ISBN 978 0 580 69917 7

BS 8545:2014 *Trees: from nursery to independence in the landscape – Recommendations*. ISBN 978 0 580 713170

Littlefair P. (2011). *Site layout planning for daylight and sunlight: a guide to good practice* (BR 209). ISBN 978 1 84806 178 1.

The Hedgerows Regulations 1997 No. 1160

Volume 4 National Joint Utilities Group (NJUG*) Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees, Volume 4: Issue 2: 16/11/2007*, www.njug.org.uk

Appendix 1: Tree Survey Schedule

Table 3: Tree Survey Schedule

Key:	Symbols Used	Age Class	SLE	Comments	Management	Category
	< = less than ~ = approximately > = greater than # = estimated	Young, Semi mature, Early mature, Mature or Over mature	Estimate of Safe Life Expectancy (<10 Years, 10+ Years, 20+ Years or 40+ Years)	AGL - Above Ground Level MS - Multi-Stemmed TD - Trunk Division (height in m) DED - Dutch Elm Disease ADB - Ash Die Back AHC (1, 2, 3 or 4) - Ash Health Class	*Tree works that are recommended regardless of future development are in Italics* **Tree works that are required to facilitate the proposed development are in Bold**	**BS 5837:2012 Retention Categories:** U - Unsuitable for retention A - High B - Moderate C - Low **Sub-categories:** 1 - Mainly arboricultural qualities 2 - Mainly landscape qualities 3 - mainly cultural value

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
G001#	Elder *(Sambucus nigra)*	3	4	200	2	2	2	2	0	Mature	<10 years	Low	Poor overall Physiological and Structural condition. Stem/limb decay. Inclusive bark. Dieback - poor foliage. Dead wood. Some failed unions	No action required.	C1	0	142
T002#	Elder *(Sambucus nigra)*	2.5	3	150	3	2	3	2	0	Mature	<10 years	Low	Fair overall Physiological and Structural condition. Stem/limb decay. Inclusive bark. Fractured limbs - storm damage. Dead wood.	No action required.	C1	3.1	30

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
G003#	Hawthorn *(Crataegus sp.)* Elder *(Sambucus nigra)* Willow *(Salix sp.)*	3	2	150	2	2	2	2	0.5	Early Mature	20+ Years	Low	Good overall Physiological and Structural condition. Area of natural colonisation within wind farm compound. Good spacing with adequate clearance from access Road.	No action required.	B2	0	####
G004#	Willow *(Salix sp.)* Elder *(Sambucus nigra)* Hawthorn *(Crataegus sp.)*	3	2	150	2	2	2	2	0.5	Early Mature	20+ Years	Low	Good overall Physiological and Structural condition. Area of natural colonisation within wind farm compound. Good spacing with adequate clearance from access Road.	No action required.	B2	0	4740
G005#	Hawthorn *(Crataegus sp.)* Elder *(Sambucus nigra)*	3	2	150	2	2	2	2	0.5	Early Mature	20+ Years	Low	Good overall Physiological and Structural condition. Area of natural colonisation within wind farm compound. Good spacing with adequate clearance from access Road.	No action required.	B2	0	####
G006#	Elder *(Sambucus nigra)*	3	2	100	1.5	1.5	1.5	1.5	0.5	Early Mature	10+ Years	Low	Good overall Physiological and fair Structural condition. Area of natural colonisation within wind farm compound. Good spacing with adequate clearance from access Road.	No action required.	C1	0	229

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
G007#	Silver birch *(Betula pendula)* Willow *(Salix sp.)*	7	2	170	3	3	3	3	0.5	Young	20+ Years	Low	Good overall Physiological and Structural condition. Natural colonisation located within wind farm compound. Good spacing, potential wildlife habitat. Some recent tree felling evident.	No action required.	B2	0	####
G008#	Elder *(Sambucus nigra)*	2	2	100	1	1	1	1	0.5	Semi Mature	20+ Years	Low	Good overall Physiological and Structural condition. Area of natural colonisation within wind farm compound. Good spacing with adequate clearance from access Road.	No action required.	C1	0	3612
G009#	Elder *(Sambucus nigra)*	3	3	130	1.5	1.5	1.5	1.5	0.5	Early Mature	10+ Years	Low	Fair overall Physiological and Structural condition. Broken linear group bordering access Road. Not pruned to any extent. Some failed/snapped branches.	No action required.	C1,2	0	1792
T010#	Elder *(Sambucus nigra)*	2	1	120	1	1	1	1	1	Semi Mature	10+ Years	Low	Fair overall Physiological and Structural Dead wood.	No action required.	C1	1.4	6
T011#	Elder *(Sambucus nigra)*	3	1	100	0	1	1	1	1	Semi Mature	10+ Years	Low	Fair overall Physiological and Structural Dead wood.	No action required.	C1	1.2	5
T012#	Elder *(Sambucus nigra)*	3	3	150	2	2	2	1	1	Early Mature	10+ Years	Low	Fair overall Physiological and Structural Dead wood.	No action required.	C1	3.1	30

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
T013#	Elder *(Sambucus nigra)*	3	3	100	2	2	2	2	1	Semi Mature	10+ Years	Low	Fair overall Physiological and Structural Dead wood.	No action required.	C1	2.1	14
G014#	Elder *(Sambucus nigra)*	5	4	150	3	3	3	3	1	Mature	20+ Years	Low	Linear group of natural colonisation borders field. Fair overall Physiological and Structural condition. Root damage. Stem/limb decay. Inclusive bark. Dieback - poor foliage. Dead wood.	No action required.	B2	0	3590
G015#	Willow *(Salix sp.)* Hawthorn *(Crataegus sp.)* Elder *(Sambucus nigra)*	6	2	200	3.5	3.5	3.5	3.5	0	Early Mature	20+ Years	Low	Linear group of natural colonisation on north facing embankment. Good overall Physiological and Structural condition. Stem/limb decay. Inclusive bark. Dead wood.	No action required.	B2	0	6944
G016#	Balsam poplar *(Populus balsamifera)* Hawthorn *(Crataegus sp.)* Common alder *(Alnus glutinosa)* Elder *(Sambucus nigra)*	15	3	400	5	5	5	5	1	Early Mature	20+ Years	Low	Linear field boundary group of predominantly poplar. Some dead/decayed stems. Good overall Physiological and Structural condition. Stem/limb decay. Inclusive bark. Bark necrosis.	No action required.	B2	0	1025

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
T017	Sycamore *(Acer pseudoplatanus)*	9	1	450	4	4	4	4	1.5	Early Mature	40+ Years	Low	Good overall Physiological and Structural condition. Not pruned to any extent. Adjacent pond.	No action required.	B1	5.4	92
T018	Sycamore *(Acer pseudoplatanus)*	9	1	450	4	4	4	4	1.5	Early Mature	40+ Years	Low	Good overall Physiological and Structural condition. Not pruned to any extent. Adjacent pond.	No action required.	B1	5.4	92
T019	Sycamore *(Acer pseudoplatanus)*	9	1	450	4	4	4	4	1.5	Early Mature	40+ Years	Low	Good overall Physiological and Structural condition. Not pruned to any extent. Adjacent pond.	No action required.	B1	5.4	92
G020#	Willow *(Salix sp.)*	7	3	200	4	4	4	4	0	Early Mature	10+ Years	Low	Located within pond area therefore restricted access and limited inspection. Fair overall Physiological and Structural condition.	No action required.	C1	0	502
T021#	Elder *(Sambucus nigra)*	3	6	100	2	3	3	2	0	Early Mature	10+ Years	Low	Fair overall Physiological and Structural Dead wood.	No action required.	C1	2.9	26
T022#	Elder *(Sambucus nigra)*	2.5	2	100	2	3	3	2	0	Early Mature	10+ Years	Low	Fair overall Physiological and Structural Dead wood.	No action required.	C1	1.7	9
T023#	Elder *(Sambucus nigra)*	3	4	120	3	3	3	3	0.5	Early Mature	10+ Years	Low	Fair overall Physiological and Structural Dead wood.	No action required.	C1	2.9	26

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
G024#	Elder *(Sambucus nigra)*	5	2	150	1	2	2	1	0.5	Early Mature	20+ Years	Low	Natural colonisation on NW facing embankment. Good overall Physiological and Structural condition. Canopies pruned on track side.	No action required.	B2	0	690
T025#	Elder *(Sambucus nigra)*	3	2	230	3	3	2	2	0.5	Early Mature	10+ Years	Low	Good overall Physiological and Structural Dead wood.	No action required.	B1	3.9	48
G026#	Elder *(Sambucus nigra)*	5	4	130	2	2	2	2	0.5	Early Mature	20+ Years	Low	Natural colonisation on N facing embankment. Fair overall Physiological and Structural condition. Some dead and split stems.	No action required.	B2	0	186
G027#	Elder *(Sambucus nigra)*	5	4	160	2	2	2	2	0.5	Early Mature	20+ Years	Low	Sporadic natural colonisation on N facing embankment. Fair overall Physiological and Structural condition. Generally good condition.	No action required.	B2	0	598
T028#	Elder *(Sambucus nigra)*	3	3	120	1.5	1.5	1.5	1.5	1.5	Early Mature	<10 years	Low	Poor overall Physiological and Structural condition. Dead wood and dieback to stem.	No action required.	C1	2.5	20
T029#	Elder *(Sambucus nigra)*	3	1	150	2	3	2	2	1.5	Early Mature	10+ Years	Low	Good overall Physiological and Structural Dead wood.	No action required.	C1	1.8	10

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
G030#	Elder *(Sambucus nigra)*	5	3	200	2	3	4	3	0	Mature	20+ Years	Low	Natural colonisation located on N facing embankment. Fair overall Physiological and Structural condition. Evidence of recent pruning on track side.	No action required.	B2	0	485
G031#	Elder *(Sambucus nigra)*	5	3	200	2	3	4	3	0	Mature	10+ Years	Low	Natural colonisation located on N facing embankment. Fair overall Physiological and Structural condition. Some failed/split stems. Evidence of recent pruning on track side.	No action required.	C2	0	733
T032#	Goat willow *(Salix caprea)*	4	1	300	3	5	4	4	0.5	Early Mature	10+ Years	Low	Natural colonisation growing 3 drainage channel in field. Fair overall Physiological and Structural condition.	No action required.	C1	3.6	41
T033#	Goat willow *(Salix caprea)*	4	1	300	3	5	3	4	0.5	Early Mature	10+ Years	Low	Natural colonisation growing 3 drainage channel in field. Fair overall Physiological and Structural condition.	No action required.	C1	3.6	41

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
G034#	Willow *(Salix sp.)* Hawthorn *(Crataegus sp.)* Common alder *(Alnus glutinosa)* Elder *(Sambucus nigra)* Lime *(Tilia sp.)* Sycamore *(Acer pseudoplatanus)* Poplar *(Populus sp.)* Ash *(Fraxinus sp.)*	18	1	1000	9	9	9	9	1	Mature	40+ Years	Low	Closely spaced small copse woodland exhibiting good species diversity although grazing stock prevents regeneration. Some failed and hung up branches present a low risk. Good overall Physiological and Structural condition. Root damage. Inclusive bark. Fractured limbs - storm damage. Dead wood.	**Remove to facilitate the creation of a bird mitigation area required to enhance the value of the land for use by birds of the Mersey Estuary SPA and SSSI**	A2	0	2249
T035#	Silver birch *(Betula pendula)*	9	1	300	4	4	4	4	1.5	Early Mature	20+ Years	Low	Located adjacent to farm buildings. Good overall Physiological and Structural condition. Not pruned to any extent. Acceptable condition at present.	No action required.	B1	3.6	41

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
T036#	Elder *(Sambucus nigra)*	5	5	120	3	3	3	3	1.5	Mature	<10 years	Low	Located adjacent to farm buildings. Poor overall Physiological and Structural condition. Abutting ancillary buildings.	No action required.	C1	3.2	32
T037#	Elder *(Sambucus nigra)*	3	3	100	2	2	2	2	2	Early Mature	<10 years	Low	Poor overall Physiological and Structural Condition. Failed stem and bark damage.	No action required.	C1	2.1	14
T038#	Poplar *(Populus sp.)*	14	1	640	6	6	6	6	1	Mature	20+ Years	Low	Good overall Physiological and Structural condition.	No action required.	B1	7.7	186
A039#	Elder species *(Sambucus sp.)* Hawthorn *(Crataegus sp.)* Willow *(Salix sp.)*	5	3	200	3	3	3	3	0.5	Early Mature	20+ Years	Low	Area of natural colonisation predominantly located around farm buildings.	No action required.	C1	0	####
T040#	Elder *(Sambucus nigra)*	5	2	270	2	3	2	2	1.5	Mature	10+ Years	Low	Fair overall Physiological and Structural condition. Bifurcated stem with no indication of failure. Pruned on track side.	No action required.	C1	4.6	66
T041#	Elder *(Sambucus nigra)*	3.5	1	260	4	2	3	2	1	Mature	20+ Years	Low	Good overall Physiological and Structural condition. Bifurcated stem with no indication of failure. Birds nest I crown.	No action required.	B1	3.1	30

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
T042#	Elder *(Sambucus nigra)*	7	2	400	4	5	2	4	N/A	Dead	Dead	Low	Dead tree. Acceptable condition at present due to current land use.	No action required.	U	6.8	145
T043#	Hawthorn *(Crataegus sp.)*	2	1	250	N/A	N/A	N/A	N/A	N/A	Mature	Dead	Low	Tree has failed and is horizontal. Acceptable condition at present due to current land use.	No action required.	U	3	28
T044#	Silver birch *(Betula pendula)*	7	1	230	3	3	3	3	2	Early Mature	20+ Years	Low	Good overall Physiological and Structural condition. Bifurcated stem with no indication of failure.	No action required.	B1	2.8	25
T045#	Silver birch *(Betula pendula)*	7	1	230	3	3	3	3	2	Early Mature	20+ Years	Low	Good overall Physiological and Structural condition. Bifurcated stem with no indication of failure.	No action required.	B1	2.8	25
G046#	Willow *(Salix sp.)* Silver birch *(Betula pendula)* Sycamore *(Acer pseudoplatanus)*	7	1	450	4.5	4.5	4.5	4.5	1	Early Mature	20+ Years	Low	Good overall Physiological and Structural condition. Linear group located on N facing embankment. Willows to W of group exhibiting some failed stems and decay. Acceptable condition at present due to current land use.	No action required.	B2	0	999

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
T047#	Poplar *(Populus sp.)*	8	1	400	4	4	4	4	N/A	Dead	Dead	Low	Dead tree. Acceptable condition at present due to current land use.	No action required.	U	4.8	72
T048#	Poplar *(Populus sp.)*	7	1	400	4	4	4	4	N/A	Dead	Dead	Low	Dead tree. Acceptable condition at present due to current land use.	No action required.	U	4.8	72
G049#	Elder *(Sambucus nigra)*	5	1	10	4	4	4	4	1	Mature	10+ Years	Low	Fair overall Physiological and Structural condition. Animal damage to 1.5m. Root damage. Stem/limb decay. Inclusive bark. Bark necrosis.	No action required.	C1,2	0	183
T050#	Silver birch *(Betula pendula)*	6	1	230	3	3	3	3	2	Early Mature	20+ Years	Low	Good overall Physiological and Structural condition. Bifurcated stem with no indication of failure. Located on W facing embankment.	No action required.	B1	2.8	25

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
G051#	Silver birch *(Betula pendula)* Sycamore *(Acer pseudoplatanus)* Elder *(Sambucus nigra)*	9	1	400	5	4	5	4	1	Early Mature	20+ Years	Low	Good overall Physiological and Structural condition. Linear group located on W facing embankment. Elders to S of group appear moribund. Acceptable condition at present due to current land use.	No action required.	B2	0	577
T052#	Elder species *(Sambucus sp.)*	5	3	400	3	3	3	3	N/A	Dead	Dead	Low	Dead tree. Acceptable condition at present due to current land use.	No action required.	U	8.3	216
G053#	Flowering cherry *(Prunus Serrulata)*	8	1	400	5	4	5	4	1	Early Mature	20+ Years	Low	Good overall Physiological and Structural condition. Linear group located on NW facing Embankment. Possibly planted.	No action required.	B2	0	321
G054#	Flowering cherry *(Prunus Serrulata)*	8	1	400	5	4	5	4	1	Early Mature	20+ Years	Low	Good overall Physiological and Structural condition. Linear group located on NW facing Embankment. Possibly planted and exhibiting regeneration.	No action required.	B2	0	491

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
G055#	Silver birch *(Betula pendula)*	13	1	200	3	3	3	3	1	Semi Mature	20+ Years	Low	Planted group around disused car park. Has seen little previous management. Good overall Physiological and Structural condition. Inclusive bark.	No action required.	B2	0	564
G056#	Elder *(Sambucus nigra)*	6	2	300	4	4	4	4	0	Mature	20+ Years	Low	Congested group with Dense bramble beneath-potential wildlife habitat. Fair overall Physiological and Structural condition. Stem/limb decay. Stem hollow, decayed, cracked (inc. shear cracks). Inclusive bark. Fractured limbs - storm damage.	No action required.	B2	0	530
T057#	Lime *(Tilia sp.)*	16	1	560	6	5	5	4	3	Mature	40+ Years	Low	One of x3 planted limes adjacent to access Road. Good overall Physiological and Structural condition. Pruned in the past to remove low hanging lateral branches. Tree likely deep rooted, RPA unlikely to pass beneath road.	No action required.	B1	6.7	141

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
T058#	Lime *(Tilia sp.)*	16	3	400	6	5	5	4	3	Mature	40+ Years	Low	One of x3 planted limes adjacent to access Road. Good overall Physiological and Structural condition. Pruned in the past to remove low hanging lateral branches. Tree likely deep rooted, RPA unlikely to pass beneath road.	No action required.	B1	8.3	216
T059#	Lime *(Tilia sp.)*	16	3	980	8	4	5	7	4	Mature	40+ Years	Low	One of x3 planted limes adjacent to access Road. Good overall Physiological and Structural condition. Pruned in the past to remove low hanging lateral branches. Tree likely deep rooted, RPA unlikely to pass beneath road.	No action required.	B1	15	707
G060#	Mixed species *(Mixed species)*	12	1	250	3	3	3	3	5	Early Mature	20+ Years	Low	Natural colonisation to N side of access Road. Alder, elder, silver birch. Some ad-hoc pruning evident on S side to provide clearance from road. Trees likely deep rooted with RPAs unlikely to be present beneath the road.	No action required.	B2	0	302

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
G061#	Mixed species *(Mixed species)*	15	1	450	4	4	4	4	5	Mature	20+ Years	Low	Possibly planted trees with some natural colonisation to S side of access Road. Alder, elder, silver birch, hawthorn. Some ad-hoc pruning evident on N side to provide clearance from road. Trees likely deep rooted with RPAs unlikely to be present beneath the road.	No action required.	B2	0	908
T062#	Willow *(Salix sp.)*	14	5	300	8	6	6	6	7	Mature	10+ Years	Low	One of x2 possibly planted trees adjacent to access Road. Fair overall Structural condition, physiological condition appears good. Pruned in the past to remove low hanging lateral branches which now exhibit localised decay. Tree likely deep rooted although RPA likely to pass beneath road. Inclusive bark.	No action required.	C1	8.1	206

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
T063#	Willow *(Salix sp.)*	14	4	300	6	3	4	3	7	Mature	10+ Years	Low	One of x2 possibly planted trees adjacent to access Road. Fair overall Structural condition, physiological condition appears good. Pruned in the past to remove low hanging lateral branches which now exhibit localised decay. Tree likely deep rooted although RPA likely to pass beneath road. Inclusive bark.	No action required.	C1	7.2	163
G064#	Mixed species *(Mixed species)*	16	1	350	5	5	5	5	5	Early Mature	20+ Years	Low	Natural colonisation located to west of access Road. Silver birch, alder, elder. Good overall Physiological and Structural condition. Currently adequate clearance from Road. RPS unlikely to be present beneath Road.	No action required.	B2	0	1082

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
G065#	Mixed species *(Mixed species)*	15	1	400	5	5	5	5	4	Early Mature	20+ Years	Low	Natural colonisation located to east of access Road. Willow, silver birch, alder, hawthorn. Good overall Physiological and Structural condition. Currently adequate clearance from Road. RPS unlikely to be present beneath Road.	No action required.	B2	0	886
G066#	Mixed species *(Mixed species)*	12	1	150	3	3	3	3	0.5	Semi Mature	20+ Years	Low	Natural colonisation located adjacent substation. Silver birch, alder, willow. Closely spaced with congested crowns. Acceptable condition at present, will require management in future to re-space.	No action required.	C1	0	640

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
G067#	Mixed species *(Mixed species)*	12	1	200	4	4	4	4	0	Early Mature	20+ Years	Low	Willow, alder, elder, Hawthorn. Densely spaced group with bramble/gorse understory, restricted access and limited inspection. Potential wildlife habitat. Fair overall Structural condition, physiological condition appears good. RPAs restricted by substation boundary fence. Inclusive bark, Dead wood. Occasional larger trees within group.	**Remove small section to facilitate grid connection.**	B2	0	6513
G068#	Mixed species *(Mixed species)*	16	1	250	3	3	3	3	2	Semi Mature	40+ Years	Low	Silver birch with willow, hawthorn & oak. Good overall Physiological and Structural condition. Probably planted as screen buffer around substation. Closely spaced and will require silvicultural management in the near future.	No action required.	B2	0	6851

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
G069#	Elder *(Sambucus nigra)*	3	1	130	2	2	2	2	1.5	Early Mature	10+ Years	Low	Natural colonisation within agricultural field. Animal damage to basal and lower stem. Acceptable condition at present due to current land use.	**Remove to facilitate development.**	C1	0	75
T070#	Elder *(Sambucus nigra)*	3	3	130	2	2	2	2	1	Mature	10+ Years	Low	Natural colonisation within agricultural field. Some acute unions have failed. Acceptable condition at present.	No action required.	C1	2.7	23
T071#	Elder *(Sambucus nigra)*	3	3	140	2	2	2	2	1	Mature	10+ Years	Low	Natural colonisation within agricultural field. Animal damage to roots and stem. Acceptable condition at present.	No action required.	C1	2.9	26
T072#	Elder *(Sambucus nigra)*	3	1	150	2	2	2	2	1	Mature	10+ Years	Low	Natural colonisation within agricultural field. Animal damage to roots and stem. Acceptable condition at present.	No action required.	C1	1.8	10

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
T073#	Elder *(Sambucus nigra)*	3	3	150	2	2	2	2	1	Mature	10+ Years	Low	Natural colonisation within agricultural field. Animal damage to roots and stem. Acceptable condition at present.	No action required.	C1	3.1	30
T074#	Field maple *(Acer campestre)*	3	1	150	2	2	2	2	1	Early Mature	20+ Years	Low	Natural colonisation within agricultural field. Not pruned to any extent. Acceptable condition at present.	No action required.	B1	1.8	10
T075#	Elder *(Sambucus nigra)*	3	1	300	3	3	3	3	1	Mature	10+ Years	Low	Natural colonisation within agricultural field. Animal damage to roots and stem. Acceptable condition at present.	No action required.	C1	3.6	41
T076#	Elder *(Sambucus nigra)*	3	3	200	2	2	2	2	1	Mature	10+ Years	Low	Natural colonisation within agricultural field. Animal damage to roots and stem. Acceptable condition at present.	No action required.	C1	4.2	55

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
G077#	Mixed species *(Mixed species)*	8	1	250	4	4	4	4	0.5	Mature	20+ Years	Low	Lapsed field boundary hedgerow consisting predominantly elder with willow and Hawthorn. Willow exhibiting some poor structural conditions although acceptable at present due to current land use and low footfall. Potential wildlife habitat.	No action required.	B2	0	2592
A078#	Mixed species *(Mixed species)*	5	1	250	2.5	2.5	2.5	2.5	1	Early Mature	10+ Years	Low	Natural colonisation within agricultural field. Animal damage to roots and lower stems. Acceptable condition at present due to current land use.	No action required.	C1	0	####
G079#	Aspen *(Populus tremula)*	11	1	300	4	4	4	4	1	Early Mature	10+ Years	Low	Closely spaced group of approx x8 specimens located adjacent to boundary fence. Failed, torn and hung up branches within group is acceptable due to low footfall. Previously pruned on track side.	No action required.	C1	0	416

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
G080#	Mixed species *(Mixed species)*	4	1	130	2.5	2.5	2.5	2.5	0	Early Mature	10+ Years	Low	Broken natural colonisation located adjacent field boundary. Potential wildlife habitat. Acceptable condition at present.	No action required.	C1	0	589
T081#	Elder *(Sambucus nigra)*	3	5	150	3	3	3	3	1	Mature	10+ Years	Low	Natural colonisation within agricultural field. Animal damage to roots and stem. Acceptable condition at present.	No action required.	C1	4	50
T082#	Elder *(Sambucus nigra)*	3	3	150	2	2	2	2	1	Mature	10+ Years	Low	Natural colonisation within agricultural field. Animal damage to roots and stem. Acceptable condition at present.	No action required.	C1	3.1	30
T083#	Field maple *(Acer campestre)*	2.5	3	110	2	2	2	2	0.5	Mature	20+ Years	Low	Natural colonisation within agricultural field. Previously pruned on track side. Acceptable condition at present.	No action required.	B1	2.3	17

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
T084#	Goat willow *(Salix caprea)*	5	4	120	3	3	1	3	0	Semi Mature	10+ Years	Low	Natural colonisation adjacent post and wire fence. Previously flailed on track side. Acceptable condition at present.	No action required.	C1	2.9	26
G085#	Mixed species *(Mixed species)*	10	1	300	5	5	5	5	0	Early Mature	20+ Years	Low	Dense closely spaced linear group located on south facing embankment. Willow, hawthorm, elder, Blackthorn providing wildlife habitat. Dense bramble understorey.	No action required.	B2	0	####
G086#	Mixed species *(Mixed species)*	6	1	300	3	3	3	3	0.5	Early Mature	20+ Years	Low	Willow and hawthorn located within agricultural field. Not pruned to any extent.	No action required.	B2	0	777
G087#	Mixed species *(Mixed species)*	6	1	300	5	6	4	6	0	Early Mature	10+ Years	Low	Approx. X3 Willows located within agricultural field. Significant split and failed stem unions evident. Acceptable condition at present due to current land use.	No action required.	C1	0	408
T088#	Elder *(Sambucus nigra)*	2	4	120	2	2	2	2	0	Mature	<10 years	Low	Tree has failed and is horizontal.	No action required.	U	2.9	26

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
G089#	Goat willow *(Salix caprea)*	6	3	300	4	4	4	4	2	Mature	<10 years	Low	Approximately x6 willows all exhibiting historic failed included unions of lateral branches. Significant decay noted to failures. X3 hawthorm within group appear of good condition. Acceptable condition at present due to low footfall.	No action required.	C1	0	845
A090#	Mixed species *(Mixed species)*	5	1	200	2.5	2.5	2.5	2.5	0.5	Early Mature	20+ Years	Low	Large, flat open area mostly devoid of trees. Willow, Hawthorn and elder sparsely spaced across the site.	**Clear southern area to facilitate the development.**	C1	0	####
A091#	Mixed species *(Mixed species)*	10	1	500	4.5	4.5	4.5	4.5	0	Early Mature	40+ Years	Low	Sycamore, horse Chestnut, wild cherry, silver birch, pine sp., goat willow, ash, western red cedar located toward the N end, with predominantly Hawthorn and elder central and to the S. Provides wildlife habitat. Located on east facing embankment.	No action required.	A2	0	####

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
A092#	Mixed species *(Mixed species)*	6	1	200	3	3	3	3	0	Early Mature	20+ Years	Low	Area sparsely populated with predominantly Hawthorn with occasional elder, Willow. Area not currently heavily grazed and providing wildlife habitat.	No action required.	C2	0	####
G093#	Hawthorn *(Crataegus monogyna)* Blackthorn *(prunus spinosa)*	6	1	200	3	3	3	3	1	Early Mature	20+ Years	Low	Dense group with several failed trees/branches throughout. Potential wildlife habitat. Fair overall Physiological and Structural condition. Root damage. Root decay (fungi). Stem/limb decay.	No action required.	B2	2.4	1479
G094#	Hawthorn *(Crataegus monogyna)*	5	1	180	3	3	3	3	0	Mature	20+ Years	Low	Natural colonisation located within agricultural field. Linear group located along NE edge of field. Not pruned to any extent, field grazed by sheep.	No action required.	B2	0	1857
T095#	Ash *(Fraxinus sp.)*	8	3	40	5	5	5	5	2	Early Mature	10+ Years		Good overall Physiological and Structural condition. No evidence of previous management. Pests and Diseases: Ash Health Class 1 - 100%-75% remaining canopy	No action required.	B1	0.8	2

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
T096#	Goat willow *(Salix caprea)*	6	10	150	5	5	5	5	0	Early Mature	10+ Years	Low	Natural colonisation within drainage ditch. Good Physiological and fair Structural condition.	No action required.	C1	5.7	102
G097#	Hawthorn *(Crataegus sp.)* Elder *(Sambucus nigra)*	4	1	130	2	2	2	2	0	Early Mature	20+ Years	Low	Natural colonisation predominantly along field boundary. Good Physiological and Structural condition.	No action required.	B2	0	5328
G098#	Goat willow *(Salix caprea)*	8	1	300	3	3	3	3	1	Semi Mature	20+ Years	Low	Natural colonisation.	No action required.	B1	0	501
G099#	Wild cherry *(Prunus avium)*	8	1	300	3	3	3	3	1	Early Mature	20+ Years	Low	Closely spaced area of natural colonisation.	**Remove western section to facilitate access road.**	B1	0	378
G100#	Willow *(Salix sp.)* Hawthorn *(Crataegus sp.)*	8	1	250	3	3	3	3	1	Early Mature	20+ Years	Low	Closely spaced group within small fenced area. Condition generally good with x1 willow central to group collapsed with regrowth.	No action required.	B2	0	570
T101#	Pedunculate oak *(Quercus robur)*	7	1	400	5	5	5	5	1	Early Mature	40+ Years	Low	Natural colonisation adjacent drainage ditch. Good Physiological and Structural condition-good buttress development.	No action required.	B1	4.8	72
T102#	Pedunculate oak *(Quercus robur)*	8	1	570	6	6	6	6	2.5	Early Mature	40+ Years	Low	Natural colonisation adjacent drainage ditch. Good Physiological and Structural condition-good buttress development.	No action required.	A1	6.8	145

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
T103#	Goat willow *(Salix caprea)*	7	5	150	5.5	5.5	5.5	5.5	1	Early Mature	10+ Years	Low	Natural colonisation within drainage ditch. Good Physiological and fair Structural condition.	No action required.	C1	4	50
T104#	Elder *(Sambucus nigra)*	5	5	200	4	4	4	4	1	Mature	20+ Years	Low	Natural colonisation Good Physiological and Structural condition.	No action required.	B1	5.4	92
T105#	Elder *(Sambucus nigra)*	4	3	150	3	3	3	3	0.5	Mature	10+ Years	Low	Natural colonisation Good Physiological and Structural condition.	No action required.	C1	3.1	30
A106#	Willow *(Salix sp.)*	7	3	150	3	3	3	3	0.5	Semi Mature	20+ Years	Low	Natural colonisation within disused field. Wildlife habitat.	**Remove to facilitate development.**	C2	0	####
G107#	Hawthorn *(Crataegus sp.)*	8	1	300	4	4	4	4	0	Early Mature	40+ Years	Low	Predominantly Hawthorn with cherry, elder and willow. Field boundary hedgerow on eastern side with natural colonisation populating rest of group on east facing embankment. Wildlife habitat and corridor. No previous management.	No action required.	A2	0	####

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
G108#	Poplar *(Populus sp.)* Willow *(Salix sp.)* Hawthorn *(Crataegus sp.)* Pedunculate oak *(Quercus robur)* Silver birch *(Betula pendula)*	15	1	400	5	5	5	5	1	Early Mature	40+ Years	High	Located to SE of large drainage channel with restricted access and limited inspection. Good overall physiological and Structural condition. Probably natural colonisation established since construction of M56 motorway.	No action required.	B2	0	7833
H001#	Hawthorn *(Crataegus sp.)*	2	1	130	0.5	0.5	0.5	0.5	0	Early Mature	20+ Years	Low	Well maintained field boundary hedgerow.	No action required.	B2	1.6	583
H002#	Hawthorn *(Crataegus sp.)*	3	1	200	3	3	3	3	0	Early Mature	20+ Years	Low	Broken and lapsed field boundary hedgerow. Bramble understorey.	No action required.	B2	2.4	1294
H003#	Hawthorn *(Crataegus sp.)*	4	1	200	3	3	3	3	0	Early Mature	20+ Years	Low	Broken and lapsed field boundary hedgerow straddling drainage ditch. Bramble understorey.	**Remove a small section to facilitate access road - see plans.**	B2	2.4	1418
H004#	Hawthorn *(Crataegus sp.)*	4	1	200	3	3	3	3	0	Early Mature	20+ Years	Low	Lapsed field boundary hedgerow. Wildlife habitat.	No action required.	B2	2.4	849
H005#	Hawthorn *(Crataegus sp.)*	4	1	200	3	3	3	3	0	Early Mature	20+ Years	Low	Lapsed field boundary hedgerow. Wildlife habitat.	No action required.	B2	2.4	750

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
H006#	Hawthorn *(Crataegus sp.)*	2	1	100	2	2	2	2	0	Early Mature	20+ Years	Low	Lapsed field boundary hedgerow. Wildlife habitat.	**Remove a small section to facilitate access road - see plans.**	C2	1.2	439
H007#	Hawthorn *(Crataegus sp.)*	2	1	100	2	2	2	2	0	Early Mature	20+ Years	Low	Lapsed field boundary hedgerow. Wildlife habitat.	**Remove a small section to facilitate access road - see plans.**	C2	1.2	494
H008#	Hawthorn *(Crataegus sp.)*	2	1	100	2	2	2	2	0	Early Mature	20+ Years	Low	Broken & Lapsed field boundary hedgerow. Wildlife habitat.	No action required.	C2	1.2	458
H009#	Hawthorn *(Crataegus sp.)*	2	1	100	2	2	2	2	0	Early Mature	20+ Years	Low	Broken & Lapsed field boundary hedgerow. Wildlife habitat.	No action required.	C2	1.2	213
H010#	Hawthorn *(Crataegus sp.)*	2	1	100	2	2	2	2	0	Early Mature	20+ Years	Low	Broken & Lapsed field boundary hedgerow. Wildlife habitat.	No action required.	C2	1.2	325
H011#	Hawthorn *(Crataegus sp.)*	4	1	150	2	2	2	2	0	Early Mature	20+ Years	Low	Broken lapsed field boundary hedgerow. Wildlife habitat.	No action required.	B2	1.8	896
H012#	Hawthorn *(Crataegus sp.)*	3	1	200	2	2	2	2	0	Early Mature	20+ Years	Low	Lapsed field boundary hedgerow. Wildlife habitat/corridor.	**Remove a small section to facilitate access road - see plans.**	B2	2.4	1238
H013#	Hawthorn *(Crataegus sp.)*	3	1	200	2	2	2	2	0	Early Mature	20+ Years	Low	Lapsed field boundary hedgerow. Wildlife habitat/corridor.	**Remove a small section to facilitate access road - see plans.**	B2	2.4	506

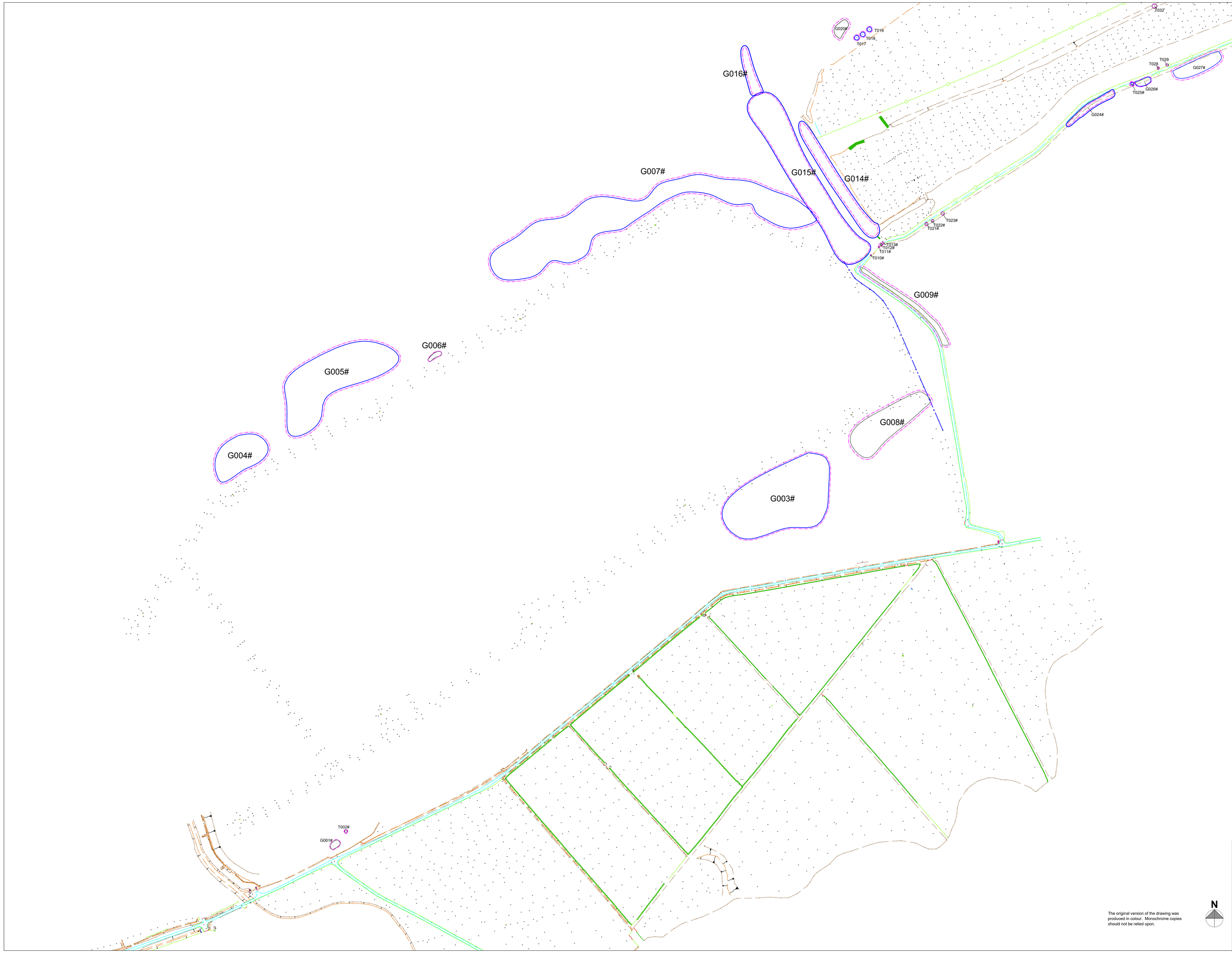
Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
H014#	Hawthorn *(Crataegus sp.)*	3	1	200	2	2	2	2	0	Early Mature	20+ Years	Low	Lapsed field boundary hedgerow adjacent to drainage ditch. Wildlife habitat/corridor.	**Remove a small section to facilitate access road - see plans.**	B2	2.4	1205
H015#	Hawthorn *(Crataegus sp.)*	3	1	150	2	2	2	2	0	Mature	20+ Years	Low	Lapsed field boundary hedgerow. Significant regrowth from previous pruning points. Wildlife corridor. Bramble understorey.	**Remove a small section to facilitate access road - see plans.**	B2	1.8	942
H016#	Hawthorn *(Crataegus sp.)*	3	1	180	2	2	2	2	0	Early Mature	20+ Years	Low	Lapsed field boundary hedgerow bordering drainage ditch. Wildlife habitat/corridor.	**Remove a small section to facilitate access road - see plans.**	B2	2.2	1199
H017#	Hawthorn *(Crataegus sp.)*	5	1	150	3	3	3	3	0.5	Early Mature	20+ Years	Low	Lapsed and broken field boundary hedgerow. No understorey. Wildlife habitat.	No action required.	B1	1.8	157
H018#	Hawthorn *(Crataegus sp.)*	3.5	1	150	2	2	2	2	0.5	Early Mature	20+ Years	Low	Lapsed field boundary hedgerow. Wildlife habitat/corridor.	**Remove a small section to facilitate access road - see plans.**	B2	1.8	943
H019#	Blackthorn *(Prunus spinosa)*	3	1	120	2	2	2	2	0	Early Mature	20+ Years	Low	Lapsed field boundary hedgerow. Wildlife habitat/corridor. Bramble understorey.	**Remove a small section to facilitate access road - see plans.**	B2	1.4	788

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
H020#	Hawthorn *(Crataegus sp.)*	3	1	100	2	2	2	2	0	Early Mature	20+ Years	Low	Lapsed field boundary hedgerow. Wildlife habitat/corridor.	No action required.	B2	1.2	264
H021#	Hawthorn *(Crataegus sp.)*	4	1	100	2	2	2	2	0	Early Mature	20+ Years	Low	Lapsed field boundary hedgerow. Wildlife habitat/corridor. Bramble understorey.	No action required.	B2	1.2	639
H022#	Wild cherry *(Prunus avium)* Hawthorn *(Crataegus sp.)* Elder *(Sambucus nigra)*	3	1	150	2	2	2	2	0	Mature	20+ Years	Low	Lapsed field boundary hedgerow. Significant regrowth from previous pruning points. Wildlife corridor. Bramble understorey.	**Remove a small section to facilitate access road - see plans.**	B2	1.8	1641
H023#	Hawthorn *(Crataegus sp.)*	3	1	100	2	2	2	2	0	Early Mature	20+ Years	Low	Lapsed field boundary hedgerow. Wildlife habitat/corridor.	No action required.	B2	1.2	192
H024#	Hawthorn *(Crataegus sp.)* Elder *(Sambucus nigra)* Silver birch *(Betula pendula)* Willow *(Salix sp.)*	5	1	200	3	3	3	3	0	Early Mature	20+ Years	Low	Lapsed field boundary hedgerow. Surrounding drainage ditch. Wildlife habitat/corridor. Bramble understorey.	**Remove a small section to facilitate access road - see plans.**	B2	2.4	1070

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
H025#	Hawthorn *(Crataegus sp.)*	4	1	200	3	3	3	3	0	Early Mature	20+ Years	Low	Broken and lapsed field boundary hedgerow straddling drainage ditch. Bramble understorey.	No action required.	B2	2.4	1639
H026#	Hawthorn *(Crataegus sp.)*	4	1	200	3	3	3	3	0	Early Mature	20+ Years	Low	Broken and lapsed field boundary hedgerow straddling drainage ditch. Bramble understorey.	**Remove a small section to facilitate access road - see plans.**	B2	2.4	1639
H027#	Hawthorn *(Crataegus sp.)* Blackthorn *(Prunus spinosa)*	3	1	100	1.5	1.5	1.5	1.5	0.5	Early Mature	20+ Years	Low	Lapsed field boundary hedgerow straddling drainage ditch with Dense bramble understorey. Wildlife habitat/corridor.	No action required.	B2	1.2	298
H028#	Elder *(Sambucus nigra)* Hawthorn *(Crataegus sp.)*	7	1	300	3	3	3	3	0.5	Mature	20+ Years	Low	Lapsed and broken field boundary hedgerow with Dense bramble understorey. Wildlife habitat/corridor. Several Moribund/dead specimens noted throughout group.	**Remove a small section to facilitate access road - see plans.**	B2	3.6	#
H029#	Blackthorn *(Prunus spinosa)* Hawthorn *(Crataegus sp.)*	3	1	150	2	2	2	2	0.5	Early Mature	20+ Years	Low	Lapsed field boundary hedgerow straddling drainage ditch with Dense bramble understorey. Wildlife habitat/corridor.	**Remove a small section to facilitate access road - see plans.**	B2	1.8	530

Tree No.	Species	Height (m)	No. of Stems	Stem Dia. @ 1.5m (mm)	Crown Spreads (m)				Height of Crown Clearance (m)	Age Class	SLE	Visual Amenity	Comments	Management	Cate-gory	RPA Radius (m)	RPA Area (m^2)
					N	E	S	W									
H030#	Hawthorn *(Crataegus sp.)* Elder *(Sambucus nigra)* Blackthorn *(Prunus spinosa)*	6	1	300	3	3	3	3	0.5	Mature	20+ Years	Low	Lapsed field boundary hedgerow with Dense bramble/Blackthorn understorey. Wildlife habitat/corridor. Several Moribund/dead specimens noted throughout group.	**Remove 2x small sections to facilitate access road - see plans.**	B2	3.6	5259
H031#	Hawthorn *(Crataegus sp.)* Willow *(Salix sp.)* Blackthorn *(Prunus spinosa)* Elder *(Sambucus nigra)*	5	1	300	3	3	3	3	0.5	Mature	20+ Years	Low	Lapsed field boundary hedgerow with Dense bramble/Blackthorn understorey straddling drainage ditch. Wildlife habitat/corridor. Occasional Moribund/dead specimens noted throughout group.	No action required.	B2	3.6	1657
H032#	Elder *(Sambucus nigra)* Hawthorn *(Crataegus sp.)* Blackthorn *(Prunus spinosa)*	6	1	300	3	3	3	3	0.5	Mature	20+ Years	Low	Lapsed field boundary hedgerow with Dense bramble/Blackthorn understorey. Flailed on south/track side. Wildlife habitat/corridor. Occasional snapped/dead branches noted throughout group. Acceptable condition at present due to low footfall.	**Remove a small section to facilitate access road - see plans.**	B2	3.6	2653

Appendix 2: Figures



GENERAL NOTES

- Drawing for Planning purposes only
- Refer to arboricultural report produced by Cura Terrae Ltd titled 'Frodsham Solar' – BS 5837:2012 Arboricultural Report, Impact Assessment and Method Statement'.
- Based on topographic survey provided by the client.
- Check all dimensions on site.
- Do not scale from this drawing.
- Report any discrepancies and omissions to Cura Terrae Ltd.
- This drawing is Copyright.

3RD-PARTY INFORMATION

NB This drawing includes information provided by independent surveyors and / or consultants, to whom all queries shall be made. Cura Terrae Ltd can accept no liability for its context or accuracy.

KEY

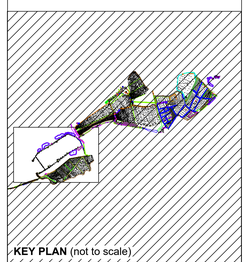
○ Stem Location

Location Estimated

Tree Categories (BS 5837:2012)

Category A Trees | Category B Trees | Category C Trees | Category U Trees

Root Protection Area (RPA)



KEY PLAN (not to scale)

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01	15.04.25	AB	SR	CLIENT COMMENTS

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Tel. (0114) 2669292
www.ecusltd.co.uk

Job

24583 - Frodsham Solar

Title

Figure 3 - Tree Constraints Plan(1)

By	Date	Scale @ A0	Drg. no.
AB	**Feb 2025**	**1:2000**	**24583-ARB-01**

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N

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GENERAL NOTES

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3RD-PARTY INFORMATION

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KEY

Stem Location

Location Estimated

Tree Categories (BS 5837:2012)

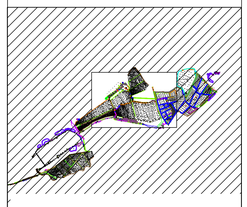
Category A Trees

Category B Trees

Category C Trees

Category U Trees

Root Protection Area (RPA)



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01	31-03-25	AB	SR	Partial Renumber

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Job

24583 - Frodsham Solar

Title

Figure 3 - Tree Constraints Plan(3)

By	Date	Scale @ A0	Drg. no.
AB	Feb 2025	1:2000	24583-ARB-01

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KEY

Stem Location

Location Estimated

Tree Categories (BS 5837:2012)

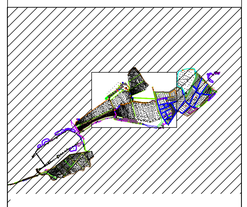
Category A Trees

Category B Trees

Category C Trees

Category U Trees

Root Protection Area (RPA)



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Job

24583 - Frodsham Solar

Title

Figure 3 - Tree Constraints Plan(3)

By	Date	Scale @ A0	Drg. no.
AB	Feb 2025	1:2000	24583-ARB-01

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KEY

Stem Location | Location Estimated

Tree Categories (BS 5837:2012)

Category A Trees | Category B Trees | Category C Trees | Category U Trees

Root Protection Area (RPA)

KEY PLAN (not to scale)

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Job
24583 - Frodsham Solar

Title
Figure 3 - Tree Constraints Plan(4)

By	Date	Scale @ A0	Drg. no.
AB	Feb 2025	1:2000	24583-ARB-01

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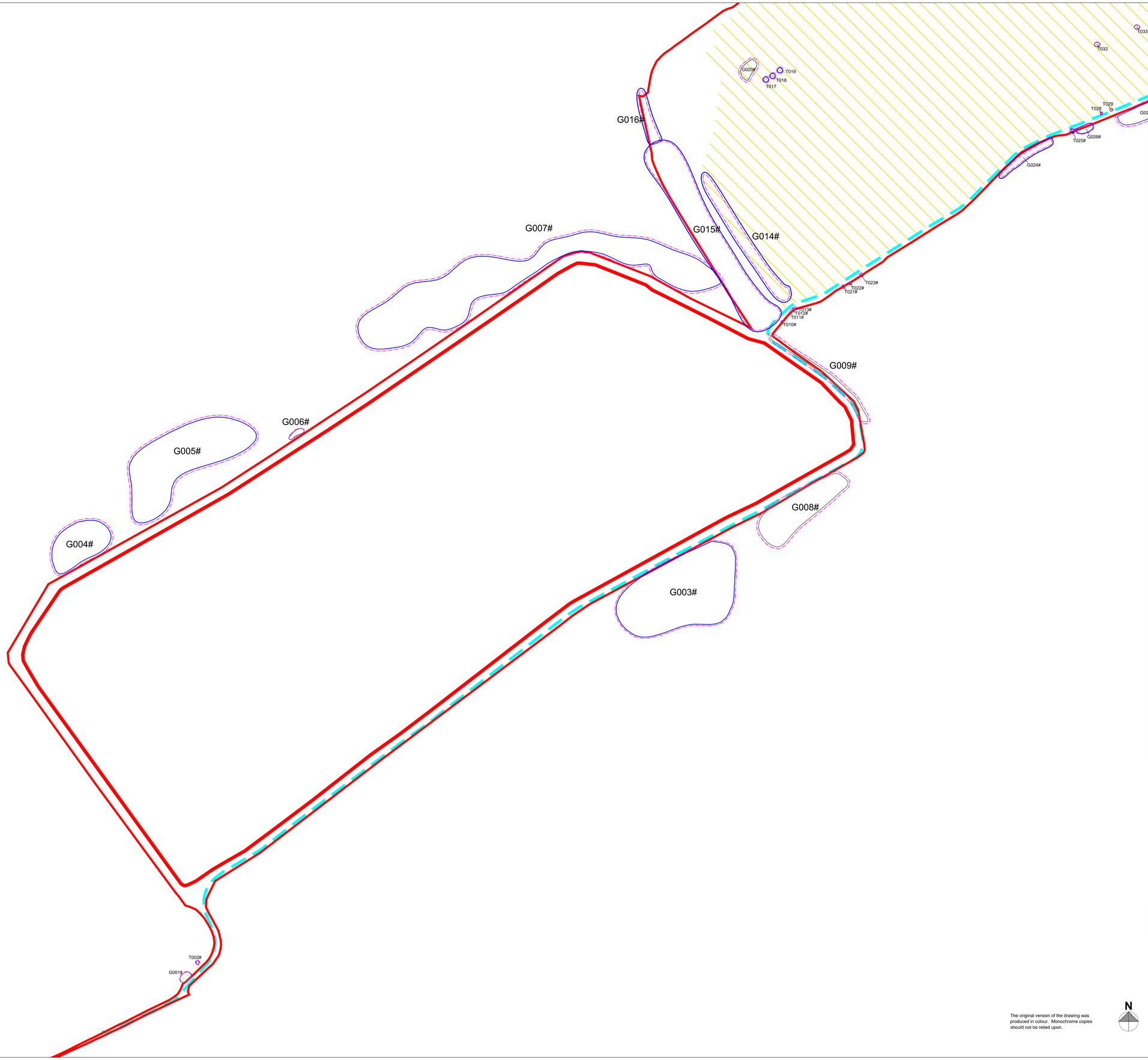

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KEY

○ Stem Location

Location Estimated

Tree Categories (BS 5837:2012)

Category A Trees

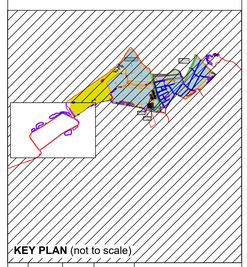
Category B Trees

Category C Trees

Tree to be Removed

Hedgerow to be removed

Root Protection Area (RPA)



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Job

24583 - Frodsham Solar

Title

Figure 4 - Tree Impacts Plan(1)

By	Date	Scale @ A0	Drg. no.
AB	Mar 2025	1:2000	24583-ARB-02

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BESS / Frodsham Solar Substation (Option 2)

GENERAL NOTES

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KEY

Stem Location

Location Estimated

Tree Categories (BS 5837:2012)

Category A Trees

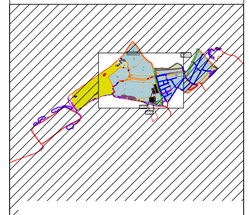
Category B Trees

Category C Trees

Tree to be Removed

Hedgerow/Group to be removed

Root Protection Area (RPA)



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02	15.04.25	AB	SR	CLIENT COMMENTS
01	31-03-25	AB	SR	Partial Renumber

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Tel. (0114) 2682292
www.ecusltd.co.uk

Job
24583 - Frodsham Solar

Title
Figure 4 - Tree Impacts Plan(3)

By	Date	Scale @ A0	Drg. no.
AB	Mar 2025	1:2000	24583-ARB-02

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BESS / Frodsham Solar Substation (Option 2)

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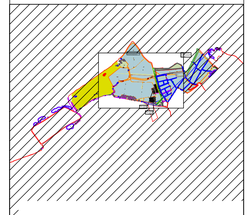
Category B Trees

Category C Trees

Tree to be Removed

Hedgerow/Group to be removed

Root Protection Area (RPA)



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Job
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Title
Figure 4 - Tree Impacts Plan(3)

By	Date	Scale @ A0	Drg. no.
AB	Mar 2025	1:2000	24583-ARB-02

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N

NB. This area is not open water, but is now covered by grassland and scrub

T063 T062 G060 G064 G055 G056 T059 T058 T057 G067 G066 G065 G061 G068 G107# H027# H028# H029# H031# H030# G108# H005# A090# A091# H007# H006# H009# H010# G098# T096# G097# H004# H008# G089# T088# H011 G099# G100# H015# H012# H017# T101# T102# H013# H003# H032# H014# H018# H016# A106# A094# H026# T104# T105# H019# H025# H020# H021# H002# T103# H022# H023# H024# H001# G094# G095# A091# A092# G085#

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Tree Categories (BS 5837:2012)

Category A Trees

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Category C Trees

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Hedgerow to be removed

Root Protection Area (RPA)

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Figure 4 - Tree Impacts Plan(4)

By	Date	Scale @ A0	Drg. no.
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General

This Arboricultural Method Statement (AMS) details the specific measures to be adopted to ensure that the retained trees are suitably protected for the duration of the proposed development.

No equipment, machinery or materials shall be brought onto the site in connection with the development until this AMS has been submitted to and approved in writing by the Local Planning Authority.

Sequence of Events

For the purpose of protecting the retained trees, the development works on site should be completed in line with the following sequence of events:

- Pre-commencement site meeting
- Tree works
- Installation of tree protection measures
- Construction operations including the *installation of hard surfaces* within the RPA of retained trees
- Removal of tree protection measures

Pre-Commencement Site Meeting

A pre-commencement site meeting should take place prior to any works being started, to finalise plans for the layout of the tree protection measures and to ensure that all potential issues are adequately considered.

The site developer and the project arboriculturist should be in attendance for the meeting. It may also be a requirement for the LPA tree officer to attend and so prior notification of the meeting should be provided to the LPA.

Tree Works

Prior to the commencement of any development operations and the storage of plant, machinery and materials on site, any required tree works should be carried out. The trees to be removed and any pruning works that are required to facilitate the development are detailed in the Tree Survey Schedule at Appendix 1 of the associated arboricultural report.

All tree works should be carried out by a suitably qualified and insured arboricultural contractor and in accordance with the recommendations of BS 3998:2010 Tree work – Recommendations.

It is recommended that trees should be checked in advance of any works by a suitably qualified ecologist to ensure there is no disturbance to nesting birds or roosting bats.

Tree Protection Fencing

Prior to the commencement of any development operations and the storage of plant, machinery and materials on site the tree protective fencing should be located as shown. Where possible this fencing should exclude all site activities from the RPA of retained trees, creating a sacrosanct Construction Exclusion Zone (CEZ).

It should be confirmed by the project arboriculturist that the fencing has been correctly set out on site, prior to the commencement of any other operations.

The default specification for tree protection fencing is shown here. However, where the site circumstances and associated risk of damaging incursion into the RPA do not necessitate the default level of protection, an alternative specification should be prepared by the project arboriculturist and, where relevant, agreed with the local planning authority.

An example of an alternative specification is 2 m tall welded mesh panels on rubber or concrete feet. In such cases, the fence panels should be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The distance between the fence couplers should be at least 1 m and should be uniform throughout the fence. The panels should be supported on the inner side by stabilizer struts, which should be attached to a base plate secured with ground pins or mounted on a block tray.

All-weather notices should be attached to the fencing to indicate that operations are not permitted within the CEZ, with words such as "CONSTRUCTION EXCLUSION ZONE – NO ACCESS".

Once the tree protection fencing has been installed it should not be altered or removed without prior consultation with the project arboriculturist. If the tree protection fencing needs to be re-positioned to allow for development operations to continue, this must be carried out under the supervision of the project arboriculturist and with prior consent from the LPA.

The tree protective fencing must remain in place until all construction operations on site have been completed and all plant and machinery has been removed.

Installation of Hard Surfaces

New hard surfaces are proposed within the RPA of the retained hedgerows H003, H006, H007, H012, H013, H016, H018, H019, H022, H024, H026, H027, H028, H029, H030, H032 and groups G094 and G097. To ensure any roots that may be present are suitably protected throughout construction, the hard surface must be installed in line with the following no-dig methodology:

Significant excavations shall not occur within the RPA, however the removal of surface vegetation is allowed, to a maximum depth of 50 mm.

If any individual roots become exposed that are smaller than 25 mm diameter they may be pruned back, making a clean cut with a suitable sharp tool. Roots occurring in clumps or of 25 mm diameter and over should be retained where possible and worked around. Where severance of these roots is unavoidable, this should only be carried out following consultation with the project arboriculturist, as such roots might be essential to the tree's health and stability.

The exposed soil must then be covered with a permeable geotextile membrane, laid out in accordance with the manufacturer's recommendations and temporarily held in place with pins, stakes or weights.

A three-dimensional Cellular Confinement System (CCS) will then be laid across the entire area and held in place. The CCS must be specified by the manufacturer or site engineer, and be suitable for the site and the loads that are expected to be applied. Soft soils may require an additional sub-base beneath the CCS for it to be effective.

The CCS will be filled with a 'no fines' aggregate to the manufacturer's specification, and lightly rolled or whacked to ensure cohesion. Any heavy plant or machinery used must be located outside of the RPA and beyond the canopy of any retained trees.

Kerbs and edgings that require excavations should be avoided. Where kerbing is required for light structures, above-ground peg and board edging is likely to be adequate. Where the use of standard kerbs is unavoidable, kerbs must be bridged over all significant roots to avoid the requirement to sever any roots over 25 mm in diameter, leaving space for future root growth.

If the new hard surfacing is not to be installed as the first construction operation on site, any exposed ground within the RPA must be protected until the hard surface is installed. This will generally be through the use of ground protection boards or protective fencing.

Works in Close Proximity to Tree Canopy

Various operations throughout the site will require plant and machinery to operate in close proximity to retained trees, in particular the installation of hard surfaces close to T012 and T023.

All operations close to retained trees must be carried out using the smallest available machinery that is appropriate for the task, located away from tree branches. Where booms, jibs, etc have the potential to come into contact with branches additional banks persons must be in place to ensure any contact is avoided.

Even minor contact with a tree can cause damage and result in branches falling or dying off. Where an operation cannot be carried out without interfering with the canopy of a retained tree, the advice of the project arboriculturist must be sought.

Installation of Utilities and Services

Where possible all above and below ground utilities and services are to be directed away from the retained trees. Above ground services should be routed away from tree canopies, allowing sufficient space to allow for likely future crown growth. Below ground services should be grouped together and routed away from the RPA of retained trees.

Any below ground utilities or services that must be routed through the RPA should be installed in accordance with BS 5837:2012 clause 7.7.2 and NJUG 10: Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees.

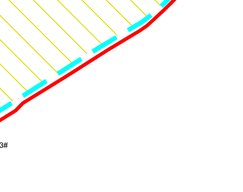
Additional Precautions

Consideration should be given to site operations outside of the CEZ that could indirectly impact the retained trees, including the provision of adequate space for site cabins, welfare facilities and other temporary structures.

Site operations should take sufficient account of wide or tall loads in order that they can operate without coming into contact with retained trees. The movement of plant in proximity to trees should be supervised by a banksman, to ensure adequate clearance from trees is maintained at all times.

Fires on sites should generally be avoided. Where fires are unavoidable, they should not be lit in a position where heat could affect the foliage or branches of retained trees. The potential size of a fire and the wind direction should be taken into account when determining its location, and it should be attended at all times.

Any materials that could contaminate the ground around tree roots, such as fuels, oils or cement, should be stored and handled well away from the outer edge of the RPA.



Arboricultural Site Supervision

Site monitoring and supervision by the project arboriculturist is likely to be required on a regular basis throughout the development. The specific site operations in close proximity of retained trees that will require supervision include:

- Tree removal and tree pruning works
- Installation of tree protection measures
- Installation of any service runs in proximity to retained trees

A minimum of one week's notice should be given to the supervising arboriculturist where possible before the start of any works within the RPA of retained trees, to allow the site visit to be scheduled.

All site visits will be recorded with the date and time along with any findings or comments relating to the tree protection measures and the specific operations supervised. These can be made available to the LPA tree officer on request.

GENERAL NOTES

- Refer to arboricultural report produced by Cura Terrae Ltd titled 'Frodsham Solar' – BS 5837:2012 Arboricultural Report, Impact Assessment and Method Statement'.
- Based on topographic survey provided by the client.
- Building layout and masterplan provided by the client.
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3RD-PARTY INFORMATION

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KEY

○ Stem Location

Location Estimated

Tree Categories (BS 5837:2012)

Category A Trees

Category B Trees

Category C Trees

Root Protection Area (RPA)

Tree Protection Fencing*

***See note on drawing**

BESS Sola

KEY PLAN (not to scale)

REV	DATE	DRAWN BY	CHECKED BY	REVISION COMMENT
01	15.04.25	AB	SR	CLIENT COMMENTS

The original version of the drawing was produced in colour. Monochrome copies should not be relied upon.

N

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Tel. (0114) 2669292
www.ecusltd.co.uk

Job: **24583 - Frodsham Solar**

Title: **Figure 5 - Arboricultural Method Statement(2)**

By	Date	Scale @ A0	Drg. no.
AB	Mar 2025	1:2000	24583-ARB-03

General

This Arboricultural Method Statement (AMS) details the specific measures to be adopted to ensure that the retained trees are suitably protected for the duration of the proposed development.

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Sequence of Events

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- Pre-commencement site meeting
- Tree works
- Installation of tree protection measures
- Construction operations including the *installation of hard surfaces* within the RPA of retained trees
- Removal of tree protection measures

Pre-Commencement Site Meeting

A pre-commencement site meeting should take place prior to any works being started, to finalise plans for the layout of the tree protection measures and to ensure that all potential issues are adequately considered.

The site developer and the project arboriculturist should be in attendance for the meeting. It may also be a requirement for the LPA tree officer to attend and so prior notification of the meeting should be provided to the LPA.

Tree Works

Prior to the commencement of any development operations and the storage of plant, machinery and materials on site, any required tree works should be carried out. The trees to be removed and any pruning works that are required to facilitate the development are detailed in the Tree Survey Schedule at Appendix 1 of the associated arboricultural report.

All tree works should be carried out by a suitably qualified and insured arboricultural contractor and in accordance with the recommendations of BS 3998:2010 Tree work – Recommendations.

It is recommended that trees should be checked in advance of any works by a suitably qualified ecologist to ensure there is no disturbance to nesting birds or roosting bats.

Tree Protection Fencing

Prior to the commencement of any development operations and the storage of plant, machinery and materials on site the tree protective fencing should be located as shown. Where possible this fencing should exclude all site activities from the RPA of retained trees, creating a sacrosanct Construction Exclusion Zone (CEZ).

It should be confirmed by the project arboriculturist that the fencing has been correctly set out on site, prior to the commencement of any other operations.

The default specification for tree protection fencing is shown here. However, where the site circumstances and associated risk of damaging incursion into the RPA do not necessitate the default level of protection, an alternative specification should be prepared by the project arboriculturist and, where relevant, agreed with the local planning authority.

An example of an alternative specification is 2 m tall welded mesh panels on rubber or concrete feet. In such cases, the fence panels should be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The distance between the fence couplers should be at least 1 m and should be uniform throughout the fence. The panels should be supported on the inner side by stabilizer struts, which should be attached to a base plate secured with ground pins or mounted on a block tray.

All-weather notices should be attached to the fencing to indicate that operations are not permitted within the CEZ, with words such as "CONSTRUCTION EXCLUSION ZONE – NO ACCESS".

Once the tree protection fencing has been installed it should not be altered or removed without prior consultation with the project arboriculturist. If the tree protection fencing needs to be re-positioned to allow for development operations to continue, this must be carried out under the supervision of the project arboriculturist and with prior consent from the LPA.

The tree protective fencing must remain in place until all construction operations on site have been completed and all plant and machinery has been removed.

Installation of Hard Surfaces

New hard surfaces are proposed within the RPA of the retained hedgerows H003, H006, H007, H012, H013, H016, H018, H019, H022, H024, H026, H027, H028, H029, H030, H032 and groups G094 and G097. To ensure any roots that may be present are suitably protected throughout construction, the hard surface must be installed in line with the following no-dig methodology:

Significant excavations shall not occur within the RPA, however the removal of surface vegetation is allowed, to a maximum depth of 50 mm.

If any individual roots become exposed that are smaller than 25 mm diameter they may be pruned back, making a clean cut with a suitable sharp tool. Roots occurring in clumps or of 25 mm diameter and over should be retained where possible and worked around. Where severance of these roots is unavoidable, this should only be carried out following consultation with the project arboriculturist, as such roots might be essential to the tree's health and stability.

The exposed soil must then be covered with a permeable geotextile membrane, laid out in accordance with the manufacturer's recommendations and temporarily held in place with pins, stakes or weights.

A three-dimensional Cellular Confinement System (CCS) will then be laid across the entire area and held in place. The CCS must be specified by the manufacturer or site engineer, and be suitable for the site and the loads that are expected to be applied. Soft soils may require an additional sub-base beneath the CCS for it to be effective.

The CCS will be filled with a 'no fines' aggregate to the manufacturer's specification, and lightly rolled or whacked to ensure cohesion. Any heavy plant or machinery used must be located outside of the RPA and beyond the canopy of any retained trees.

Kerbs and edgings that require excavations should be avoided. Where kerbing is required for light structures, above-ground peg and board edging is likely to be adequate. Where the use of standard kerbs is unavoidable, kerbs must be bridged over all significant roots to avoid the requirement to sever any roots over 25 mm in diameter, leaving space for future root growth.

If the new hard surfacing is not to be installed as the first construction operation on site, any exposed ground within the RPA must be protected until the hard surface is installed. This will generally be through the use of ground protection boards or protective fencing.

Works in Close Proximity to Tree Canopy

Various operations throughout the site will require plant and machinery to operate in close proximity to retained trees, in particular the installation of hard surfaces close to T012 and T023.

All operations close to retained trees must be carried out using the smallest available machinery that is appropriate for the task, located away from tree branches. Where booms, jibs, etc have the potential to come into contact with branches additional banks persons must be in place to ensure any contact is avoided.

Even minor contact with a tree can cause damage and result in branches falling or dying off. Where an operation cannot be carried out without interfering with the canopy of a retained tree, the advice of the project arboriculturist must be sought.

Installation of Utilities and Services

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Any below ground utilities or services that must be routed through the RPA should be installed in accordance with BS 5837:2012 clause 7.7.2 and NJUG 10: Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees.

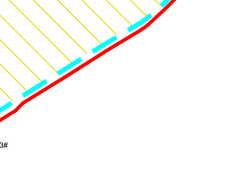
Additional Precautions

Consideration should be given to site operations outside of the CEZ that could indirectly impact the retained trees, including the provision of adequate space for site cabins, welfare facilities and other temporary structures.

Site operations should take sufficient account of wide or tall loads in order that they can operate without coming into contact with retained trees. The movement of plant in proximity to trees should be supervised by a banksman, to ensure adequate clearance from trees is maintained at all times.

Fires on sites should generally be avoided. Where fires are unavoidable, they should not be lit in a position where heat could affect the foliage or branches of retained trees. The potential size of a fire and the wind direction should be taken into account when determining its location, and it should be attended at all times.

Any materials that could contaminate the ground around tree roots, such as fuels, oils or cement, should be stored and handled well away from the outer edge of the RPA.



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KEY

○ Stem Location

Location Estimated

Tree Categories (BS 5837:2012)

Category A Trees

Category B Trees

Category C Trees

Root Protection Area (RPA)

Tree Protection Fencing*

***See note on drawing**

BESS Sola

KEY PLAN (not to scale)

REV	DATE	DRAWN BY	CHECKED BY	REVISION COMMENT
01	15.04.25	AB	SR	CLIENT COMMENTS

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Job: **24583 - Frodsham Solar**

Title: **Figure 5 - Arboricultural Method Statement(2)**

By	Date	Scale @ A0	Drg. no.
AB	Mar 2025	1:2000	24583-ARB-03

General

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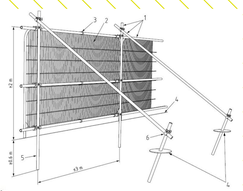

Key
1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

Installation of Hard Surfaces

New hard surfaces are proposed within the RPA of the retained hedgerows H003, H006, H007, H012, H013, H016, H018, H019, H022, H024, H026, H027, H028, H029, H030, H032 and groups G094 and G097. To ensure any roots that may be present are suitably protected throughout construction, the hard surface must be installed in line with the following no-dig methodology:

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Arboricultural Site Supervision

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The peninsula at the confluence of the Manchester Ship Canal and River Weaver was surveyed but has been omitted as no relevant survey data was present.

BESS / Frodsham Solar Substation (Option 2)

GENERAL NOTES

- Refer to arboricultural report produced by Cura Terrae Ltd titled 'Frodsham Solar – BS 5837:2012 Arboricultural Report, Impact Assessment and Method Statement'.
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KEY

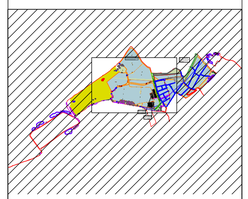
Stem Location
Location Estimated

Tree Categories (BS 5837:2012)

Category A Trees
Category B Trees
Category C Trees

Root Protection Area (RPA)
Tree Protection Fencing*
No-Dig Construction*

***See note on drawing**



KEY PLAN (not to scale)

REV	DATE	DRAWN BY	CHECKED BY	REVISION COMMENT
02	15.04.25	AB	SR	CLIENT COMMENTS
01	31-03-25	AB	SR	Partial Renumber

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Saville Street East
Sheffield S4 7UQ
Tel. (0114) 2659292
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Job
24583 - Frodsham Solar

Title
Figure 5 - Arboricultural Method Statement(3)

By	Date	Scale @ A0	Drg. no.
AB	Mar 2025	1:2000	24583-ARB-03

N

General

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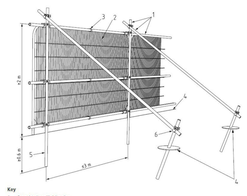

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Any materials that could contaminate the ground around tree roots, such as fuels, oils or cement, should be stored and handled well away from the outer edge of the RPA.

Arboricultural Site Supervision

Site monitoring and supervision by the project arboriculturist is likely to be required on a regular basis throughout the development. The specific site operations in close proximity of retained trees that will require supervision include:

- Tree removal and tree pruning works
- Installation of tree protection measures
- Installation of any service runs in proximity to retained trees

A minimum of one week's notice should be given to the supervising arboriculturist where possible before the start of any works within the RPA of retained trees, to allow the site visit to be scheduled.

All site visits will be recorded with the date and time along with any findings or comments relating to the tree protection measures and the specific operations supervised. These can be made available to the LPA tree officer on request.

GENERAL NOTES

- Refer to arboricultural report produced by Cura Terrae Ltd titled 'Frodsham Solar' – BS 5837:2012 Arboricultural Report, Impact Assessment and Method Statement'.
- Based on topographic survey provided by the client.
- Building layout and masterplan provided by the client.
- Refer to Engineer's details for level and drainage information.
- Check all dimensions on site.
- Do not scale from this drawing.
- Report any discrepancies and omissions to Cura Terrae Ltd
- This drawing is Copyright.

3RD-PARTY INFORMATION
NB This drawing includes information provided by independent surveyors and / or consultants, to whom all queries shall be made. Cura Terrae Ltd can accept no liability for its context or accuracy.

KEY

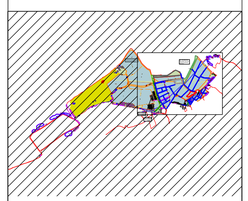
Stem Location
Location Estimated

Tree Categories (BS 5837:2012)

Category A Trees
Category B Trees
Category C Trees

Root Protection Area (RPA)
Tree Protection Fencing*
No-Dig Construction*

***See note on drawing**



KEY PLAN (not to scale)

REV	DATE	DRAWN BY	CHECKED BY	REVISION COMMENT
'02	15.04.25	AB	SR	CLIENT COMMENTS
01	31-03-25	AB	SR	Partial Renumber

CuraTerrae
Unit 4 President Buildings
Saville Street East
Sheffield S4 7UQ
Tel. (0114) 2669292
www.ecusltd.co.uk

Job
24583 - Frodsham Solar

Title
Figure 5 - Arboricultural Method Statement(4)

By	Date	Scale @ A0	Drg. no.
AB	Mar 2025	1:2000	24583-ARB-03

N

Appendix 3: Suffolk County Council Ash Die Back Canopy Description

Ash Tree Assessment

The Issue

Identifying the symptoms of Ash Dieback in large trees can be difficult, so a sysyem was needed to enable easy description of the current state of as Ash Tree. Tree Canopy assessment has been widely used since the late 1980's across Europe based on work produced in Switzerland in 1986. In 1990 the Forestry Commission produced a book – 'Assessment of Tree Condition' to enable a standard system for describing the condition of a tree based on the percentage of existing canopy remaining.

Using this methodology Suffolk County Council undertook to describe the health of an Ash in Suffolk.

The steps undertaken

During the summer of 2013/14 Suffolk County Council assessed and photographed Ash accross the county. They determined that there were 4 useful categories to describe Ash canopies. The categories chosen were

- 100% full canopy,
- 75% canopy,
- 50% canopy
- and 25% canopy.

These are represented photographically in the pictures at the end of this Case Study.

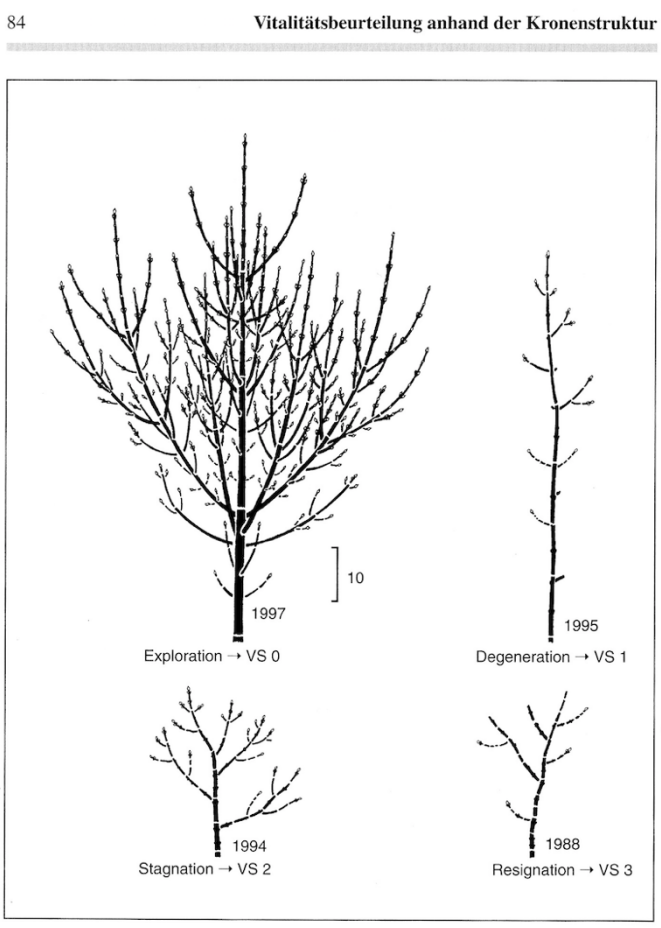
These 4 classes fit with work undertaken in Germany by Professor Andreas Roloff who has been describing the state of vitality of European Trees. He also uses 4 categories – described as

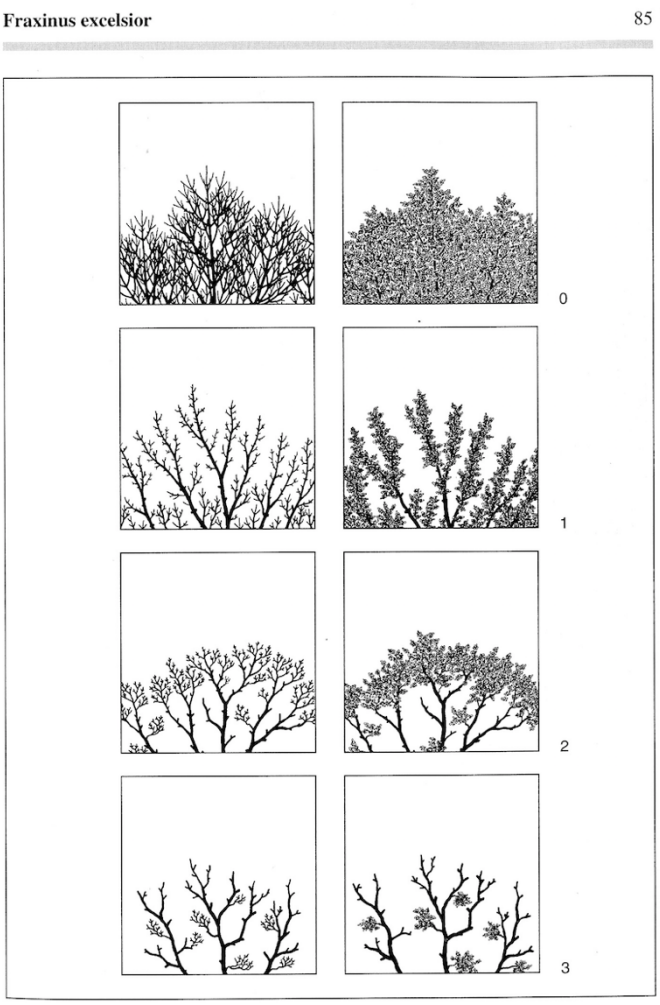
- Vitality Class 0: Healthy vigorous trees showing treetop shoots in the exploration phase: both the main axes and part of the lateral twigs consist of long-shoots. For this reason, a regular net-like branching pattern is developed, which reaches deep into the interior of the crown. The crowns are equally closed and domed, and do not show any greater gap unless a stronger intervention has occurred, such as pruning measures, because such a gap is closed quickly by the intensive ramification. In summer, a dense foliage arises without any greater gap.
- Vitality Class 1: Weakened trees show treetop shoots in the degeneration phase. Thus, spears/"fox tails" are formed, rising above the canopy. The leaves on these spears are dense and grow all around them (at the top of the lateral short-shoots or shortshoot chains). The crowns make a frazzled impression on the outside, and have a fastigiated appearance, because the airspace between the spears is not completely filled by leaves and twigs, and the crown has a spiky outline. Inside the crown, the branching pattern, and hence the foliage, is quite dense. In this vitality class, straight percurrent main axes of the treetop branches are still dominant, but the crowns no longer look as intact as in class 0 because of the spears shooting out of the canopy.
- Vitality Class 2: In obviously less vigorous trees, the treetop shoots begin to build short-shoots in the stagnation phase. The leafless state could be designated as the claw stage, because the short-shoot chains in the outside of the crowns grow longer, are predominant, and stretch claw-like to the light. These short-shoot chains, growing too long, break off in summer in thunderstorms and heavy rains, and strew the forest floor in

declining stands. Under normal circumstances, trees get rid of parts of their unimportant twigs in the inner and lower crown parts in this way. However, if the treetop shoots themselves are declining, the self-pruning of twigs progresses into the outskirts of the crown, and the crowns become thin from the inside outwards. The cause for this occurrence is not premature leaf fall, but broken short-shoot chains, a lack of shoots, and dead buds and twigs. The branching pattern shows a bushy and lumpy accumulation in the periphery of the crown. This accumulation causes summer and winter bushy crown structures and greater gaps. The crown periphery still has hardly any straight percurrent branches.

- Vitality class 3:, In considerably damaged or declining trees of the crowns finally fall apart by the breaking off of larger branches and the dieback of whole crown parts. The tree seems to consist only of more or less surplus sub-crowns, dispersed randomly in the airspace and forming whip-like structures. The treetop is often dying back or is already dead, because the treetop shoots grew in the retraction phase.

These 4 vitality classes are shown below for Ash.





The work in Germany and Suffolk complements each other and establishes the ability to be able to assisgn an ash tree to 1 of 4 categories, which describe the trees current health or vitality. This is a simple and useful method for describing the current state of an Ash's heatlh.

The Outcome

Using this 4 category framework, allows a tree to be assigned to a category, showing its current state of health, enabling data on the tree to be collected. The suggestion going forward is that these 4 classes are used as described as:

Ash Health Class 1 – 100 – 75% Canopy (Vitality Class 0)

Ash Health Class 2 – 75% -50% Canopy (Vitality Class 1)

Ash Health Class 3 – 50% - 25% Canopy (Vitality Class 2)

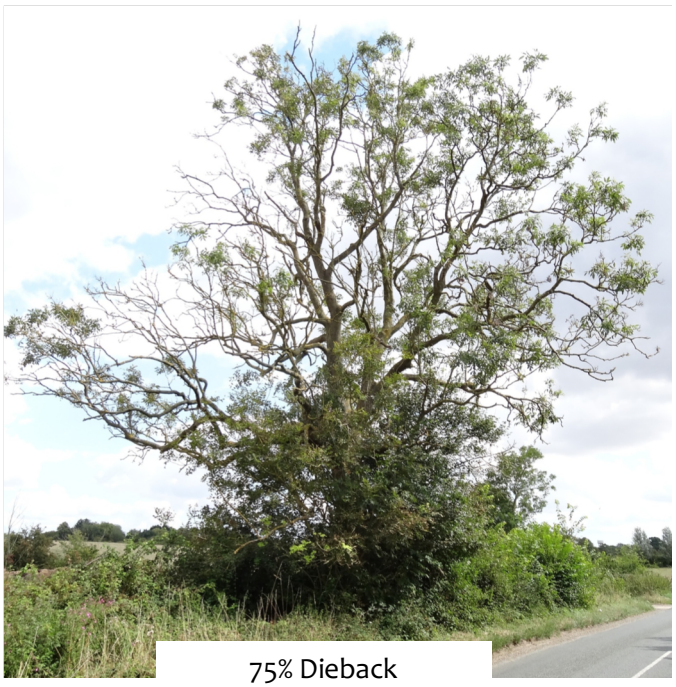
Ash Health Class 4 – 25% - 0% Canopy (Vitality Class 3)

Figure 1: Photos of Dieback of ash trees

0% Dieback - Healthy Crown

25% Dieback

50% Dieback



75% Dieback