



The Bridgeway Centre Wrexham Industrial Estate

Arboricultural Impact Assessment and Method Statement

Report Ref: 197/R/400

November 2024

The Bridgeway Centre Wrexham Industrial Estate Arboricultural Impact Assessment and Method Statement

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Version P02

November 2024

Prepared by:

Marianne Dobson CMLI, BA Hons, FdScArb, MARborA

Lantra certified in Professional Tree Inspection

Landscape Architect and Arboricultural Consultant

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6 Kinderton Close

High Legh

Knutsford

Cheshire

WA16 6LZ

Document Issue and Revision Information

Revision	Date	Details	Status	Author	Check	Review
P01	03/06/2024	Arboricultural Impact Assessment and Method Statement	First issue	Marianne Dobson		Marianne Dobson
P02	06/11/2024	Arboricultural Impact Assessment and Method Statement	Second issue	Marianne Dobson		Marianne Dobson



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EXECUTIVE SUMMARY

1. This report has been produced to detail the arboricultural impacts of proposed development for new units at The Bridgeway Centre, Wrexham Industrial Estate.
2. A tree survey has been carried out and the tree data schedule and plan have been produced for the site reference 197/T/050, 100, 102, 103.
3. Based on an objective assessment of the trees, groups of trees, woodland and hedges made in accordance with *BS5837:2012 Trees in relation to design, demolition and construction – Recommendations*, a total of 32 individual trees were surveyed, 11 groups of trees, one woodland and five hedges (308.6m). Five category A trees (four oak and one field maple) and one woodland were recorded. The features fall within category A, B, C and U of the BS5837:2012 cascade chart for tree categories.
4. Correspondence with Wrexham County Borough Council, has identified no Tree Preservation Orders (TPO) at the site and no Conservation Areas are affected by the proposals.
5. Some trees were observed to have arboricultural features suitable for bats and a separate ecological inspection has been undertaken. The capacity of any trees potentially affected by the works to support roosting bats, should be confirmed by an Ecologist prior to undertaking tree works. The trees also provide nesting opportunities for birds and any tree works should occur between September to February to avoid the nesting and breeding bird season from March to August inclusive.
6. A total of nine individual trees, nine groups of trees and four hedges totalling 194.2m would be removed to facilitate the works within both the outline and detailed application areas.
7. Tree protection will be required to demarcate a Construction Exclusion Zone (CEZ) around trees to be retained prior to site establishment and commencement of construction. This will take the form of temporary tree protection fencing and permanent ground protection to confine site access and avoid detrimental impact on the retained trees.
8. A proposal for replacement planting and habitat enhancement has been developed, reference 197/LAND/L/100 Landscape and Biodiversity Proposals Plan, which includes 97 select standard trees and 570m native species hedgerow to mitigate for the vegetation removed within both the outline and detailed application areas.
9. This assessment considers potential impacts based on the proposed construction and is valid for two years from the date of the report. Changes to trees can occur as a result of natural processes and disease, as well as the influences of development, therefore regular tree inspections at least every two years are recommended to monitor the health and condition of the groups and individual trees.

1 INTRODUCTION

1.1 Scope of assessment

- 1.1.1 MDLandscape have been commissioned by FI-REM to undertake an Arboricultural Impact Assessment (AIA) and Arboricultural Method Statement (AMS) of a proposed development at The Bridgeway Centre, Wrexham Industrial Estate. It has been compiled to help ensure the successful retention of mature high value trees on site during the proposed construction of development, and details the arboricultural impact to the trees, groups of trees, woodland and hedgerows, proposed protection measures and mitigation.
- 1.1.2 Tree surveys at the site were conducted in February 2022 by M Dobson (FdScArb, MArborA, Lantra certified Professional Tree Inspector) in accordance with *BS5837:2012 Trees in relation to design, demolition and construction – Recommendations*.
- 1.1.3 A topographical survey ref 9980_T was available at time of survey and has been used to verify tree positions and crown spread. The drawing is included in Figure 2.0 at the end of this report. Several trees were recorded on site that were not picked up on the topographical survey and the stem locations were estimated.
- 1.1.4 This report includes:
- The tree data schedule and constraints plan for trees present within the survey and assessment area;
 - An assessment of trees and impacts on trees in relation to development and requirements for protection during construction; and
 - Recommendations for tree removal, retention and management.
- 1.1.5 This report should be read in conjunction the following arboricultural reports and drawings and relevant ecology reports by UES Ltd:
- Tree Constraints Plans 197/T/050, 100, 101, 102 and Tree Constraints Report 197/R/100;
 - Arboricultural Impact Assessment Tree Removal Plan 197/AIA/T/200;
 - Arboricultural Method Statement Tree Works Plan 197/AMS/T/300;
 - Arboricultural Method Statement Tree Protection Plan 197/AMS/T/400; and
 - Arboricultural Method Statement Proprietary Tree Protection Measures 197/AMS/T/500.

2 THE SITE AND SURROUNDINGS



Figure 1.0 Site location, ancient Semi-Natural Woodland in green hatch - Contains ordnance survey data OS Maps: (ordnancesurvey.co.uk)

- 2.1.1 The survey area is located on land centred on SJ 37756 49329 at the Bridgeway Centre, De Fford Y Bont / Bridge Road, Wrexham. The site is an industrial estate with established designed planting areas, hedges and mature trees. The mature trees are former field and hedgerow trees in an area historically used for agriculture between Redwither Lane to the north and River Clywedog to the south but which has been a trading estate for at least seventy years¹.
- 2.1.2 The survey area includes land shown in figure 1.0 and trees and hedges were recorded. The trees surveyed included hawthorn, oak, silver birch, field maple, sycamore, ash, whitebeam, silver bark maple, Western red cedar, crack willow, ornamental and wild cherry, blackthorn, beech, Scot's pine and rowan.
- 2.1.3 The tree population within the survey area has a moderate amenity and landscape value overall with some areas and individual trees of high value. W1 in particular to the north of the site boundary has high value in the landscape and as wildlife habitat.

¹ Denbighshire Sheet XXIX.SW, Revised: 1949, Published: 1954, National Library of Scotland

- 2.1.4 All trees over 75mm stem diameter at breast height (DBH) and potentially impacted by development, were surveyed.

2.2 The Development Proposals

- 2.2.1 The AIA and AMS have been prepared in relation to a planning application for redevelopment of The Bridgeway Centre, with new unit layout, parking and soft landscaping. The design has been developed to ensure mature oak trees at the site are retained. Consultation with Wrexham County Borough Council and several design iterations has resulted in the retention of trees and groups to the south frontage of the site.
- 2.2.2 The proposed site layout is shown on figure 8.0, planning application drawing 1182-02-002.
- 2.2.3 An enquiry to the Council to confirm Tree Preservation Order (TPO) status was made on 3.6.2024. Confirmation has been received that there are no TPO at the site and the survey area is not within a conservation area.

2.3 Ancient Woodland, Veteran and Ancient Trees

- 2.3.1 An examination of the DataMapWales Ancient Woodland Inventory 2021 on 3/6/2024² confirms there is no ancient woodland within the survey area. However, there is a tract of Ancient Semi Natural Woodland (ASNW) to the west of the site, as shown in figure 1.0. The ASNW is not affected by the development proposals. There is no comprehensive national register of veteran trees, however, an examination of the Woodland Trust Ancient Tree Inventory³ confirms there are no recorded veteran trees at the site or immediate vicinity.

2.4 Protected Species

- 2.4.1 Trees and hedges are a potential habitat for nesting birds and roosting habitat for bats, both of which are protected under the *Wildlife and Countryside Act 1981* (as amended) and certain species under the *Conservation of Species and Habitat Regulations 2010*. This makes it an offence to intentionally or recklessly, damage or destroy an active birds' nest.
- 2.4.2 Several trees within the survey boundary may be suitable habitat for nesting birds and roosting habitat for bats, therefore all trees should be inspected for the absence or presence of nesting bird activity or presence of bats, before removal or major pruning work is carried out. A qualified Ecologist should be appointed to ensure a preliminary ecological assessment is undertaken.

² DataMapWales [Ancient Woodland Inventory 2021](#) | [DataMapWales \(gov.wales\)](#)

³ Ancient Tree Inventory [How to record ancient trees - Ancient Tree Inventory \(woodlandtrust.org.uk\)](#)

3 PLANNING CONSIDERATIONS

3.1 Planning Policy

- 3.1.1 In addition to statutory designations and protection, the planning system also confers importance on trees and woodland in the context of potential development. The Planning Policy Wales document⁴ states a number of policies relating to trees and benefits of trees in design, specifically relating to green infrastructure (paragraph 6.2), trees, woodlands and hedgerows in paragraphs 6.4.37 to 6.4.44:

Trees, Woodlands and Hedgerows

6.4.37 Trees, hedgerows, groups of trees and areas of woodland are of great importance for biodiversity. They are important connecting habitats for resilient ecological networks and make an essential wider contribution to landscape character, culture, heritage and sense of place, air quality, recreation and local climate moderation. They also play a vital role in tackling the climate emergency by locking up carbon, and can provide shade, shelter and foraging opportunities, wider landscape benefits such as air and diffuse pollution interception, natural flood management, and building materials. The importance of trees, in particular urban trees, in creating distinctive and natural places which deliver health and well-being benefits to communities, now and in the future should be promoted as part of plan making and decision taking. Planning authorities must promote the planting of new trees, hedgerows, groups of trees and areas of woodland as part of new development.

6.4.38 Welsh native tree and hedge species, characteristic of the local area, provide a strong ecosystem resilience function, and they provide resources for local wildlife, particularly other native plants and species. Native tree and hedge species can also complement opportunities for natural regeneration. Alongside broader woodland habitat types, such as wood pasture, parkland and traditional orchards, native tree and hedge species help to define our cultural heritage and landscape, creating a strong sense of place and connection to the past.

6.4.39 Planning authorities must protect trees, hedgerows, groups of trees and areas of woodland where they have ecological value, contribute to the character or amenity of a particular locality, or perform a beneficial green infrastructure function. Planning authorities should consider the importance of trees and woodland, particularly native woodland and valued trees, and should have regard to local authority tree strategies or SPG and the Green Infrastructure Assessment. Planning authorities should adopt appropriate, locally relevant, time sensitive, minimum tree canopy cover targets for their authority area to guide the protection and where appropriate the expansion of canopy cover. The Green Infrastructure Assessment and tools such as NRW's Tree Cover in Wales' Towns and Cities study and Forest

⁴ Planning Policy Wales, Edition 12, February 2024 Welsh Government [Planning Policy Wales - Edition 12 \(gov.wales\)](https://gov.wales/planning-policy-wales)

Research's i-Tree Eco tool will help establish a baseline of canopy cover and guide the identification of appropriate and measurable canopy targets.

6.4.40 Where trees, woodland and hedgerows are present, their retention, protection and integration should be identified within planning applications. Where surveys identify trees, hedgerows, groups of trees and areas of woodland capable of making a significant contribution to the area, these trees should be retained and protected. The provision of services and utilities infrastructure to the application site should also avoid the loss of trees, woodlands or hedges and must be considered as part of the development proposal; where such trees are lost, they will be subject to the replacement planting ratios set out below.

6.4.41 Whilst most focus within the planning system is targeted at urban trees, planning authorities should recognise the importance of trees within the countryside, either as woodlands, within hedgerows and hedgebanks, or free-standing trees in fields, or as wood pasture. This is particularly important as the effects of climate change are leading towards pests and diseases that are damaging many of our native species in the rural landscape. Positive mechanisms of rural tree retention should be considered, and measures taken to replace them in an effective and economic manner, either with new planting or by allowing them to grow to their full potential.

6.4.42 Permanent removal of trees, woodland and hedgerows will only be permitted where it would achieve significant and clearly defined public benefits. Where individual or groups of trees and hedgerows are removed as part of a proposed scheme, planning authorities must first follow the step-wise approach as set out in paragraph 6.4.15. Where loss is unavoidable developers will be required to provide compensatory planting (which is proportionate to the proposed loss as identified through an assessment of green infrastructure value including biodiversity, landscape value and carbon capture). Replacement planting shall be at a ratio equivalent to the quality, environmental and ecological importance of the tree(s) lost and this must be preferably onsite, or immediately adjacent to the site, and at a minimum ratio of at least 3 trees of a similar type and compensatory size planted for every 1 lost. Where a woodland or a shelterbelt area is lost as part of a proposed scheme, the compensation planting must be at a scale, design and species mix reflective of that area lost. In such circumstances, the planting rate must be at a minimum of 1600 trees per hectare for broadleaves, and 2500 trees per hectare for conifers. The planting position for each replacement tree shall be fit to support its establishment and health, and ensure its unconstrained long-term growth to optimise the environmental and ecological benefits it affords.

6.4.43 Ancient woodland, semi-natural woodlands, individual ancient, veteran and heritage trees and ancient hedgerows are irreplaceable natural resources, and have significant landscape, biodiversity and cultural value. Such trees, woodlands and hedgerows are to be afforded protection from development which would result in their loss or deterioration unless



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very exceptionally there are significant and clearly defined public benefits; this protection must prevent potentially damaging operations and their unnecessary loss. In the case of a site recorded on the Ancient Woodland Inventory, authorities should consider the advice of NRW. Planning authorities should also have regard to the Ancient Tree Inventory, work to improve its completeness and use it to ensure the protection of trees and woodland and identify opportunities for more planting as part of the Green Infrastructure Assessment, particularly in terms of canopy cover.

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



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4 TREE POPULATION AND CONDITION

4.1 Tree species and population

- 4.1.1 The tree population within the survey area is a mixture of designed planting, mature trees relating to historic field boundaries and hedges. There is a varied age class of trees within the survey area, diversity of species and condition as detailed in the tree survey data sheets in Appendix 1 and as illustrated in the photographic record in Appendix 2. There are a number of mature oak present that are prominent in the landscape, of which four are considered to be category A. Although two of the oak are under pressure from the current land use, it is possible to provide immediate protection of these trees to ensure their longevity and continued contribution.
- 4.1.2 A total of 32 individual trees were surveyed, 11 groups of trees, one woodland and five hedges as noted in the summary table, Table 2. Five category A trees (four oak and one field maple) and one woodland were recorded. The majority of trees, groups, woodland and hedge features are to the periphery of the built development. Many of the areas of vegetation provide screening of the buildings from roads and maintain habitat connections to the wider area. The majority of planting includes native species, with occasional cultivated specimens present.
- 4.1.3 The trees are in fair to good condition overall, however no regular arboricultural or woodland management is evident. A detailed description of the woodland, groups of trees, individual trees and hedgerows is given in the Tree Constraints Report 197/R/100.
- 4.1.4 During the assessment, the overall tree population, composition of groups and woodland, arboricultural, landscape and conservation qualities have been considered. A full description of the groups of trees and individual trees, is given in the tree data schedule in Appendix 1 and is not repeated in the body of the report. The woodland was not inspected in detail as it was outside the survey area, but is included for context.

4.2 Categorisation and value

- 4.2.1 Trees, groups of trees and woodland compartment within the survey area have been identified within categories A, B, C and U.
- 4.2.2 The trees surveyed are detailed in the tree data schedule in Appendix 1. Photographs of notable trees, groups, woodland and general character of the site vegetation are illustrated in the Tree Constraints Report 197/R/100.
- 4.2.3 A summary of the cascade chart for tree categories is given below. The full table is included within the Tree Constraints Report.
- Category A Trees of high value including those that are particularly good examples of their species and/or those that have visual importance or significant conservation or other value.

- Category B Trees of moderate value including those that do not qualify as Category A due to impaired condition and/or those that collectively have higher value than they would as individuals; also trees with material conservation or other value.
- Category C Trees of low value including those with very limited merit or impaired condition; trees offering transient or temporary landscape benefits.
- Category U Trees with irremediable defects and anticipated early loss due to collapse; dead trees or those in immediate decline and those with infectious pathogens that threaten other trees.

4.2.4 A summary of the baseline of the existing tree and hedgerow population is given in Table 1.0 below:

	CATEGORY A High quality		CATEGORY B Moderate quality		CATEGORY C Low quality		CATEGORY U Unsuitable for retention		HEDGEROW (Not categorised under BS5837:2012; formal hedgerow survey not undertaken)	
FEATURE	Quantity	Area of crown/ canopy spread (m ²)	Quantity	Area of crown/ canopy spread (m ²)	Quantity	Area of crown/ canopy spread (m ²)	Quantity	Area of crown/ canopy spread (m ²)	Quantity	Total length (m)
TREE	5	907.0242	12	873.6401	14	544.7337		0		
GROUP	0	0	5	1028.1191	7	599.1385		0		
WOODLAND	1	not part of survey	included for context	0	0	0		0		
HEDGEROW									5	308.6
TOTAL	6	907.0242	17	1901.7592	21	1143.8722		0	5	308.6

Table 1.0 Baseline of the existing tree and hedgerow population, by quantity of features, BS5837:2012 category rating and as a measure of canopy/crown cover.

5 ARBORICULTURAL IMPACTS OF THE PROPOSED DEVELOPMENT

5.1 Trees to be removed to facilitate development

- 5.1.1 The proposed site layout including the soft landscape and habitat enhancement proposals, has been overlaid onto the Tree Constraints Plan to identify the potential impact of the permanent works on existing trees.
- 5.1.2 Hedgerows have not been afforded a quality category rating, as they do not fall within the scope of BS5837:2012, but their composition, height, width, approximate age and condition are noted in the survey data schedule.

5.2 Impacts as a result of tree removal

- 5.2.1 A total of nine individual trees would be removed to facilitate the works. Nine groups of trees would be removed and four lengths of hedgerow totalling 194.2m would be removed.

IMPACT OF DEVELOPMENT AND EFFECTS ON THE TREE AND HEDGEROW POPULATION	CATEGORY A High quality		CATEGORY B Moderate quality		CATEGORY C Low quality		CATEGORY U Unsuitable for retention		HEDGEROW (Not categorised under BS5837:2012; formal hedgerow survey not undertaken)	
	Quantity Removed	Area of crown/canopy spread removed (m ²)	Quantity Removed	Area of crown/canopy spread removed (m ²)	Quantity Removed	Area of crown/canopy spread removed (m ²)	Quantity Removed	Area of crown/canopy spread removed (m ²)	Quantity removed	Total length removed (m)
TREE	0		3	184.9773	6	240.4047	0			
GROUP	0		4	747.3908	5	484.7156	0			
WOODLAND	0		0	0	0	0	0			
HEDGEROW									4	194.2
TOTAL	0		7	932.3681	11	725.1203	0		4	194.2

Table 2.0 Impact of development and effects on the tree and hedgerow population.

- 5.2.2 The impact of the tree losses will be most noticeable from Coed Aben Road and Bridge Road. Trees to the east of the site with Coed Aben Road and category A oaks would be retained.

5.2.3 Features over 75mm DBH requiring removal and proposed tree works are shown in Table 3.0⁵ on the following pages.

Tree ref	Species	Stem dia.	BS5837 Tree Quality Category	Radius of RPA	Affected by development	Proposed works
T - individual G - group W - Woodland H - Hedgerow	Latin name	mm	A, B, C, U	m		
	Common name		(1,2,3)			
HEDGES						
H1	Crataegus monogyna (hawthorn)				No	Retain and protect
H2	Prunus laurocerasus (Cherry laurel)				Yes	Hedge to be removed
H3	Ligustrum vulgare (wild privet)				Yes	Hedge to be removed
H4	Crataegus monogyna (hawthorn)				Yes	Hedge to be removed
H5	Taxus baccata (yew)				Yes	Hedge to be removed
TREES, GROUPS AND WOODLAND						
T1	Prunus sp. (ornamental cherry)	240	C1	2.88	No	Retain and protect
T2	Prunus sp. (ornamental cherry)	380	B2	4.56	No	Retain and protect
T3	Prunus cerasifera (cherry plum)	330	B2	3.96	No	Retain and protect
T4	Acer pseudoplatanus (sycamore)	330	C2	3.96	No	Retain and protect
T5	Betula pendula (silver birch)	310	B2	3.72	No	Retain and protect
T6	Acer pseudoplatanus (sycamore)	310	C2	3.72	No	Retain and protect
T7	Prunus sp. (ornamental cherry)	270	C2	3.24	No	Retain and protect
T8	Prunus sp. (ornamental cherry)	170	C1	2.04	No	Retain and protect
T9	Quercus robur (English oak)	620	B1	7.44	No	Retain and protect
T10	Prunus cerasifera (cherry plum)	150	C1	1.8	No	Retain and protect
T11	Betula pendula (silver birch)	300	B2	3.6	No	Retain and protect
T12	Acer pseudoplatanus (sycamore)	360	B2	4.32	No	Retain and protect

⁵ Refer to the tree survey data schedules for further information.

Tree ref	Species	Stem dia.	BS5837 Tree Quality Category	Radius of RPA	Affected by development	Proposed works
T - individual G - group W - Woodland H - Hedgerow	Latin name	mm	A, B, C, U	m		
	Common name		(1,2,3)			
T13	Betula pendula (silver birch)	410	B2	4.92	No	Retain and protect
T14	Acer pseudoplatanus (sycamore)	140	C1	1.68	No	Retain and protect
G1	Thuja plicata (Western red cedar)		C2	see plan	Yes	Group to be removed
T15	Betula pendula (silver birch)	290	B2	3.48	No	Retain and protect
T16	Acer pseudoplatanus (sycamore)	230	C1	2.76	No	Retain and protect
T17	Prunus 'Kanzan'	330	C2	3.96	No	Retain and protect
T18	Quercus robur (English oak)	870	B3	10.44	Yes	Works to be carried out under an arboricultural watching brief - Road to be extended to accommodate new layout; road construction to consist of no-dig geocell construction; arboricultural watching brief for works within RPA;
T19	Thuja plicata (Western red cedar)		C2	see plan	Yes	Tree to be removed
G2	Salix fragilis (crack willow)		C3	see plan	Yes	Group to be removed
W1	Quercus robur (English oak)		A2	see plan	Yes	Woodland will be retained and protected behind existing fence
	Prunus avium (wild cherry)					An arboricultural watching brief will be required for excavation for foundations for new units to the north west of the site
	Crataegus monogyna (hawthorn)					Root pruning and crown pruning back to the existing site fence is required prior to construction to prevent damage to trees
	Salix fragilis (crack willow)					
	Prunus spinosa (blackthorn)					
	Betula pendula (silver birch)					
G3	Betula pendula (silver birch)	190; 190	C1	see plan	No	Retain and protect
T20	Fraxinus excelsior (ash)	310; 290	B2	4.2	Yes	Tree to be removed
T21	Crataegus monogyna (hawthorn)		C2	0	Yes	Tree to be removed
T22	Crataegus monogyna (hawthorn)	300	B2	3.6	Yes	Tree to be removed
G4	Sorbus aria (whitebeam)	up to 220	C2	see plan	Yes	Group to be removed



Tree ref	Species	Stem dia.	BS5837 Tree Quality Category	Radius of RPA	Affected by development	Proposed works
T - individual G - group W - Woodland H - Hedgerow	Latin name	mm	A, B, C, U	m		
	Common name		(1,2,3)			
		ave				
G5	Acer campestre (field maple)	240	B1	2.88 each	Yes	Group to be removed
T23	Sorbus aria (whitebeam)	160	C1	1.92	Yes	Tree to be removed
G6	Sorbus aria (whitebeam)	100-200	B2	see plan	Yes	Group to be removed
T24	Fraxinus excelsior (ash)	75	C2	0.9	Yes	Tree to be removed
T25	Betula pendula (silver birch)	100	C2	1.2	Yes	Tree to be removed
T26	Betula pendula (silver birch)	290	B2	3.48	Yes	Tree to be removed
G7	Acer saccharinum 'Laciniata' (Silver maple)	320; 280	B1		Yes	Group to be removed
G8	Betula pendula (silver birch)	ave 250	C2		Yes	Group to be removed
G9	Betula pendula (silver birch)	up to 450	B1		Yes	Group to be removed
T27	Quercus robur (English oak)	540	A2	6.48	Yes	Retain and protect
T28	Fagus sylvatica (beech)	560	C2	6.72	Yes	Tree to be removed
T29	Quercus robur (English oak)	1070	A3	12.84	Yes	Works to be carried out under an arboricultural watching brief - Root pruning to the edge of the proposed hard surfacing to the north of the tree is required prior to construction to prevent damage to trees; permanent ground protection and temporary tree protection fence must be installed prior to commencement of main construction works .
T30	Quercus robur (English oak)	960	A3	11.52	Yes	Works to be carried out under an arboricultural watching brief - Root pruning to the edge of the proposed hard surfacing is required and installation of temporary tree protection fence prior to construction to prevent damage to trees
G10	Acer pseudoplatanus (sycamore) Crataegus monogyna (hawthorn)		C2	-	Yes	Group to be removed
					-	

Tree ref	Species	Stem dia.	BS5837 Tree Quality Category	Radius of RPA	Affected by development	Proposed works
T - individual G - group W - Woodland H - Hedgerow	Latin name	mm	A, B, C, U	m	Yes	Retain and protect with temporary tree protection fencing
	Common name		(1,2,3)			
T31	Quercus robur (English oak)	450	A2	5.4	Yes	Retain and protect with temporary tree protection fencing
T32	Acer campestre (field maple)	600	A2	7.2	Yes	Retain and protect with temporary tree protection fencing
G11	Fraxinus excelsior (ash)	under 100	C2	see plan	Yes	Retain and protect
	Pinus sylvestris (Scots pine)					Remove redundant planting accessories
	Corylus avellana (hazel)					
	Prunus spinosa (blackthorn)					
G12	Quercus robur (English oak)	up to 440	B2	see plan	Yes	Retain and protect
	Fraxinus excelsior (ash)					
	Pinus sylvestris (Scots pine)					
	Corylus avellana (hazel)					
	Sorbus aucuparia (rowan)					
	Acer campestre (field maple)					
	Cornus sanguinea (dogwood)					

Table 3.0 Schedule of tree works

6 ARBORICULTURAL METHOD STATEMENT

6.1 General requirements

- 6.1.1 A copy of this document should be provided to the Construction Manager and retained at the site office, with all relevant drawings included in the appendices clearly displayed on site notice boards. The method statement must be made freely available for inspection to contractors and sub-contractors. The document shall be introduced to all new contractors as part of the general site induction.
- 6.1.2 An Arboricultural Consultant shall be appointed to inspect the tree works and protection measures to ensure compliance with this method statement in accordance with the draft Arboricultural Inspection Proforma in Appendix 5 and reporting procedures. Timing of inspections will generally be every 6-8 weeks, timed to coincide with planned work stages and include ad-hoc inspections.
- 6.1.3 All proposed tree works shall be carried out by a suitably qualified, competent and insured contractor, preferably an Arboricultural Association approved contractor. Tree work should be undertaken in accordance with BS 3998:2010 – “Tree Work - Recommendations” and current issued FISA Safety Guides (Forestry Industry Safety Accord). No tree works shall be undertaken by construction personnel.
- 6.1.4 All tree works to be carried out shall comply with all appropriate legislation, including planning application decision notices and conditions, felling licences, statutory Tree Preservation Order and Conservation Area constraints and requirements. This includes The Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000 which provides statutory protection to protected species and birds. All tree work operations are covered by these provisions and advice from an ecologist should be obtained before undertaking any works that might constitute an offence.
- 6.1.5 The proposed tree works are shown on:
- Arboricultural Impact Assessment Tree Removal Plan 197/T/200;
 - Arboricultural Method Statement Tree Works Plan 197/T/300;
 - Arboricultural Method Statement Tree Protection Plan 197/T/400; and
 - Arboricultural Method Statement Proprietary Tree Protection Measures 197/T/500.
- 6.1.6 All proposed tree pruning and tree removal, shall be undertaken in accordance with the approved schedule and plans appended within this report and in consultation with the Arboricultural Consultant and Ecologist. No works are to be undertaken on trees that are shown to be retained and protected without prior consultation with the Arboricultural Consultant and Ecologist.
- 6.1.7 Trees to be removed shall be spray painted in accordance with the drawings and accompanying schedule.

- 6.1.8 The Construction Manager shall be responsible for daily compliance with this method statement and shall contact the Arboricultural Consultant as required for general queries, ad-hoc inspections and unexpected occurrences affecting trees during the course of the works, such as encountering large roots over 25mm diameter or if additional pruning is required.
- 6.1.9 The tree works and subsequent installation of protection must be carried out prior to the commencement of construction, ground preparation works, establishment of site compounds, delivery of construction plant and materials or other investigation works.
- 6.1.10 No tree removal or pruning works other than those identified in this method statement, are to be carried out as further permissions from Wrexham Council may be required and ecological constraints may be present.
- 6.1.11 All tree works should be undertaken outside of the nesting bird season which is between 1st March to 1st September, however it should be noted, that should warm weather be prevalent at the end of February, it is possible that bird nesting activity may start early.
- 6.1.12 If any tree works are to take place between March and August, a suitably qualified Ecologist should check the tree works area a maximum of 24 hours before any works commence. Should any nesting birds be found, or suspected to be present, advice should be sought from the Ecologist before proceeding.
- 6.1.13 If nesting birds are found, the tree should be marked with tape or spray paint to prevent the tree from being removed until the young have fledged the nest. The drawing displayed in the site office and showing the relevant tree should be marked to identify the presence of a birds nest and the date noted. This will allow forward planning for reinspection and removal once the young have fledged the nest.



7 ARBORICULTURAL METHOD STATEMENT WORKS TO EXISTING TREES

7.1 Tree works

7.1.1 In addition to the tree removals, tree surgery works are recommended to allow clearance for construction access, to prevent potential damage from construction vehicles and as remedial or formative pruning. The tree works proposed are shown in Table 1.0 and on the:

- Arboricultural Impact Assessment Tree Removal Plan 197/T/200;
- Arboricultural Method Statement Tree Works Plan 197/T/300;
- Arboricultural Method Statement Tree Protection Plan 197/T/400; and
- Arboricultural Method Statement Proprietary Tree Protection Measures 197/T/500.

7.1.2 All operations must be carried out to avoid damaging neighbouring retained trees. Trees to be retained must not be used for anchorage or winching purposes.

7.1.3 Any pruning to facilitate access must ensure there is no significant adverse impact on tree physiology or amenity value. A suitable working area may be created by temporarily tying back tree branches to avoid excessive pruning. The visual appearance, health and stability of a tree must be considered when undertaking pruning works and remedial pruning may be required as part of the tree works.

7.1.4 All trees that have been approved for removal shall be cut down to a low stump. Those that are in close proximity to trees to be retained shall either have their stumps ground out or left in situ. The stumps of felled trees not in close proximity to retained trees can be fully grubbed out. Access for stump removal must be gained from within the designated construction working area, not through the CEZ or the RPA of trees to be retained.

7.1.5 Removal of ivy growth is included in these works where there is a need for more detailed inspection of a tree, or where there is concern that the extent of ivy may create a windsail effect with regard to tree stability. Ivy growth can create valuable habitat for insects, invertebrates, birds and bats and therefore where this is considered of wildlife benefit, it will be retained.

7.1.6 Trees in category U that are dead or in decline may be retained as standing dead wood where there is no public access and no targets. Where there is existing public access, or where new access is planned, in the vicinity of category U trees, it is proposed that these trees are either reduced to 4m in height as standing dead wood, or removed completely.

7.1.7 Tree protection fencing and ground protection measures shall be installed following completion of the tree works and prior to any other construction or clearance works taking place.

7.1.8 All tree work should be undertaken with due regard to ecological constraints and any mitigation requirements.

7.2 Tree and root protection

7.2.1 Following completion of the tree works, and subsequent inspection and sign off by the Arboricultural Consultant, the Construction Manager will arrange installation of the temporary tree protection.

7.2.2 Tree protection fencing in accordance with BS5837:2012 (See Appendix 2 for details) or other suitable robust and immovable fence to minimum 1.8m in height to be approved by the Arboricultural Consultant and Wrexham County Borough Council Tree Officer, shall be erected prior to the commencement of any of the following activities:

- Soil stripping;
- Delivery of any plant or materials;
- Demolition and site clearance;
- Commencement of construction works;
- Installation of any utilities;
- Soiling / ground reinstatement; and
- Landscape works.

The protective fencing shall be erected to the alignment as shown on the

- Arboricultural Method Statement Tree Protection Plan 197/T/400; and
- Arboricultural Method Statement Proprietary Tree Protection Measures 197/T/500.

The temporary tree protection fencing shall tie into the existing site perimeter fencing where appropriate. Setting out co-ordinates can be provided by MDLandscape if required.

7.2.3 Weather proof tree protection fence signs (See Appendix 3) shall be attached to the fencing at 10m intervals and positioned at eye level. These signs must be replaced if they are removed or become illegible.

7.2.4 Once erected these fenced areas should be respected and after installation, barriers and ground protection should not be removed or altered without prior recommendation by the Arboricultural Consultant and must remain in place until completion of all construction works on site.

7.2.5 No works are proposed within the CEZ once the fence and ground protection measures are installed. The CEZ must not be altered and the following restrictions shall apply:

- No change in ground level, reprofiling or mechanical excavations;

- No excavations by other means without the advice and agreement of the Arboricultural Consultant;
- No removal of grass areas by mechanical means;
- No storage of plant or materials;
- No storage or handling of any chemicals, fuels, wash out areas; and
- No vehicular access.

7.2.6 Where the Root Protection Areas (RPA) for retained trees extends beyond the tree protection fencing, temporary ground protection shall be installed in accordance with BS5837:2012. Such ground protection must ensure that there is no soil compaction and root growth is uninhibited. The ground protection shall consist of the following as relevant to the proposed site layout and construction requirements:

7.3 Topsoil storage

7.3.1 Topsoil storage within the RPA of existing trees to be retained should be avoided. It is recommended that geotextile be laid below the proposed topsoil storage bund to segregate existing and stored soils to prevent inadvertent excavation at reinstatement. Topsoil should not be stored more than 1m in height.

7.4 Temporary pedestrian access during construction

7.4.1 Single thickness non-slip boards on a 100mm compression-resistant layer of woodchip, over a robust geo/textile membrane; or, geotextile laid over existing ground with 100mm depth clean inert hardcore; or, non-slip boards laid on a purpose formed scaffold frame, creating a suspended walkway. Alternative proposals may be submitted to the Arboricultural Consultant.

7.5 Vehicular access

7.5.1 Where vehicular construction access is required within the RPA of trees to be retained, an above ground protection system shall be provided. This shall be installed to accommodate the potential loading within the RPA (e.g. proprietary systems as shown in Appendix 4) and shall be designed to an engineering specification in conjunction with arboricultural advice.

7.5.2 On completion of construction and reinstatement works the above ground protection systems shall be removed only with the approval of the Arboricultural Consultant. Surface de-compaction and root zone enhancement measures may be required and can then be undertaken.

7.6 Additional precautions outside the CEZ

- 7.6.1 Care should be taken when planning site operations to ensure that all types of machinery can operate without encountering retained trees. Such contact can result in significant damage and compromise safe retention of the tree. It is recommended that a banksman is employed to ensure adequate clearance from trees is always maintained. Where this is not possible, access facilitation pruning in consultation with the Arboricultural Consultant may be required. No signs, apparatus or any other services shall be attached to any part of a retained tree.

7.7 Site compounds, cabins, storage of materials and spoil

- 7.7.1 Temporary site compounds, including portable welfare facilities and temporary service connections, are to be positioned clear of the RPA of retained trees. The site poster 'Common causes of tree death' (see Appendix 6) shall be posted in the site cabin(s).
- 7.7.2 The delivery, storage, mixing and discharge of concrete and all other cement based materials shall be carried out away from retained trees, so that there is no risk of runoff and spillage in the RPA. No substances that are potentially injurious to trees (including fuels, building materials and other phyto-toxic materials) shall be stored or used in the vicinity of retained trees where there is a risk of injurious contact. Emergency spillage kits must be available to minimise the impacts of any accidental spillages to the local environment.
- 7.7.3 No materials shall be stored within the RPA of retained trees. Spoil from any site activity shall be removed or if to be retained for reuse, stored or piled outside the CEZ.

7.8 Installation of services and excavation within the RPA

- 7.8.1 Underground services should be routed outside the RPA of all retained trees to avoid risk of roots being severed during excavation. Mechanical trenching can also affect local soil hydrology. Common ducts should be used to minimise disturbance and segregated from the RPA.
- 7.8.2 Where there is no alternative and new services are to pass within the RPA, the service plans should be developed with input from the Arboricultural Consultant. Trenchless insertion methods should be used where possible, with the entry and exit pits situated outside the RPA.
- 7.8.3 Where this is not possible the NJUG 10 Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees should be adopted. Hand excavation may be acceptable for shallow service runs, where they can be undertaken with the supervision of the Arboricultural Consultant and where roots can be retained and suitably protected. Where possible an air spade or air lance should be used to loosen the soil and removed using a vacuum excavator. Soils should be stored and retained on site for reinstatement on completion of the works. This may also involve wrapping or covering exposed roots to prevent desiccation and the effects of rapid temperature change. All wrappings must be removed prior to backfilling.

- 7.8.4 Prior to backfilling of soils the installation of a root protection barrier may be required to ensure there are no long-term effects of root growth on buried assets. Backfilling to trenches should ensure that subsoils are replaced first in 300mm layers and soils consolidated but not compacted. The final 300mm of soil backfill to ground level should be topsoil excavated from the trench or a 50/50 mix by volume of as dug topsoil and proprietary tree and shrub compost with organic matter content to replicate the upper soil profile. Injection of soils with mycorrhizal inoculant may also be considered where fibrous roots have been lost due to excavation.

7.9 Demolition and new surfacing within the CEZ

- 7.9.1 Demolition of existing structures in close proximity to retained trees should be carried out under the supervision of the Arboricultural Consultant with works planned to avoid deposition of material within the CEZ and to avoid damage to retained trees. Mechanical plant access within the CEZ should be avoided. Temporary pedestrian access shall be allowed within the CEZ to carry out these operations. A temporary breach in the fencing shall be created to facilitate pedestrian access only.
- 7.9.2 Removal of the existing hard surfacing adjacent to the RPA should be undertaken first, working away from the retained tree to allow any exposed roots to be appropriately covered and protected as work proceeds. Debris within the RPA should be removed by hand and transported clear of the protective fencing using wheelbarrows.
- 7.9.3 Where roots are encountered during the course of the works, they shall be retained and carefully worked around, wherever practicable. No root greater than 25mm dia. shall be cut without advice from the Arboricultural Consultant. If damage does occur to a root greater than 25mm diameter, then advice must be sought from the Arboricultural Consultant. Where it is essential to sever roots, they shall be cleanly cut, using an appropriate, sharp clean bladed hand tool. Roots that are to be retained shall be covered with hessian, or similar, to protect from desiccation. Prior to backfilling, any hessian wrapping should be removed and retained roots should be surrounded with sharp sand, or other loose granular fill before soil or other material is replaced.
- 7.9.4 To minimise risk of damage to tree roots to be retained, an air spade or vacuum excavator may be used to loosen and remove soils, in order to identify the location of roots adjacent to a planned excavation. Roots may then be pruned as previously described.

- 7.9.5 Where there is a deficit of cover due to removal of existing surfacing, inert sandy subsoil shall be placed where the depth exceeds 300mm. Where the depth of cover is 300mm or less, a loam-sand-based topsoil shall be placed to provide at least 300mm of cover. Grading shall be undertaken using hand tools only to avoid compaction. No reduction of levels of the underlying soil surface shall be carried out. Soiling shall be undertaken in accordance with the Construction code of practice for the sustainable use of soils on construction sites.⁶

7.10 Reinstatement and soft landscaping within the CEZ

- 7.10.1 Reinstatement and soft landscape works, excavation and ground preparation within the CEZ shall be carried out using hand tools to minimise risk of damage to roots. Mechanical cultivation and rotovation shall be avoided.
- 7.10.2 Chemical application for treatment of woody plant matter shall be minimised. Where used, all instructions, warnings and other relevant information from manufacturers should be strictly observed and followed. Care must be taken to avoid damage to adjacent vegetation and trees to be retained.
- 7.10.3 During reinstatement, there must be no unplanned changes in ground levels within the RPA and works should only be carried out when ground conditions are suitable to avoid risk of compaction. Final grading to marry in new levels with existing ground with imported soils shall be carried out by hand tools only. Cultivations for seeding shall also be by hand.
- 7.10.4 All new tree planting should be undertaken in accordance with *BS8545:2014 Trees: from nursery to independence in the landscape - Recommendations*. Planting pits for hedgerows, shrubs or trees within the RPA of existing retained trees, must be hand excavated. If substantial roots are encountered, the planting pit should be relocated if possible.
- 7.10.5 Plants and materials for the landscape works should be transported in wheelbarrows and must be moved across existing hard surfacing where possible, or via temporary ground protection minimise risk of compaction.

7.11 Construction of new footpaths and roads within the CEZ

- 7.11.1 The new footpaths and roads in the vicinity of mature oak trees to be retained must be installed using a 'no dig' construction method using a 3D cellular confinement system such as Cellweb, in accordance with the Manufacturer's recommendations.

⁶ Construction Code of Practice for the Sustainable Use of Soils on Construction Sites, www.defra.gov.uk September 2009

7.11.2 The process for installation should be in accordance with Manufacturer's recommendations and generally involves:

- Remove all existing vegetation from the surface using hand tools only. Arisings should be removed from the RPA using wheelbarrows only. No further excavations in this area are to take place. Any voids or depressions within the ground surface are to be made good using sharp sand (not builder's sand) to maintain levels.
- Position kerb edges where there is no conflict with tree roots with minimal haunching, or Install a metal edging to the full depth of proposed surfacing.
- Install geotextile to the ground surface and lay 3D cellular confinement mat (e.g. Cellweb) to the recommended thickness for the proposed access use on top of this membrane. Expand the mat to its full length and trim to the desired length and width. Carefully peg down the matting with proprietary staking pins to keep the cells open. Fill all the cells with a 20-40mm no fines angular granular stone working from the area furthest from the tree first. Continue filling all the cells using the previously filled cells as a working platform.
- The finished surface of the access area may be the gravel surface or laid as required with block paving or similar to manufacturers recommendations.

7.11.3 Topsoil is to be graded from the top of the kerb edge or installed edge restraints to the existing ground level to avoid creating trip hazards.

7.12 Arboricultural watching brief and supervision of excavations

7.12.1 The Construction Manager shall inform the Arboricultural Consultant as soon as possible of the need to undertake excavation works within the RPA of existing trees and programme in an arboricultural watching brief. All watching briefs must be performed by an Arboricultural Consultant. This should be a planned activity and is as shown on the Arboricultural Method Statement Tree Protection Plan 197/T/400; and Arboricultural Method Statement Proprietary Tree Protection Measures 197/T/500.

7.12.2 An arboricultural watching brief is required to ensure the pruning of roots is minimised, kept to within acceptable limits and to supervise the reinstatement of soils. Where possible, root pruning should be carried out at the same time as the installation of the temporary fencing to ensure the fence is in the correct position immediately after the root pruning and reinstatement of soils has been completed.



- 7.12.3 The root pruning work should be undertaken in dry conditions, ideally whilst the ground is moist. Reinstatement of soils, should be carried out as soon as possible after root pruning to avoid drying out of roots to retained trees. There should be at least 300mm of topsoil cover over tree roots to the final ground profile and levels should marry in with existing ground levels. A tree protection fence shall be sited on completion to prevent vehicular access. The use of plant and machinery beyond this demarcation line is prohibited unless at the direction of the arboricultural consultant.
- 7.12.4 Work to remove trees, stumps and roots may then progress slowly to the extent of the tree protection area. The Arboricultural Consultant will monitor the level and likelihood of potential root loss and make on-site recommendations as works progress relevant to presence of roots, diameter of roots and how they are to be pruned as work proceeds.
- 7.12.5 The Arboricultural Consultant will make a photographic record of the works for inspection by the local authority and the completion of the watching brief must be verified by the Arboricultural Consultant.

8 MITIGATION PLANTING & LANDSCAPING

8.1 Mitigation

- 8.1.1 On completion of construction, soil stored within the working area will be reinstated to marry in levels with the adjacent soils. Temporary geotextile membranes and temporary surfacing shall be lifted and removed, and the soil surface beneath shall be lightly raked over. Works are to be carried out in accordance with section 7.10 and the reseeding and replanting requirements will be detailed on the Landscape and Biodiversity Proposals Plan ref 197/LAND/L100. 48 replacement trees and 250m of native species hedgerow are proposed to be planted.
- 8.1.2 Plants and materials for the landscape works shall be transported along the new footpaths and hard surfacing areas to avoid trafficking over existing soils.
- 8.1.3 Soils to either side of the hard surfacing areas shall be graded to smooth, flowing contours, suitable for seeding and planting as per the reinstatement proposals. Care shall be taken not to overwork soils.
- 8.1.4 Replacement tree planting is proposed to mitigate for the removed trees, and to replace amenity or biodiversity value that may be lost because of the tree removal. There are opportunities on site to improve the composition and quality of existing tree groups and therefore enhance screening, biodiversity and visual amenity.
- 8.1.5 Native trees and shrubs appropriate to the area are recommended to be consistent with the vegetation of the locality and for the benefit of biodiversity and site ecology.
- 8.1.6 Planting works would be undertaken between November to March.

9 INSPECTIONS

9.1 Prior to commencement of construction

- 9.1.1 Once the protective fencing and ground protection measures have been installed but prior to the commencement of the development the Construction Manager should contact the Arboricultural Consultant to undertake a site inspection. This is to confirm that all protection measures have been installed in accordance with the Tree Protection Plan and the method statement.
- 9.1.2 Checks of the tree fence and ground protection should be carried out by the contractor at regular intervals during the development to ensure trees remain adequately protected.
- 9.1.3 On completion of the development a general survey of the trees by the Arboricultural Consultant is recommended to identify any remedial action necessary as a result of the works. Note that permission for any additional tree works not included in the original development consent may need to be obtained through application to the LPA/Wrexham County Borough Council.
- 9.1.4 If any arboricultural issues arise during the development then the Construction Manager should immediately contact the Arboricultural Consultant for advice on how to proceed.

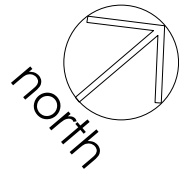
9.2 Reinspection

- 9.2.1 It is recommended that trees are inspected every two years, particularly after storms or other extreme weather events, to identify potential new hazards or changes to known defects. Annual inspections have been recommended for specific trees where fungal fruiting bodies or defects are known to be present. Inspections of all retained trees should be undertaken by a qualified Arboriculturist/Arboricultural Consultant and records of inspection held at the site or with the landowner.
- 9.2.2 Hazard recommendations are based on observations at the time of survey. Trees are dynamic living organisms whose structure is constantly changing. Even those in good condition can suffer from damage or stress. Following site development, regular (annual or biennial) inspections of all retained trees should be undertaken by a qualified Arboricultural Consultant.



10 FIGURES

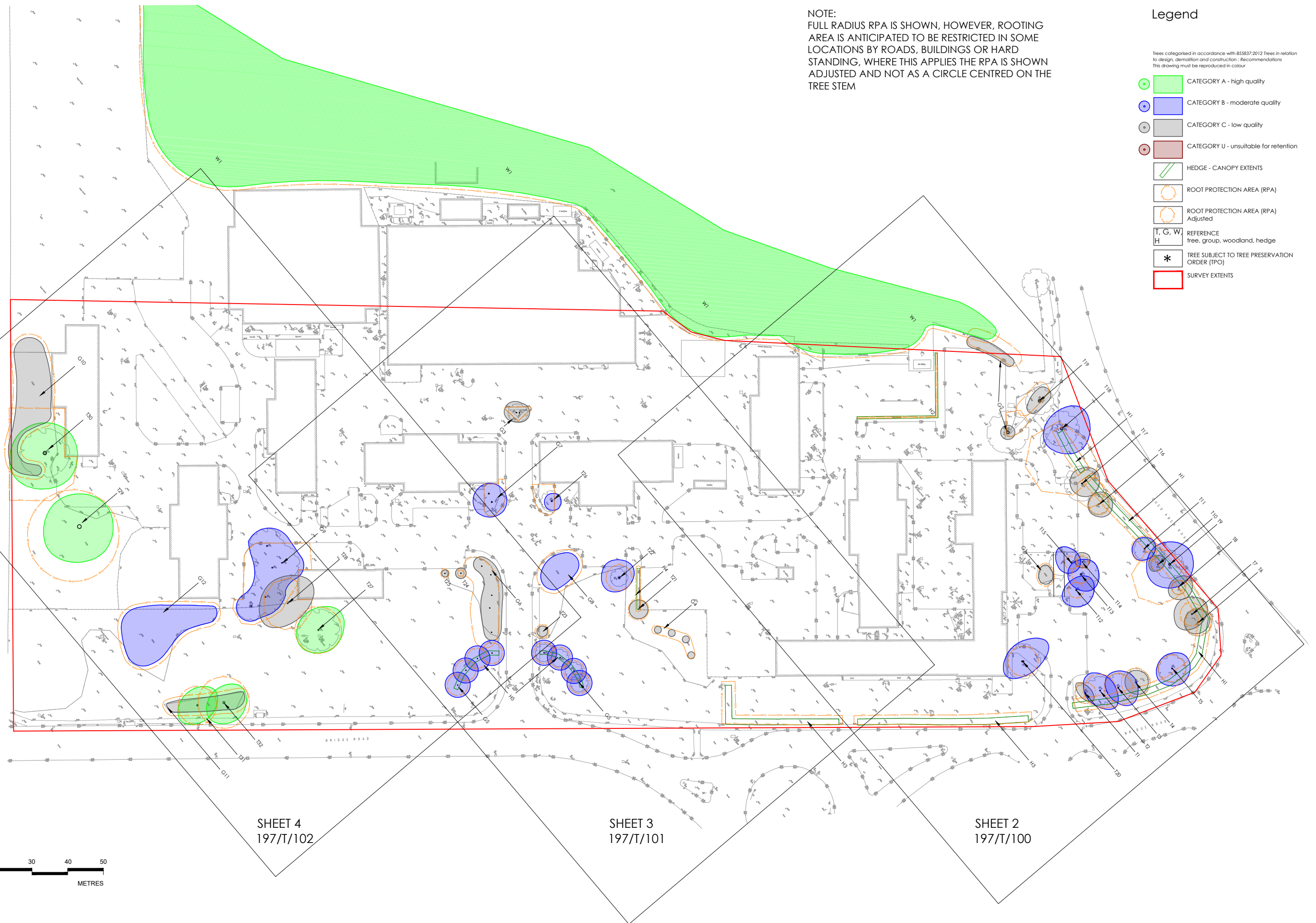
Figures	Document/Drawing Title	Document/Drawing Reference
1.0	Site Location Plan	
2.0	Tree Constraints Plans	197/T/050, 100, 101, 102
3.0	Arboricultural Impact Assessment - Tree Removals Plan	197/AIA/T/200
4.0	Arboricultural Method Statement - Tree Works Plan	197/AMS/T/300
5.0	Arboricultural Method Statement - Tree Protection Plan	197/AMS/T/400
6.0	Arboricultural Method Statement – Proprietary Tree Protection Measures	197/AMS/T/500
7.0	Topographical survey	9980_T
8.0	Proposed Site Plan	1182-02-002
9.0	Landscape and Biodiversity Proposals Plan	197/LAND/L/100
Tables		
1.0	Baseline of the existing tree and hedgerow population	
2.0	Impact of development and effects on the tree and hedgerow population	
3.0	Schedule of tree works	
Appendices		
1	Arboricultural Survey Data sheets	
2	Tree Quality Assessment Chart	
3	Examples of tree protection systems BS5837:2012	
4	Tree protection signage	
5	Proprietary root protection system - example	
6	Arboricultural inspection proforma	
8	Common causes of tree death poster	



NOTE:
FULL RADIUS RPA IS SHOWN, HOWEVER, ROOTING
AREA IS ANTICIPATED TO BE RESTRICTED IN SOME
LOCATIONS BY ROADS, BUILDINGS OR HARD
STANDING, WHERE THIS APPLIES THE RPA IS SHOWN
ADJUSTED AND NOT AS A CIRCLE CENTRED ON THE
TREE STEM

Legend

- Trees categorised in accordance with BS5837:2012 Trees in relation to design, demolition and construction - Recommendations
This drawing must be reproduced in colour
- CATEGORY A - high quality
 - CATEGORY B - moderate quality
 - CATEGORY C - low quality
 - CATEGORY U - unsuitable for retention
 - HEDGE - CANOPY EXTENTS
 - ROOT PROTECTION AREA (RPA)
 - ROOT PROTECTION AREA (RPA) Adjusted
 - T, G, W, H REFERENCE tree, group, woodland, hedge
 - * TREE SUBJECT TO TREE PRESERVATION ORDER (TPO)
 - SURVEY EXTENTS



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

Project BRIDGEWAY CENTRE, WREXHAM

Dwg No 197/T/050

Rev	Date	Reason	Initials
P01	11/02/2022	FOR INFORMATION	MD



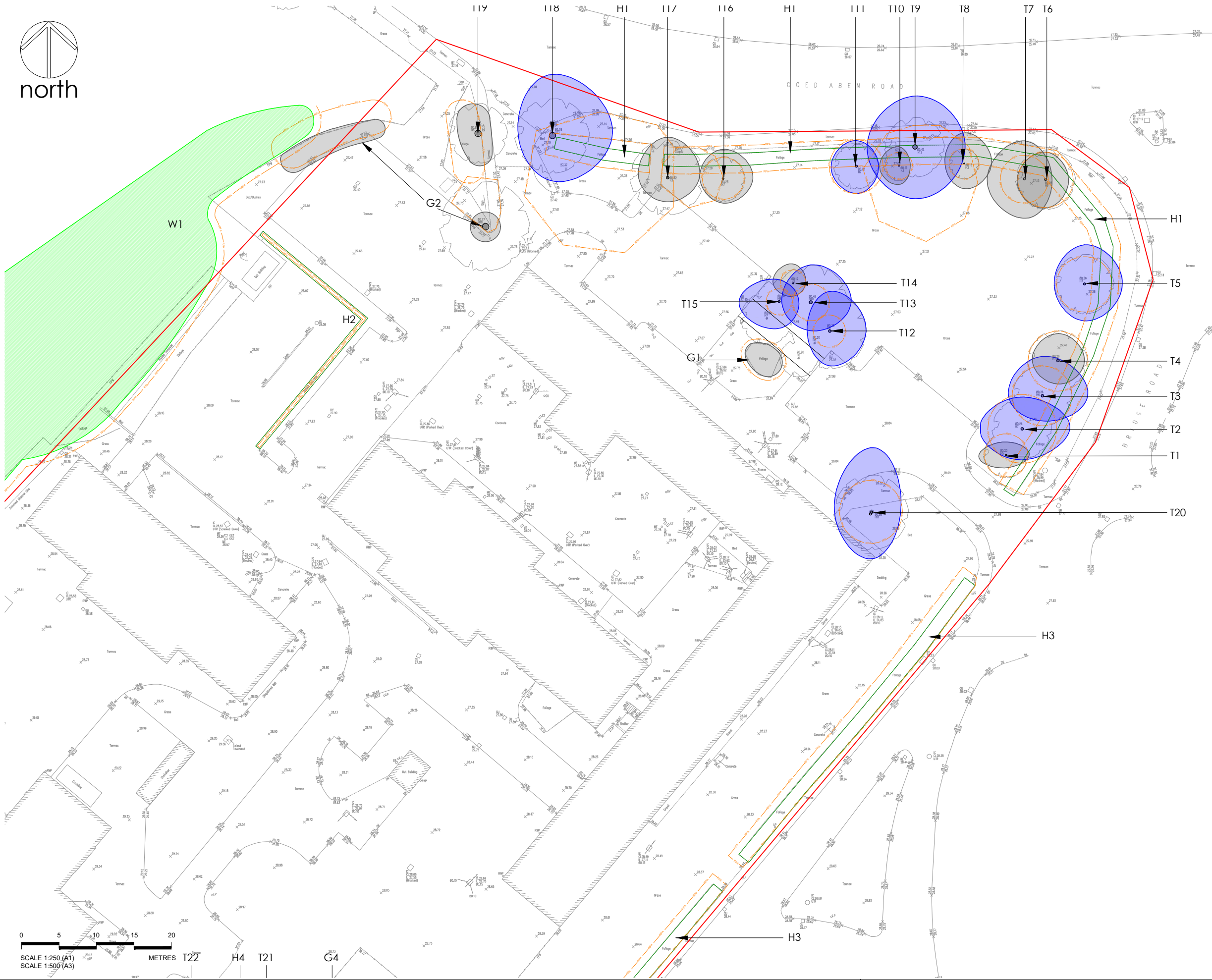
Title TREE CONSTRAINTS PLAN - OVERVIEW
SHEET 1 OF 4

Scale 1: 500@A1 / 1:1000@A3 Date 11/02/2022 Drawn MD

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All dimensions are shown in metres and millimetres unless otherwise stated.



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Cheshire | WA16 6LZ | 07710 498231



Legend

- Trees categorised in accordance with BS5837:2012 Trees in relation to design, demolition and construction - Recommendations
This drawing must be reproduced in colour
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 - ROOT PROTECTION AREA (RPA) Adjusted
 - REFERENCE
T, G, W
H
free, group, woodland, hedge
 - SURVEY EXTENTS

NOTE:
FULL RADIUS RPA IS SHOWN, HOWEVER, ROOTING AREA IS ANTICIPATED TO BE RESTRICTED IN SOME LOCATIONS BY WALLS AND HARD STANDING, WHERE THIS APPLIES THE RPA IS SHOWN ADJUSTED AND NOT AS A CIRCLE CENTRED ON THE TREE STEM

0 5 10 15 20
SCALE 1:250 (A1)
SCALE 1:500 (A3)
METRES

Project BRIDGEWAY CENTRE, WREXHAM

Dwg No 197/T/100

Title TREE CONSTRAINTS PLAN
SHEET 2 OF 4

Scale 1: 250@A1 / 1:500@A3 Date 11/02/2022

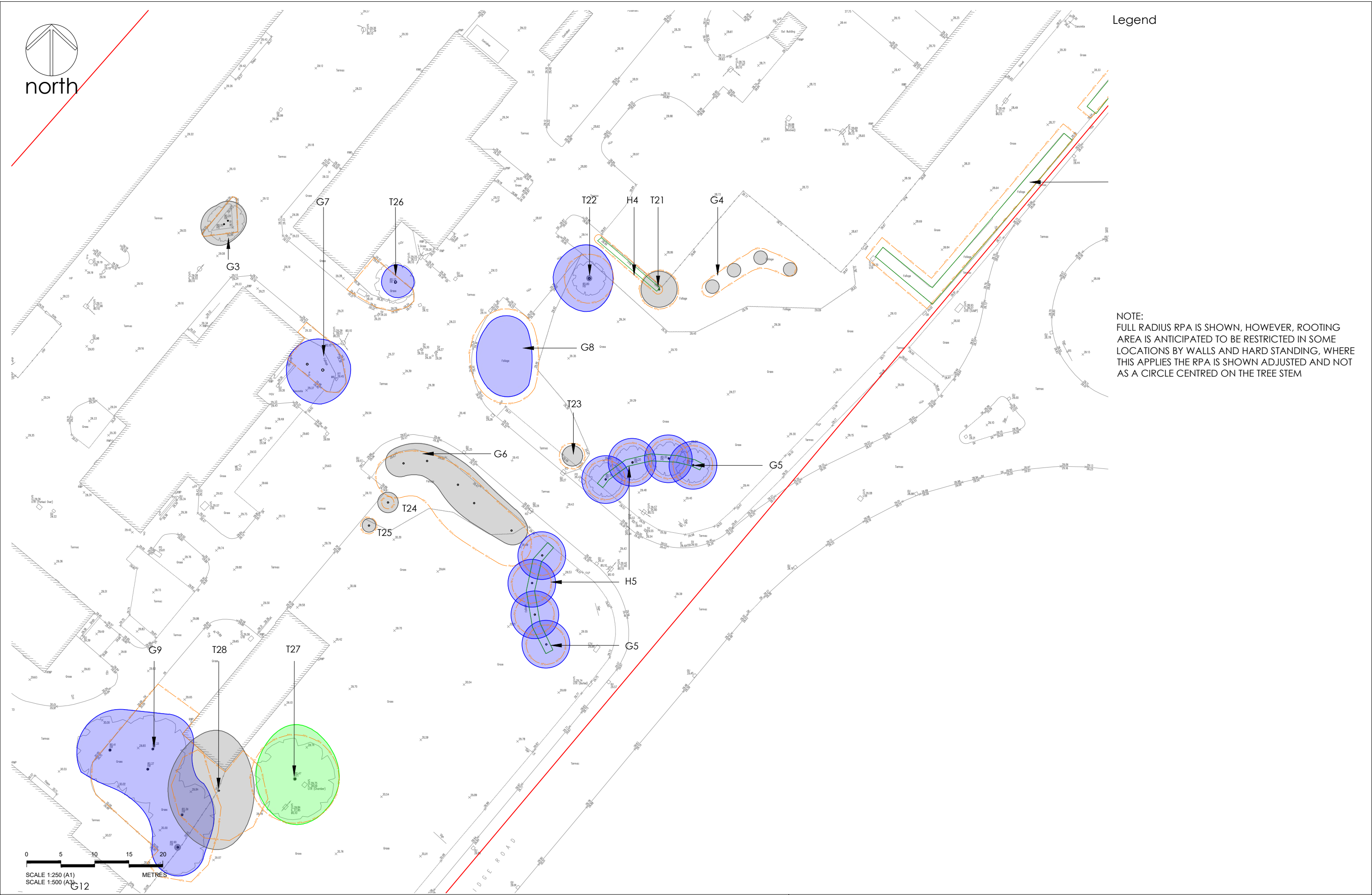
Drawn MD

Rev	Date	Reason	Initials
P01	11/02/2022	FOR INFORMATION	MD

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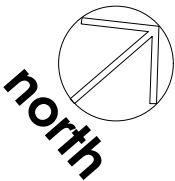
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Project BRIDGEWAY CENTRE, WREXHAM	Dwg No 197/T/101	<table><tr><th>Rev</th><th>Date</th><th>Reason</th><th>Initials</th></tr><tr><td>P01</td><td>11/02/2022</td><td>FOR INFORMATION</td><td>MD</td></tr></table>	Rev	Date	Reason	Initials	P01	11/02/2022	FOR INFORMATION	MD	
Rev	Date	Reason	Initials								
P01	11/02/2022	FOR INFORMATION	MD								
Title TREE CONSTRAINTS PLAN SHEET 3 OF 4	Scale 1: 250@A1 / 1:500@A3 Date 11/02/2022 Drawn MD	The Copyright of this drawing belongs to mlandscape. This drawing is issued by mlandscape subject to the condition that it is not copied either in whole or in part, or disclosed to third parties unless prior written authorisation is given by mlandscape. Do not scale from this drawing - refer to noted dimensions on drawing; all dimensions to be confirmed on site prior to execution of the works. All dimensions are shown in metres and millimetres unless otherwise stated.	<table><tr><td></td><td></td><td></td><td>mlandscape 6 Kinderton Close High Legh Knutsford Cheshire WA16 6LZ 07710 498231</td></tr></table>				mlandscape 6 Kinderton Close High Legh Knutsford Cheshire WA16 6LZ 07710 498231				
			mlandscape 6 Kinderton Close High Legh Knutsford Cheshire WA16 6LZ 07710 498231								



Project		BRIDGEWAY CENTRE, WREXHAM		Dwg No		197/T/102		Rev		Date		Reason		Initials			
								P01		11/02/2022		FOR INFORMATION		MD			
Title		TREE CONSTRAINTS PLAN SHEET 4 OF 4		Scale		1: 250@A1 / 1:500@A3		Date		11/02/2022		Drawn		MD		 mlandscape 6 Kinderton Close High Legh Knutsford Cheshire WA16 6LZ 07710 498231	



Drawing references	
197/AIA/T/200	ARBORICULTURAL IMPACT ASSESSMENT TREE REMOVAL PLAN
197/AMS/T/300	ARBORICULTURAL METHOD STATEMENT TREE WORKS PLAN
197/AMS/T/400	ARBORICULTURAL METHOD STATEMENT TREE PROTECTION PLAN
197/AMS/T/500	ARBORICULTURAL METHOD STATEMENT PROPRIETARY TREE PROTECTION MEASURES

Notes

1. Dimensions are given in metres and millimetres as stated on the drawing.
2. Centre of site is located at approximately grid reference SJ 37822 49380.
3. Drawing must be reproduced in colour.

Location Plan

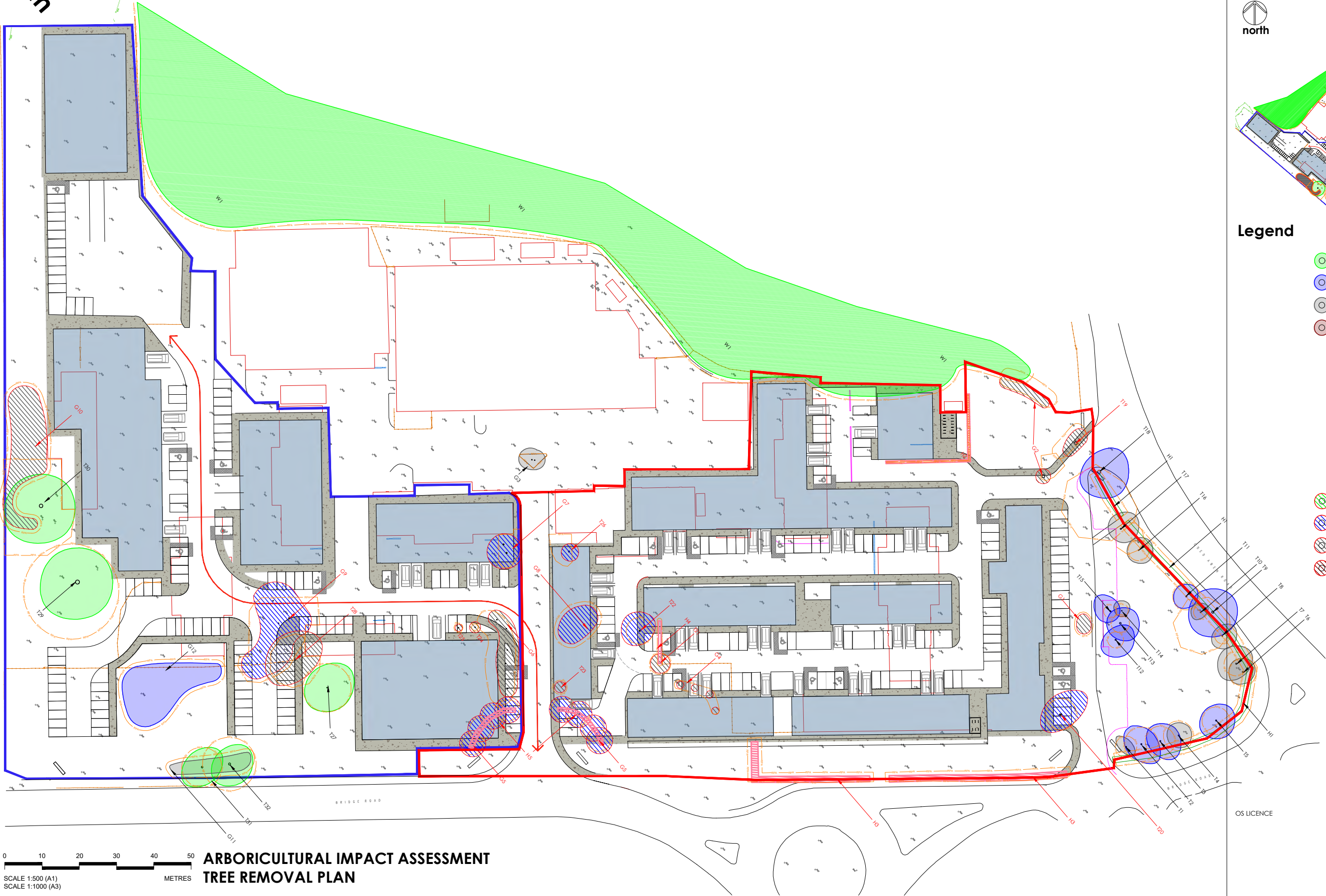


Legend

- FEATURES TO BE RETAINED

 - CATEGORY A - high quality tree / group to be retained
 - CATEGORY B - moderate quality tree / group to be retained
 - CATEGORY C - low quality tree / group to be retained
 - CATEGORY U - unsuitable for retention
 - ROOT PROTECTION AREA (RPA)
 - HEDGE CANOPY EXTENTS
 - T, G, W, H REFERENCE - tree, group, woodland, hedge retained
 - PROPOSED DEVELOPMENT
 - DETAILED APPLICATION
 - OUTLINE APPLICATION
- FEATURES TO BE REMOVED

 - CATEGORY A - high quality tree / group to be removed - none
 - CATEGORY B - moderate quality tree / group to be removed
 - CATEGORY C - low quality tree / group to be removed
 - CATEGORY U - unsuitable for retention to be removed - none
 - HEDGE TO BE REMOVED
 - T, G REFERENCE - tree, group, hedge to be removed

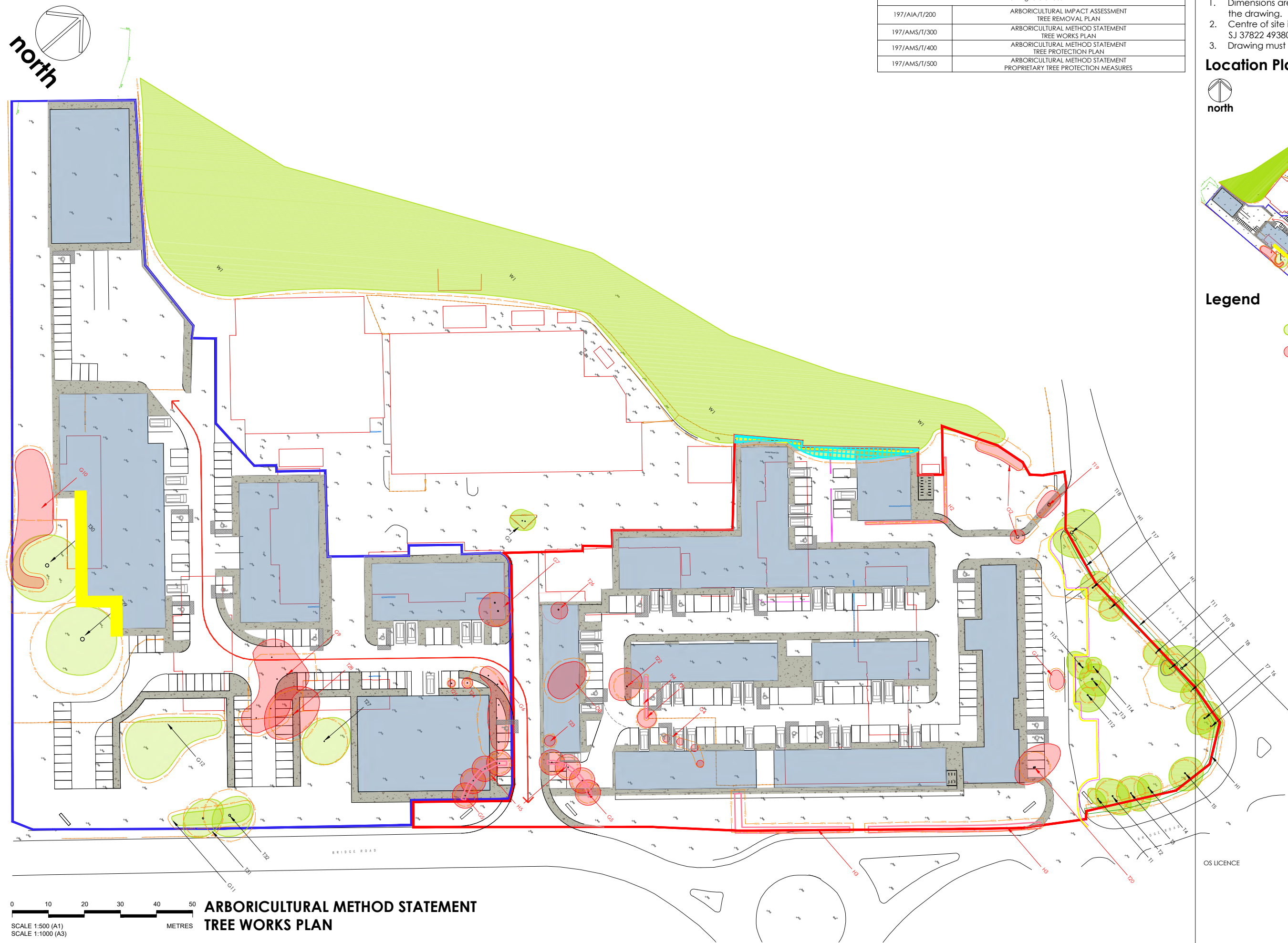


OS LICENCE

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

ARBORICULTURAL IMPACT ASSESSMENT
TREE REMOVAL PLAN

Project	THE BRIDGEWAY CENTRE WREXHAM INDUSTRIAL ESTATE	Dwg No	197/AIA/T/200	Revision	P02	Revision	Date	Details	Drawn	Checked	Reviewed	 mdlandscape 6 Kinderton Close High Legh Knutsford Cheshire WA16 6LZ 07710 498231
						P01	03.06.2024	FOR INFORMATION	MD	XX	XX	
Title	ARBORICULTURAL IMPACT ASSESSMENT TREE REMOVAL PLAN	Scale	1:500 @ A1 / 1:1000 @ A3	Date	06/11/2024	P02	06/11/2024	FOR INFORMATION	MD	XX	XX	 Chartered Member of the Landscape Institute  Landscape Institute  Arboricultural Association



Drawing references	
197/AIA/T/200	ARBORICULTURAL IMPACT ASSESSMENT TREE REMOVAL PLAN
197/AMS/T/300	ARBORICULTURAL METHOD STATEMENT TREE WORKS PLAN
197/AMS/T/400	ARBORICULTURAL METHOD STATEMENT TREE PROTECTION PLAN
197/AMS/T/500	ARBORICULTURAL METHOD STATEMENT PROPRIETARY TREE PROTECTION MEASURES

Notes

1. Dimensions are given in metres and millimetres as stated on the drawing.
2. Centre of site is located at approximately grid reference SJ 37822 49380.
3. Drawing must be reproduced in colour.

Location Plan



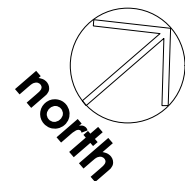
Legend

- TREES TO BE RETAINED
- TREES TO BE REMOVED
- CROWN TO BE PRUNED AND REDUCED BACK TO SITE FENCE LINE
- EXCAVATION TO BE CARRIED OUT UNDER ARBORICULTURAL SUPERVISION TO INSPECT EXCAVATION FOR TREE ROOTS
- ROOT PROTECTION AREA (RPA) BS5837:2012 CALCULATION
- POTENTIAL ASYMMETRIC RPA DUE TO HARD SURFACING AND BUILDINGS
- REFERENCE tree, group, woodland, hedge
- TREE STEM
- HEDGE TO BE RETAINED
- HEDGE TO BE REMOVED
- EXISTING ROAD TO BE REMOVED
- PROPOSED DEVELOPMENT
- DETAILED APPLICATION
- OUTLINE APPLICATION

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

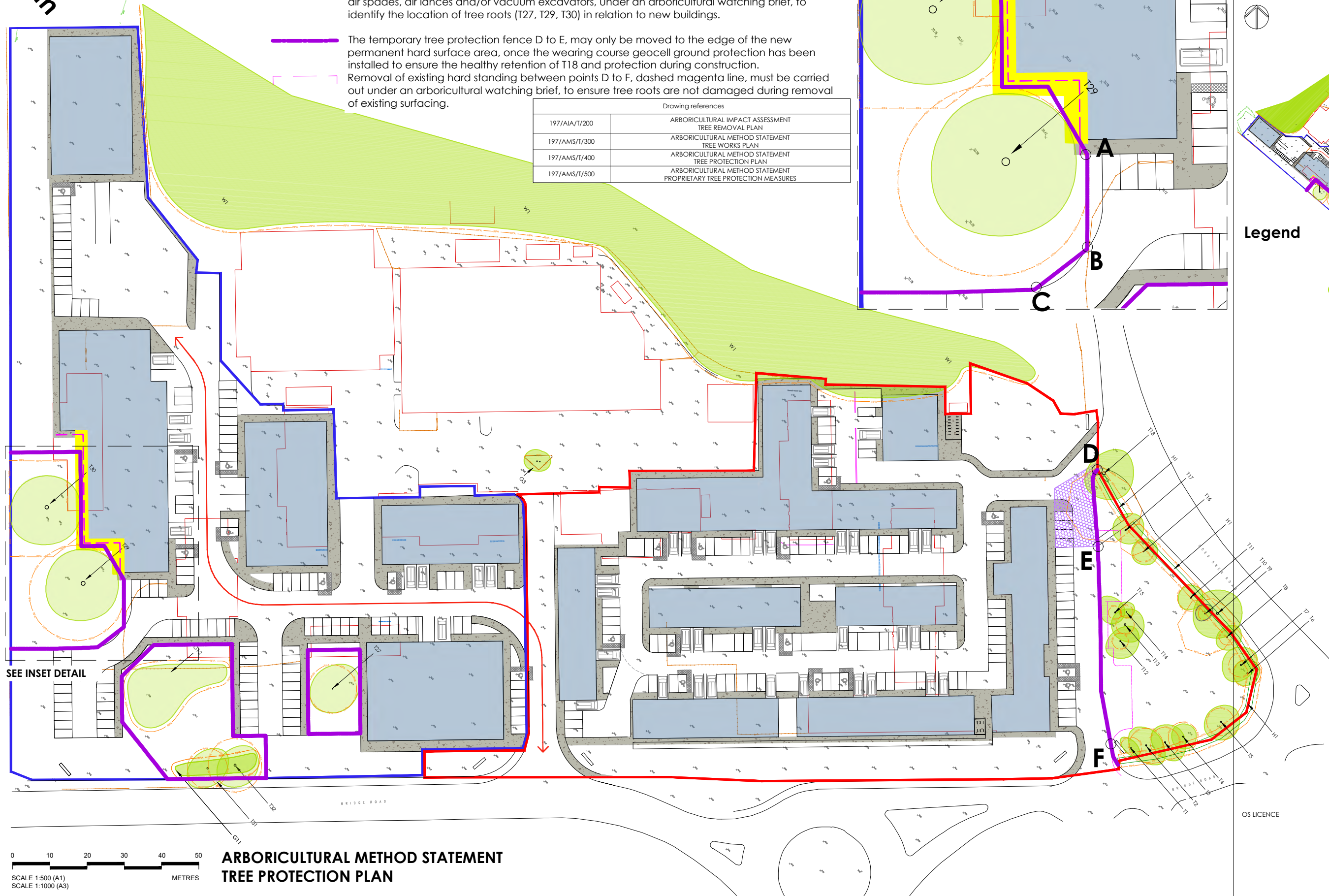
ARBORICULTURAL METHOD STATEMENT
TREE WORKS PLAN

Project	THE BRIDGEWAY CENTRE WREXHAM INDUSTRIAL ESTATE	Dwg No	197/AMS/T/300	Revision	P02	Revision	Date	Details	Drawn	Checked	Reviewed	 mdlandscape 6 Kinderton Close High Legh Knutsford Cheshire WA16 6LZ 07710 498231
						P01	03.06.2024	FOR INFORMATION	MD	XX	XX	
Title	ARBORICULTURAL METHOD STATEMENT TREE WORKS PLAN	Scale	1:500 @ A1 / 1:1000 @ A3	Date	06/11/2024	P02	06/11/2024	FOR INFORMATION	MD	XX	XX	 Landscape Institute Registered Practice Arboricultural Association Endorsing Member



- TIMING OF TREE PROTECTION WORKS AND ARBORICULTURAL WATCHING BRIEF**
- Before any works are carried out, including demolition, excavation and construction the :
Temporary tree protection fence, purple line on drawing A, B, C and D, E, F; and
Temporary ground protection must be installed to ensure protection of the tree T18 for the duration of the works.
 - Exploratory trenches, yellow line on drawing, are to be excavated by hand and with the use of air spades, air lances and/or vacuum excavators, under an arboricultural watching brief, to identify the location of tree roots (T27, T29, T30) in relation to new buildings.
 - The temporary tree protection fence D to E, may only be moved to the edge of the new permanent hard surface area, once the wearing course geocell ground protection has been installed to ensure the healthy retention of T18 and protection during construction. Removal of existing hard standing between points D to F, dashed magenta line, must be carried out under an arboricultural watching brief, to ensure tree roots are not damaged during removal of existing surfacing.

Drawing references	
197/AIA/T/200	ARBORICULTURAL IMPACT ASSESSMENT TREE REMOVAL PLAN
197/AMS/T/300	ARBORICULTURAL METHOD STATEMENT TREE WORKS PLAN
197/AMS/T/400	ARBORICULTURAL METHOD STATEMENT TREE PROTECTION PLAN
197/AMS/T/500	ARBORICULTURAL METHOD STATEMENT PROPRIETARY TREE PROTECTION MEASURES



Notes

- Dimensions are given in metres and millimetres as stated on the drawing.
- Centre of site is located at approximately grid reference SJ 37822 49380.
- Drawing must be reproduced in colour.

Location Plan



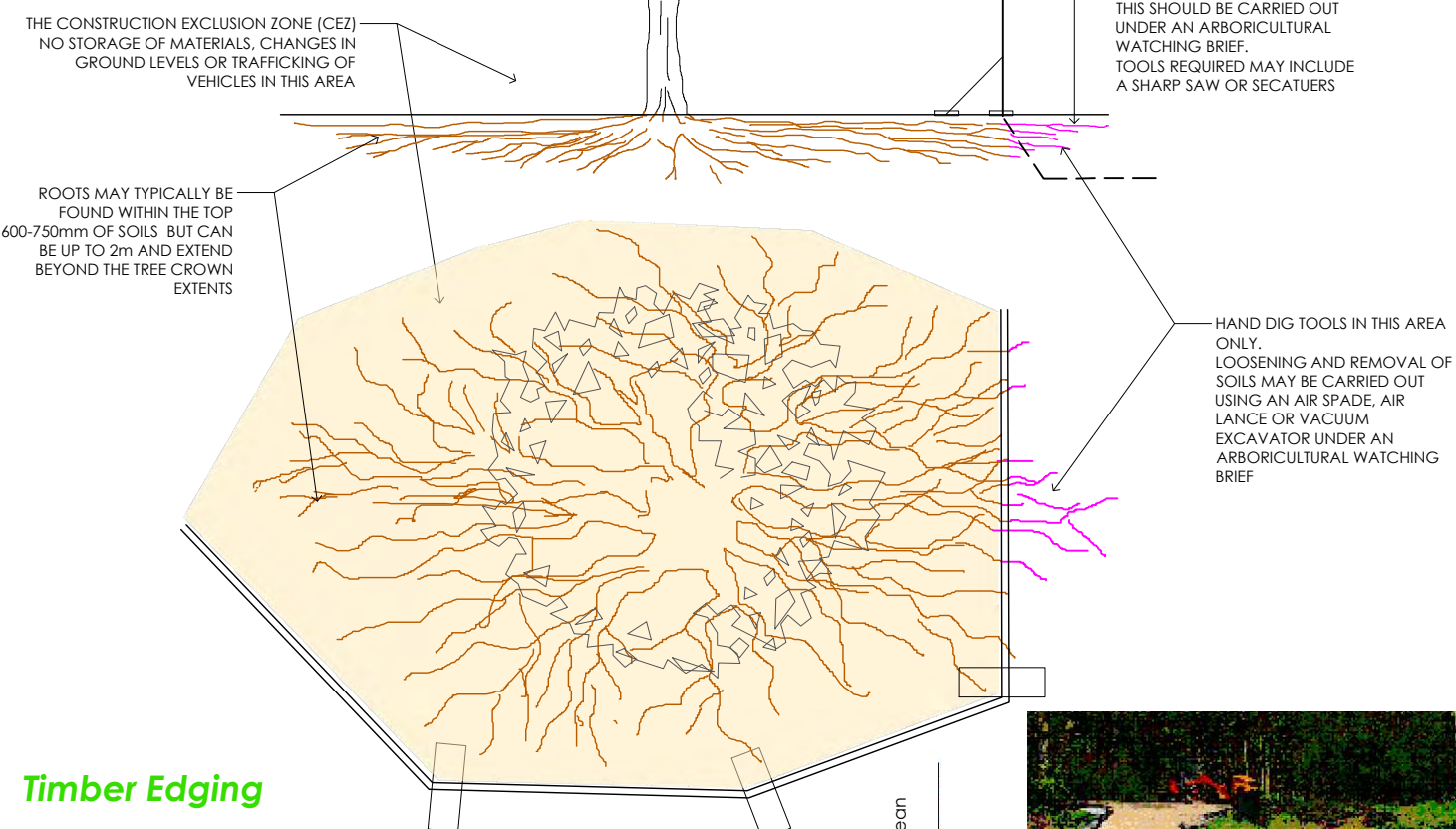
Legend

- TREES TO BE RETAINED
- ROOT PROTECTION AREA (RPA) BS5837:2012 CALCULATION
- POTENTIAL ASYMMETRIC RPA DUE TO HARD SURFACING AND BUILDINGS
- HEDGE TO BE RETAINED
- T, G, W, H REFERENCE tree, group, woodland, hedge
- TREE STEM
- PERMANENT GROUND PROTECTION TO RPA
- PERMANENT ROOT PROTECTION BARRIER TO BE INSTALLED
- EXISTING ROAD TO BE REMOVED
- TEMPORARY TREE PROTECTION FENCE
- PROPOSED DEVELOPMENT
- DETAILED APPLICATION
- OUTLINE APPLICATION

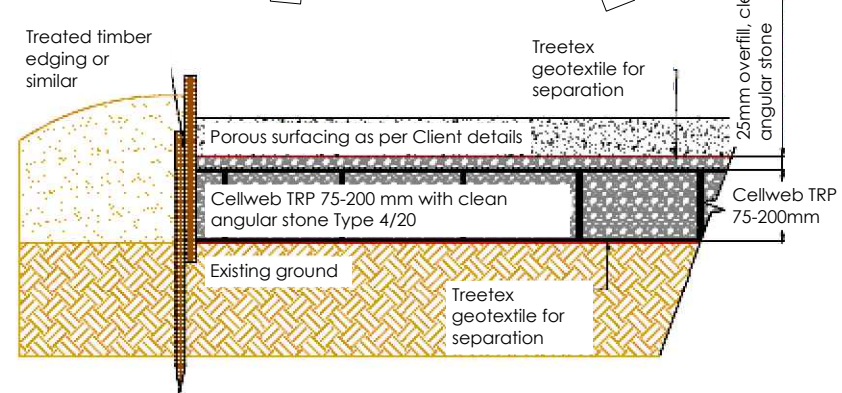
Project	THE BRIDGEWAY CENTRE WREXHAM INDUSTRIAL ESTATE	Dwg No	197/AMS/T/400	Revision	P02	Revision	Date	Details	Drawn	Checked	Reviewed	 mdlandscape 6 Kinderton Close High Legh Knutsford Cheshire WA16 6LZ 07710 498231
						P01	03.06.2024	FOR INFORMATION	MD	XX	XX	
Title	ARBORICULTURAL METHOD STATEMENT TREE PROTECTION PLAN	Scale	1:500 @ A1 / 1:1000 @ A3	Date	06/11/2024	P02	06/11/2024	FOR INFORMATION	MD	XX	XX	 Chartered Member of the Landscape Institute  Landscape Institute  Arboricultural Association

Establishment of the tree root protection area

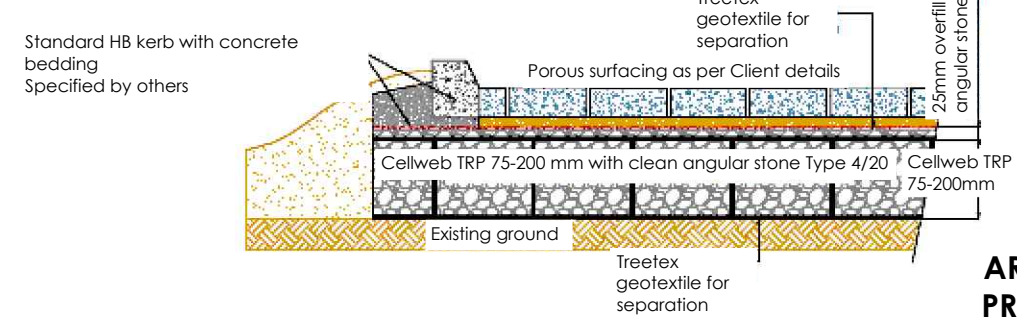
Work within the RPA and any potential pruning requirements must be identified to the Arboricultural consultant to allow a watching brief to be carried out.



Timber Edging



Kerb Edging

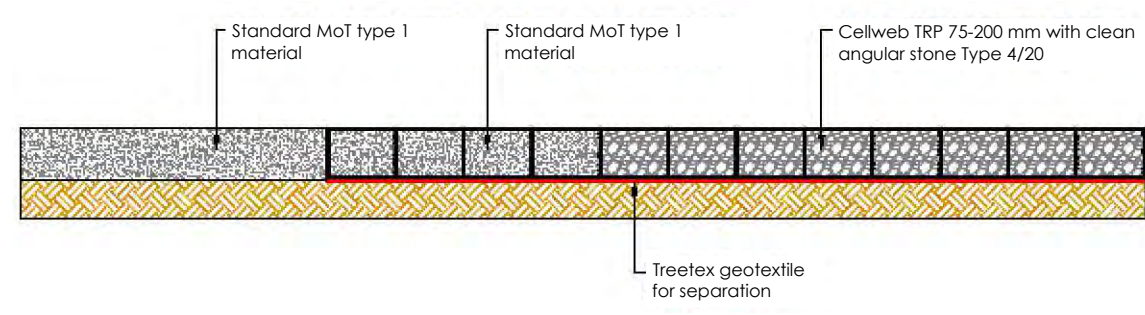


Default specification for protective barrier and associated signage

Example of heavy duty ground protection matting for temporary vehicular access



Example of temporary and permanent ground protection systems such as CellwebTRP

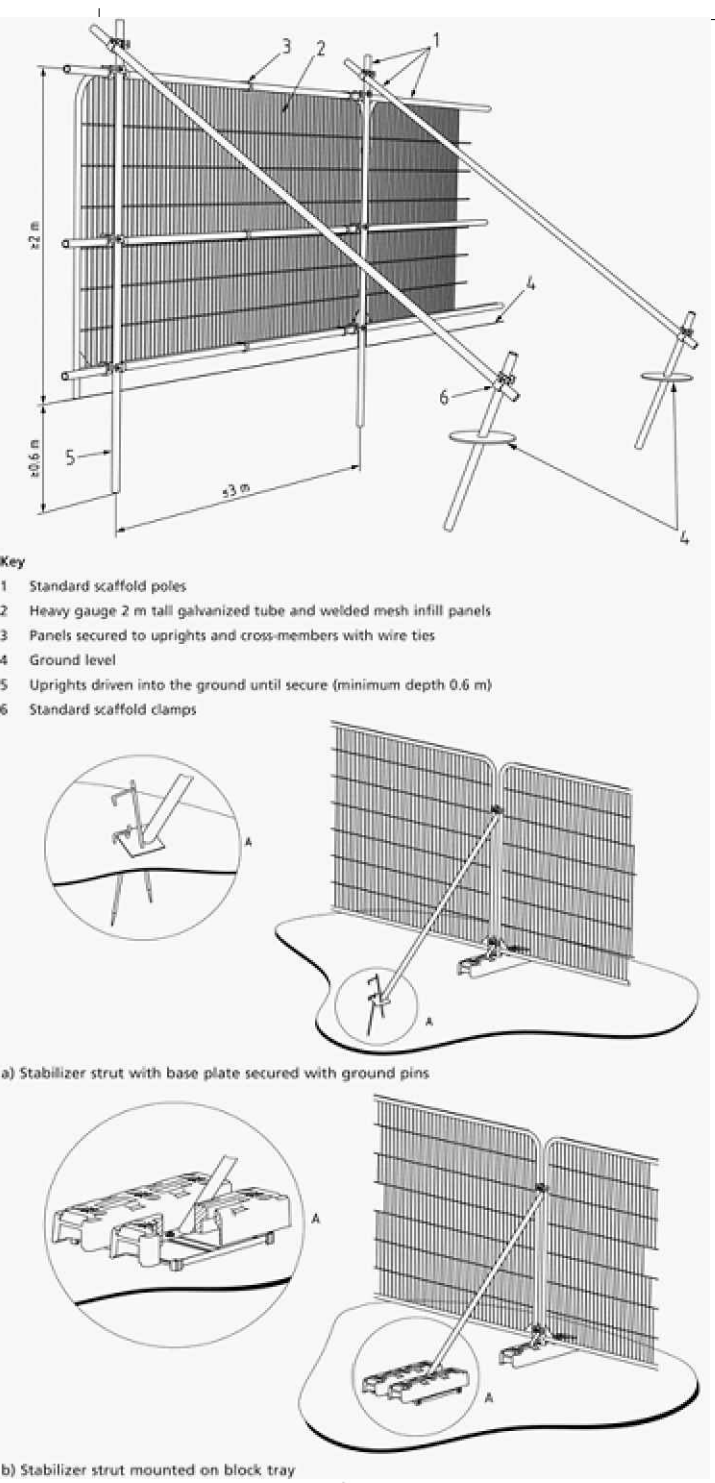


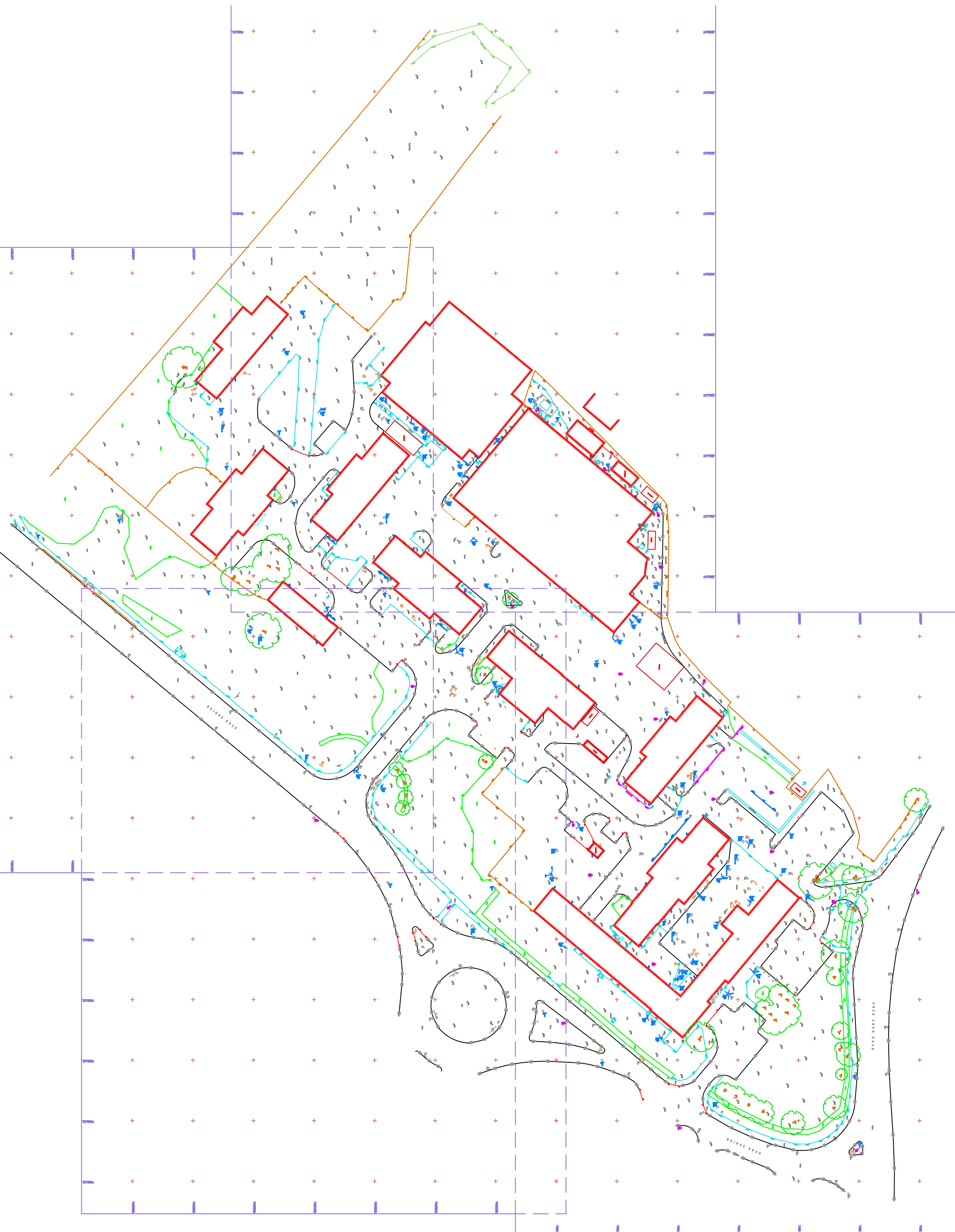
Transition from Cellweb TRP to Crushed Hardcore or MoT Surfacing

Information taken from Cellweb TRP Product Information; please refer to website and Manufacturer for further information and specification

ARBORICULTURAL METHOD STATEMENT PROPRIETARY TREE PROTECTION MEASURES

Drawing references	
197/AIA/T/200	ARBORICULTURAL IMPACT ASSESSMENT TREE REMOVAL PLAN
197/AMS/T/300	ARBORICULTURAL METHOD STATEMENT TREE WORKS PLAN
197/AMS/T/400	ARBORICULTURAL METHOD STATEMENT TREE PROTECTION PLAN
197/AMS/T/500	ARBORICULTURAL METHOD STATEMENT PROPRIETARY TREE PROTECTION MEASURES







Colour	REF	Units	Use	Total block area
	Block B	5	Retail	674sqm / 7255sqft (approx)
	Block C	13	B1-B8	1525sqm / 16419sqft
	Block D	7	B1-B8	694sqm / 7470sqft
	Block E	11	B1-B8	1136sqm / 12227.8sqft
	Block F	2	B1-B8	920sqm / 9902sqft
	Block G	4	B1-B8	540sqm / 5812sqft
	Block H	2	B1-B8	808sqm / 8698sqft
	Block I	4	B1-B8	1362sqm / 14660sqft
	Block J	1	B1-B8	780sqm / 8396sqft
Area Total				8434 sqm / 90782 sqft

2No cycle stores holding total 44 cycles

Parking

Block B	35 total (incl 3 accessible spaces)
Blocks C, D, E	53 total (incl 10 accessible spaces)
Left Side	113 total (incl 9 accessible spaces)
Parking - 201 spaces (including 22 accessible spaces & 6 EV charging spaces)	

Rev	Description	By	Date
P01	Initial Issue	PJ	05.01.21
P02	Amendments - Client Comment	PJ	06.01.21
P03	Amendments - Client Comment	PJ	08.01.21
P04	Amendments to Blocks C and E	MC	21.01.21
P05	Parking added, Block I reduced	MC	15.02.21
P06	Internal Layouts Amended	MC	02.03.21
P07	Detailed Application - Outline Application	MC	17.05.21
P08	Pond Removed	MC	19.11.21
P09	Block A Removed	MC	01.12.21
P10	Detailed Application Boundary Amended	MC	02.12.21
P11	Planning Issue	MC	14.12.21
P12	Updated Site Boundary	MC	20.12.21
P13	Updated Site Boundary	MC	21.12.21
P14	Mezzanine's Removed	MC	22.01.10
P15	Schedule Updated	MC	22.01.17
P16	Block F & I amended, Parking reduced	PJ	22.07.25
P17	Schedule updated		
P18	Phase 1 landscaping zones updated	PJ	24.05.24
P19	Block E updated, Block F removed	EF	25.10.24
P20	Block F 1&2 added, Landscape updated	EF	25.10.28
P21	Parking areas added to Phase 2	PJ	25.10.30
P22	Landscaping changes	LM	31.10.30
	Boundary Line Adjusted	LM	31.10.30

 Detailed Application

 Outline Application



MC AU Modern City Architecture & Urbanism

Eastgate
2 Castle Street
Castlefield
Manchester
M3 4LZ

t: 0161 974 7203
e: info@mcau.co.uk
www.mcau.co.uk

Client
FI Real Estate Management

Project
Site 1, Bridgeway,
Wrexham

Description
Proposed Site Plan

Status
PLANNING

Scale
1:1250@A3

Drawn By
PJ

Date
AUG20

Job Number
1182

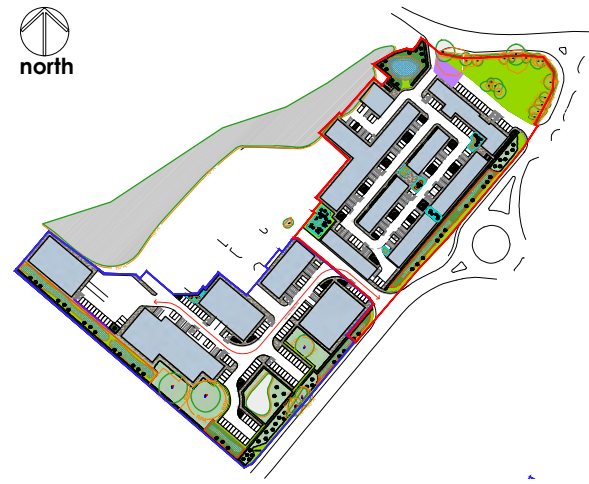
Drawing Number
02-002

Revision
P22



Location Plan

- DETAILED APPLICATION
- OUTLINE APPLICATION



Notes

1. Dimensions are given in metres and millimetres as stated on the drawing.
2. Centre of site is located at approximately grid reference SJ 37822 49380.
3. Drawing must be reproduced in colour.
4. Consideration has been given to the inclusion of SuDS features at the site.
5. A minimum 10m buffer zone of native species hedgerow, mixed species tree and scrub planting and wildflower and grasses is to be created to the south and west of the outline application site and to the east of the detailed application site.

Legend

- EXISTING BUILDING
- EXISTING TREES TO BE RETAINED
- EXISTING TREES - ROOT PROTECTION AREA
- EXISTING TREE TO BE REMOVED
- EXISTING HEDGING TO BE RETAINED
- EXISTING FENCE
- EXISTING SITE LEVELS
- PROPOSED SITE LEVELS
- PROPOSED UNIT/BUILDING
- PROPOSED NATIVE SPECIES STANDARD DECIDUOUS TREE
- PROPOSED NATIVE SPECIES TREE AND SCRUB PLANTING
- PROPOSED ORNAMENTAL SHRUB PLANTING
- PROPOSED NATIVE MIXED SPECIES HEDGING
- PROPOSED RAIN GARDEN WITH HERBACEOUS PERENNIALS, SHRUBS AND GRASSES
- PROPOSED NATIVE SPECIES WILDFLOWER AND GRASSES MIX
- PROPOSED AMENITY SHORT GRASS MIX
- PROPOSED SWALE LOCATION WITH NATIVE SPECIES WILDFLOWER AND GRASSES MIX
- PROPOSED FOOTPATHS
- PROPOSED VEHICULAR ACCESS AREAS AND PARKING
- PROPOSED PERMANENT GROUND PROTECTION TO RPA OF TREES
- TREE MOUNTED BIRD BOXES
- TREE MOUNTED BAT BOXES



LANDSCAPE AND BIODIVERSITY PROPOSALS PLAN

Project	THE BRIDGEWAY CENTRE WREXHAM INDUSTRIAL ESTATE	Dwg No	197/LAND/L/100	Revision	P02	Revision	Date	Details	Drawn	Checked	Reviewed
						P01	18.06.2024	FOR INFORMATION	MD	XX	XX
Title	LANDSCAPE AND BIODIVERSITY PROPOSALS PLAN	Scale	1:500 @ A1 / 1:1000 @ A3	Date	06/11/2024						

Drawing references

197/LAND/L/100	LANDSCAPE AND BIODIVERSITY PROPOSALS PLAN
197/LAND/L/200	PROPOSED PLANTING PLAN
197/LAND/L/400	PLANTING SCHEDULE, SPECIFICATION AND IMPLEMENTATION PLAN
197/LAND/L/500	LANDSCAPE MAINTENANCE AND MANAGEMENT PLAN

Chartered Member of the Landscape Institute

Landscape Institute Registered Practice

Arboricultural Association Registered Practitioner

mdlandscape
6 Kinderton Close | High Legh | Knutsford
Cheshire | WA16 6LZ | 07710 498231

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11 APPENDICES

APPENDIX 1 - ARBORICULTURAL SURVEY DATA SHEETS – refer to Tree Constraints Plans 197/T/050, 100, 101, 102 inclusive.

Tree ref	Species	Height	Stem dia.	Crown spread			Height of crown clearance	Height and direction of lowest branch	Maturity	Condition	Comments on form condition, health and significant defects	BS5837 Tree Quality Category	Radius of RPA	Management recommendations	Estimated remaining contribution
T - individual G - group W - Woodland H - Hedgerow	Latin name	m	mm		N		m		Young; Middle Age; Mature	Good; Fair; Poor; Veteran		A, B, C, U	m		less than 10yrs, 10-20, 20-40, 40yrs+
	Common name			W		E		(1,2,3)							
					S										
HEDGES															
H1	Crataegus monogyna (hawthorn)	1.5							over 30 years	Good	Single species hedgerow; well maintained; robust; no gaps; occasional occurrence of holly, oak				
H2	Prunus laurocerasus (Cherry laurel)	0.75							young	Fair	Low juvenile hedge plants smothered by bramble and ruderal growth				
H3	Ligustrum vulgare (wild privet)	1.5							up to 30 years	Good	Single species hedgerow; well maintained; robust; no gaps				
H4	Crataegus monogyna (hawthorn)	3							over 30 years	Good	Remnant section of hedgerow; unmanaged; 1.5m wide				
H5	Taxus baccata (yew)	1.5							up to 30 years	Good	Dense, robust growth, well maintained; 2m wide; part of entrance feature with trees for business park				
TREES, GROUPS AND WOODLAND															
T1	Prunus sp. (ornamental cherry)	5	240	3.5	1.7 1.6	3	2	E 1.5	Middle Age	Fair	Bifurcate at 1.5m; asymmetric growth; a tree of low value in the landscape	C1	2.88		<10 years
T2	Prunus sp. (ornamental cherry)	8	380	5.4	3.6 3.6	6	2	S 2	Early Mature	Good	Upright spreading crown; raised roots in grass; mower damage; a tree of moderate value in the landscape	B2	4.56		20-40 years
T3	Prunus cerasifera (cherry plum)	6	330	4.4	5 3.2	6	1.8	E 1.8	Early Mature	Good	Upright spreading crown; trifurcate at 2m; epicormic growth typical of species type; raised roots in grass; mower damage; a tree of moderate value in the landscape	B2	3.96		20-40 years
T4	Acer pseudoplatanus (sycamore)	8	330	3.4	3.4 3	3.4	3	E 2	Early Mature	Good	Upright growth; a stems arising at 2m; narrow growth; a tree of low value in the landscape	C2	3.96		10-20 years
T5	Betula pendula (silver birch)	8	310	3.9	5 4.6	5	2	E 2	Early Mature	Good	Bifurcate at 2.2m and further branching; pendulous overhanging hedge; a tree of moderate value in the landscape	B2	3.72		20-40 years

Tree ref	Species	Height	Stem dia.	Crown spread			Height of crown clearance	Height and direction of lowest branch	Maturity	Condition	Comments on form condition, health and significant defects	BS5837 Tree Quality Category	Radius of RPA	Management recommendations	Estimated remaining contribution
T - individual G - group W - Woodland H - Hedgerow	Latin name	m	mm		N		m		Young; Middle Age; Mature	Good; Fair; Poor; Veteran		A, B, C, U	m		less than 10yrs, 10-20, 20-40, 40yrs+
	Common name			W		E						(1,2,3)			
					S										
T6	Acer pseudoplatanus (sycamore)	7	310	3.8	3.5 3.8	3	2.5	S 1.8	Middle Age	Fair	Multi-branching at 2m; buckling evident to scaffold branch; ivy at base	C2	3.72		10-20 years
T7	Prunus sp. (ornamental cherry)	7	270	5	5 5	3.8	2	S 1.5	Middle Age	Good	Upright growth; previous pruning wounds; epicormic growth; tree of low value in the landscape	C2	3.24		10-20 years
T8	Prunus sp. (ornamental cherry)	5	170	2.5	4 3.1	3.7	1.8	W 1.5	Semi-mature	Good	Upright growth; crossing branches; tree of low quality in the landscape	C1	2.04		<10 years
T9	Quercus robur (English oak)	14	620	6.1	6.5 6.5	6.5	2	E 2.5	Mature	Good	Upright growth; spreading crown; evenly developed branch structure; tree of moderate value in the landscape	B1	7.44		20-40 years
T10	Prunus cerasifera (cherry plum)	4	150	2.5	2.5 2.3	1.4	1.8	W 1.5	Semi-mature	Good	Splits to stem; basal decay; tree of low quality in the landscape	C1	1.8		<10 years
T11	Betula pendula (silver birch)	14	300	3.2	3.2 3.7	2.8	2	S 2	Middle Age	Good	Upright growth; good form and vigour; tree of moderate quality in the landscape	B2	3.6		20-40 years
T12	Acer pseudoplatanus (sycamore)	10	360	2.7	5.1 4.5	4.8	2.5	W 2	Middle Age	Good	Multi-branching at 2m; previous pruning wounds to aspect with road	B2	4.32		20-40 years
T13	Betula pendula (silver birch)	14	410	3.7	5 3.7	5.3	1.5	W 3	Middle Age	Good	Upright growth; damaged leader but recovering; tree of moderate quality in the landscape	B2	4.92		20-40 years
T14	Acer pseudoplatanus (sycamore)	5	140	2.6	2.4 1.7	1.5	1.8	E 1.5	Semi-mature	Good	Upright growth; young tree; tree of low quality in the landscape	C1	1.68		10-20 years
G1	Thuja plicata (Western red cedar)	3		see plan					Middle Age	Good	small group; pruned and maintained to height	C2	see plan		10-20 years
T15	Betula pendula (silver birch)	12	290	5.4	2.9 3.4	2.6	2	S 2.5	Middle Age	Good	Upright growth; bifurcate at 2.5m; asymmetry of crown to west; tree of moderate value in the landscape	B2	3.48		20-40 years
T16	Acer pseudoplatanus (sycamore)	6	230	3.7	3.7,3.2	3.8	2	S 2.5	Semi-mature	Good	Sparse branching structure; tree of poor form and vigour; low quality in the landscape	C1	2.76		<10 years
T17	Prunus 'Kanzan'	6	330	3.6	5 3	4.5	1.5	S 1.5	Middle Age	Fair	Multi-branching at 1.5m; spreading crown typical of species type; fruiting bodies to upper branches; tree in decline	C2	3.96		<10 years

Tree ref	Species	Height	Stem dia.	Crown spread			Height of crown clearance	Height and direction of lowest branch	Maturity	Condition	Comments on form condition, health and significant defects	BS5837 Tree Quality Category	Radius of RPA	Management recommendations	Estimated remaining contribution
T - individual G - group W - Woodland H - Hedgerow	Latin name	m	mm		N		m		Young; Middle Age; Mature	Good; Fair; Poor; Veteran		A, B, C, U	m		less than 10yrs, 10-20, 20-40, 40yrs+
	Common name			W		E						(1,2,3)			
					S										
T18	Quercus robur (English oak)	16	870	4	7.6 5.5	7.8	1.8	E 3	Mature	Fair	Upright form and bifurcate at 3.5m; dieback to crown and epicormic growth; broken limbs; located at edge of road; historic wound to base and branch loss; probable root damage and restricted growth due to hard surface; habitat value; tree of moderate value in the landscape	B3	10.44	Monitor condition and reinspect annually	10-20 years
T19	Thuja plicata (Western red cedar)	16		see plan					Middle Age	Good	small group; partially pruned	C2	see plan		10-20 years
G2	Salix fragilis (crack willow)	7		see plan					Mature	Fair	Previously felled trees now with profuse regrowth from bole	C3	see plan		<10 years
W1	Quercus robur (English oak)										Woodland belt following drain/watercourse adjacent to fence line; varied age structure but with high percentage of mature specimens; forms buffer and screening between development; only surveyed from south edge where access available; high landscape and habitat value				
	Prunus avium (wild cherry)														
	Crataegus monogyna (hawthorn)	16		see plan					Middle Age	Good		A2	see plan		20-40 years
	Salix fragilis (crack willow)								Mature						
	Prunus spinosa (blackthorn)														
	Betula pendula (silver birch)														
G3	Betula pendula (silver birch)	8	190; 190	see plan			1.2	W 1.2	Semi-mature	Fair	Two trees in triangular bed within car park; one of poor quality and broken branches; trees of low quality in the landscape; rooting likely impeded by hard surfacing and constrained within kerb area	C1	see plan		10-20 years
T20	Fraxinus excelsior (ash)	12	310; 290	4.8	8.6 6	3.4	1.2	S 1.2	Early Mature	Good	Bifurcate at base with spreading habit; tree of moderate value in the landscape	B2	4.2		20-40 years
T21	Crataegus monogyna (hawthorn)	5		2	2 2	2	1		Mature	Good	End plant of hedge, developing into small tree having been left unmanaged	C2	0		10-20 years
T22	Crataegus monogyna (hawthorn)	6	300	5.3	4.7 4.7	3.3	2	E 1.5	Mature	Good	Multi-stemmed mature tree with six stems arising at base	B2	3.6		20-40 years
G4	Sorbus aria (whitebeam)	4	up to 220	see plan			0.5		Young	Good	Multi-stemmed/feathered small trees within planting bed	C2	see plan		10-20 years
G5	Acer campestre (field maple)	6	ave 240	3.5	3.5 3.5	3.5	1.8		Middle Age	Good	Group of 8 trees within yew hedge as feature to entrance to business park; all of	B1	2.88 each		20-40 years

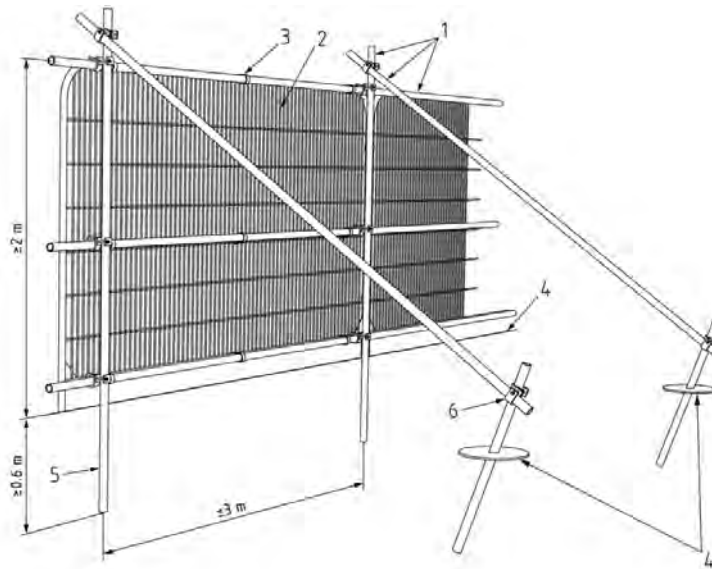
Tree ref	Species	Height	Stem dia.	Crown spread			Height of crown clearance	Height and direction of lowest branch	Maturity	Condition	Comments on form condition, health and significant defects	BS5837 Tree Quality Category	Radius of RPA	Management recommendations	Estimated remaining contribution
T - individual G - group W - Woodland H - Hedgerow	Latin name	m	mm		N		m		Young; Middle Age; Mature	Good; Fair; Poor; Veteran		A, B, C, U	m		less than 10yrs, 10-20, 20-40, 40yrs+
	Common name			W		E						(1,2,3)			
					S										
											good health, form and vigour; trees of moderate value in the landscape				
T23	Sorbus aria (whitebeam)	4	160	2	2 2	2	1.8	W 2	Semi-mature	Fair	Lacking in vigour and poor form; tree of low value in the landscape	C1	1.92		10-20 years
G6	Sorbus aria (whitebeam)	4	100-200	see plan			1.5		Semi-mature	Fair	Trees of variable form and vigour but forming feature planting to roadside; of moderate value in the landscape	B2	see plan		10-20 years
T24	Fraxinus excelsior (ash)	3	75	1.5	1.5 1.5	1.5	0		Young	Good	Multi-stemmed of good vigour; potential to develop into tree of moderate value in the landscape	C2	0.9		10-20 years
T25	Betula pendula (silver birch)	4	100	1	1 1	1	0		Young	Good	Single stemmed, feathered, good form and vigour; potential to develop into tree of moderate value in the landscape	C2	1.2		20-40 years
T26	Betula pendula (silver birch)	8	290	2	2.2 2	2.3	2	N 1.5	Early Mature	Good	Bifurcate at 1.7m but strong apical dominance; tree of moderate value in the landscape	B2	3.48		20-40 years
G7	Acer saccharinum 'Laciniata' (Silver maple)	8	320; 280	see plan			1.8	E 2	Middle Age	Good	Open spreading crown; good form and vigour; pruning wound to western of the two with woundwood present and healing; trees of moderate value in the landscape	B1			20-40 years
G8	Betula pendula (silver birch)	10	ave 250	see plan			2		Early Mature	Good	Group of three trees with ivy and shrubs to base; trees of low value in the landscape	C2			10-20 years
G9	Betula pendula (silver birch)	14	up to 450	see plan			2		Mature	Good	Group of five trees with good spacing within grassed area but used for informal car parking; one individual multi-stemmed at base with 6 stems arising; moderate value in the landscape	B1			20-40 years
T27	Quercus robur (English oak)	14	540	5.2	7.7 6.4	6.1	3	S 4	Mature	Good	Single stem spreading crown; healthy bud development; good form and vigour; covers and services present w3ithin 2m of tree stem; tree of high value in the landscape	A2	6.48		40 years +
T28	Fagus sylvatica (beech)	14	560	7.3	8.5 8.35	5.1	1.2	W 2	Mature	Fair	Growing on boundary with wall at base; buried root flare, ground level changed; bifurcate at 1.8m; co-dominant stems with U-shaped tension fork and potential buckling to one stem and has major bark loss to circumference on the other; no cracks evident; descending branches; some root girdling; tree of moderate value in the landscape	C2	6.72	Monitor condition and reinspect annually; re-inspect in spring/summer 2022 to assess whether dieback is present above bark damage and inspect annually for changes in bark appearance, buckling to other stem; provisionally categorised as C2	10-20 years

Tree ref	Species	Height	Stem dia.	Crown spread			Height of crown clearance	Height and direction of lowest branch	Maturity	Condition	Comments on form condition, health and significant defects	BS5837 Tree Quality Category	Radius of RPA	Management recommendations	Estimated remaining contribution
T - individual G - group W - Woodland H - Hedgerow	Latin name	m	mm		N		m		Young; Middle Age; Mature	Good; Fair; Poor; Veteran		A, B, C, U	m		less than 10yrs, 10-20, 20-40, 40yrs+
	Common name			W		E						(1,2,3)			
					S										
T29	Quercus robur (English oak)	18	1070	9	9 10.2	9	3	E 2	Mature	Good	Single stem spreading crown; healthy bud development; good form and vigour; significant prominent tree; under pressure due to land use, car park and garage facility; minor damage to root flare and minor die back and dead wood in canopy as is typical of species profile; potential veteran tree status; tree of high value in the landscape; potential veteran tree	A3	12.84		40 years +
T30	Quercus robur (English oak)	18	960	9.5	8.5 10.4	8.5	3	S 2.5	Mature	Good	Upright with spreading crown extending over adjacent buildings; low scaffold branch; ivy present; under pressure due to land use, car park and garage facility; minor die back and dead wood in canopy as is typical of species profile; tree of high value in the landscape; potential to develop into veteran tree	A3	11.52		40 years +
G10	Acer pseudoplatanus (sycamore)	8		see plan					Semi-mature	Good	Dense group of hawthorn and sycamore; no access for detailed inspection	C2			10-20 years
	Crataegus monogyna (hawthorn)												-		
T31	Quercus robur (English oak)	8	450	4.2	6.2 5.9	5.9	1	not recorded	Middle Age	Good	Single stem with upright habit; good form and vigour; low branching and spreading crown; tree of high value in the landscape	A2	5.4		40 years +
T32	Acer campestre (field maple)	8	600	4.7	6.2 6.2	4.2	1	not recorded	Middle Age	Good	Multi-stemmed at base with spreading habit and good form and vigour; tree of high value in the landscape	A2	7.2		40 years +
G11	Fraxinus excelsior (ash)										Group including T31, T32; one oak and two young ash, juvenile Scot's pine with leader pruned out with stakes and cross bars; scrub; group of low value in the landscape				
	Pinus sylvestris (Scots pine)													Remove redundant planting accessories	
	Corylus avellana (hazel)	4	under 100	see plan						Good		C2	see plan		10-20 years
	Prunus spinosa (blackthorn)										Screening value; group of moderate value in the landscape				
G12	Quercus robur (English oak)														
	Fraxinus excelsior (ash)														
	Pinus sylvestris (Scots pine)	10	up to 440	see plan					Middle Age	Good		B2	see plan		20-40 years
	Corylus avellana (hazel)														
	Sorbus aucuparia (rowan)														
	Acer campestre (field maple)														

Tree ref	Species	Height	Stem dia.	Crown spread			Height of crown clearance	Height and direction of lowest branch	Maturity	Condition	Comments on form condition, health and significant defects	BS5837 Tree Quality Category	Radius of RPA	Management recommendations	Estimated remaining contribution
T - individual G - group W - Woodland H - Hedgerow	Latin name	m	mm		N		m		Young; Middle Age; Mature	Good; Fair; Poor; Veteran		A, B, C, U	m		less than 10yrs, 10-20, 20-40, 40yrs+
	Common name			W		E						(1,2,3)			
					S										
	Cornus sanguinea (dogwood)														

APPENDIX 2 – EXAMPLES OF TREE PROTECTION SYSTEMS

(Extracts taken from BS5837: (2012), “Trees in relation design, demolition and construction – Recommendations”.)

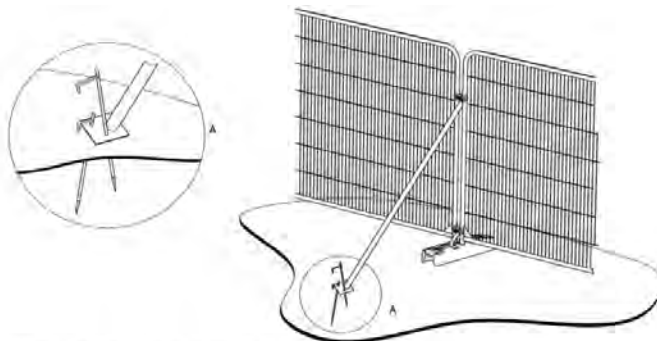


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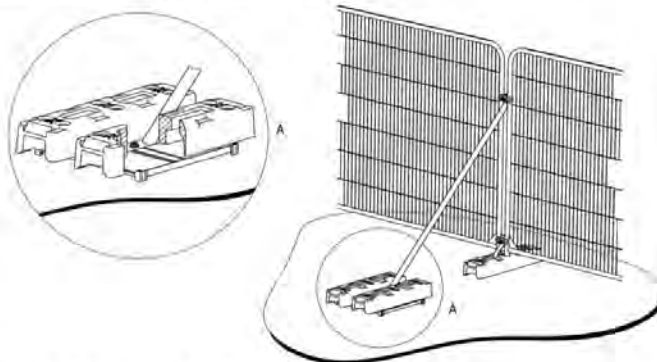
- 1 Standard scaffold poles
- 2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
- 3 Panels secured to uprights and cross-members with wire ties
- 4 Ground level
- 5 Uprights driven into the ground until secure (minimum depth 0.6 m)
- 6 Standard scaffold clamps

10.

Default specification for protective barrier



a) Stabilizer strut with base plate secured with ground pins



11. b) Stabilizer strut mounted on block tray

APPENDIX 3 – TREE PROTECTION SIGNAGE



TREE PROTECTION FENCING

**THIS FENCE MUST BE MAINTAINED
IN ACCORDANCE WITH THE
APPROVED METHOD STATEMENT
AND DRAWINGS FOR THIS
DEVELOPMENT**



TREE PROTECTION AREA

**ACCESS INTO THIS AREA IS
PROHIBITED FOR THE DURATION OF
THE DEVELOPMENT IN ACCORDANCE
WITH THE APPROVED METHOD
STATEMENT FOR THIS DEVELOPMENT**

APPENDIX 4 3D CELLULAR CONFINEMENT SYSTEM, eg CELLWEB TRP OR EQUIVALENT PRODUCT

APPENDIX 5 – ARBORICULTURAL INSPECTION PROFORMA - EXAMPLE

Part 1 Project details

RECORD OF ARBORICULTURAL INSPECTION		Inspection by	Arboricultural Consultant	Visit number		Date of visit	
		Signed		Work stage			
		Accompanied by		Activities inspected			
		Signed		Weather conditions			
	PROJECT DETAILS						
	Title and Address		Drawing Title		Drawing Number		Version
	Planning application reference						
	Tree Preservation Order and/or Conservation Area Details						
	Other Site Constraints						
	<i>Add other information as required</i>						

Part 2 Record of arboricultural inspection – *inspections will generally be undertaken every 4-8 weeks depending on progress of the works and complexity, unless specific visits are programmed to coincide with planned site activities. Planned dates to be entered in the table once programme of works is known.*

Ref	Work stage <i>Add or delete as relevant to specific works</i>	Activity requiring on site attendance by Arboriculturist <i>Add or delete as relevant to specific works</i>	Planned date of inspection	Actual date of inspection	Inspection details and comments	Compliance with AMS	Follow up action required
1	Advance works	Prestart meeting for tree works					
		Marking out for trees to be removed					
		Commencement of tree works					
		Completion of tree works					
		Commencement of installation of tree protection fencing					
		Completion of installation of tree protection fencing					
		Periodic monitoring (depending on timing of specific inspection visits)					
2	Site clearance and demolition	Toolbox talk					
		Removal of above ground structures within the crown spread or RPA of trees to be retained					
		Removal of hard standing and below ground structures or features within the crown spread or RPA of trees to be retained					
		Periodic monitoring (depending on timing of specific inspection visits)					
3	Construction works	Toolbox talk					
		Excavation or works within RPA of trees to be retained					
		Reprofiling of ground levels within RPA of trees to be retained					

Ref	Work stage <i>Add or delete as relevant to specific works</i>	Activity requiring on site attendance by Arboriculturist <i>Add or delete as relevant to specific works</i>	Planned date of inspection	Actual date of inspection	Inspection details and comments	Compliance with AMS	Follow up action required
		Installation of services within RPA of trees to be retained					
		Installation of ground protection below temporary hard standing within RPA of trees to be retained					
		Installation of ground protection below permanent hard standing within RPA of trees to be retained					
		Periodic monitoring (depending on timing of specific inspection visits)					
4	Landscape reinstatement	Toolbox talk					
		Soiling within RPA of trees to be retained					
		Land drainage within RPA of trees to be retained					
		Turfing and Seeding within RPA of trees to be retained					
		Planting within RPA of trees to be retained					
		Periodic monitoring (depending on timing of specific inspection visits)					
5	Completion	Removal of tree protection fencing					
		<i>Add other activities as required relevant to the project and construction activities</i>					

Part 3 Follow up actions identified during inspection

Ref	Follow up action required	Date completed	Comments and / or photographs from site team	Follow up or close out

Part 4 Evidence of arboricultural inspection

	PHOTOGRAPHS TAKEN DURING SITE VISIT	Date

Part 5 Circulation of record of inspection

	RECORD OF INSPECTION ISSUED BY		
	<i>Print name</i>	<i>Signature</i>	<i>Date</i>

RECORD OF SITE INSPECTION ISSUED TO THE FOLLOWING

ISSUE	PROJECT CONTACTS	NAME	CONTACT NUMBER	EMAIL THE BRIDGEWAY CENTRE	ROLES AND RESPONSIBILITIES FOR ARBORICULTURAL ISSUES ON SITE
☐	Construction Manager				• Delivery of project and compliance with legal requirements and planning consents relating to the project
☐	Site Construction Manager				• Ensure compliance with the Arboricultural Method Statement, monitor performance of construction site staff and sub-contractors and maintain records to demonstrate compliance with and implementation of the Arboricultural Method Statement; and • Main contact for any Third Party queries and shall keep a record of any Third Party contacts and any follow up actions that may be taken.
☐	Construction Manager with responsibility for environmental compliance / Environmental Advisor / or Environmental Clerk of Works				• Delivery of tool box talks for inductions of construction site staff and sub-contractors to ensure arboricultural protection methods are effectively communicated to the site team; • Undertake daily audits of tree protection fencing, ground protection fencing and compliance with the Arboricultural Method Statement; and • Liaises and cooperates with the Arboricultural Consultant at each site inspection and for the duration of the project
☐	Arboricultural Consultant				• Delivery of initial tool box talk for construction site staff to ensure arboricultural protection methods are effectively communicated to the site team; • Undertake site inspections at key work stages identified in the programme and at 8 weekly intervals during the course of the construction project; and • Report to the Local Planning Authority within 3 days of each inspection
☐	Site construction team and sub-contractors	Updated information on arboricultural constraints to be issued to site team as part of regularly site briefings, inductions and tool box talks			• Work to agreed Arboricultural Method Statements, plans and procedures and minimise environment impacts; • Understand the importance of maintaining arboricultural protection on site and maintaining the integrity of the tree protection fencing; • Understand the importance of avoiding pollution, including silt run-off, dust, escape of fuel, chemicals, cement and concrete; • Report all incidents immediately to the Environment Construction Manager; and • Monitor the site for potential environmental risks and engage with co-workers to be proactive and ensure method statements, plans and procedures are complied with
☐	Third Party Co-ordinator / Project Co-ordinator / Customer Co-ordinator				• Liaison with Local Planning Authority, stakeholders and Third parties
☐	Arboricultural Contractor				• Undertake tree removal and pruning requirements prior to commencement of construction;

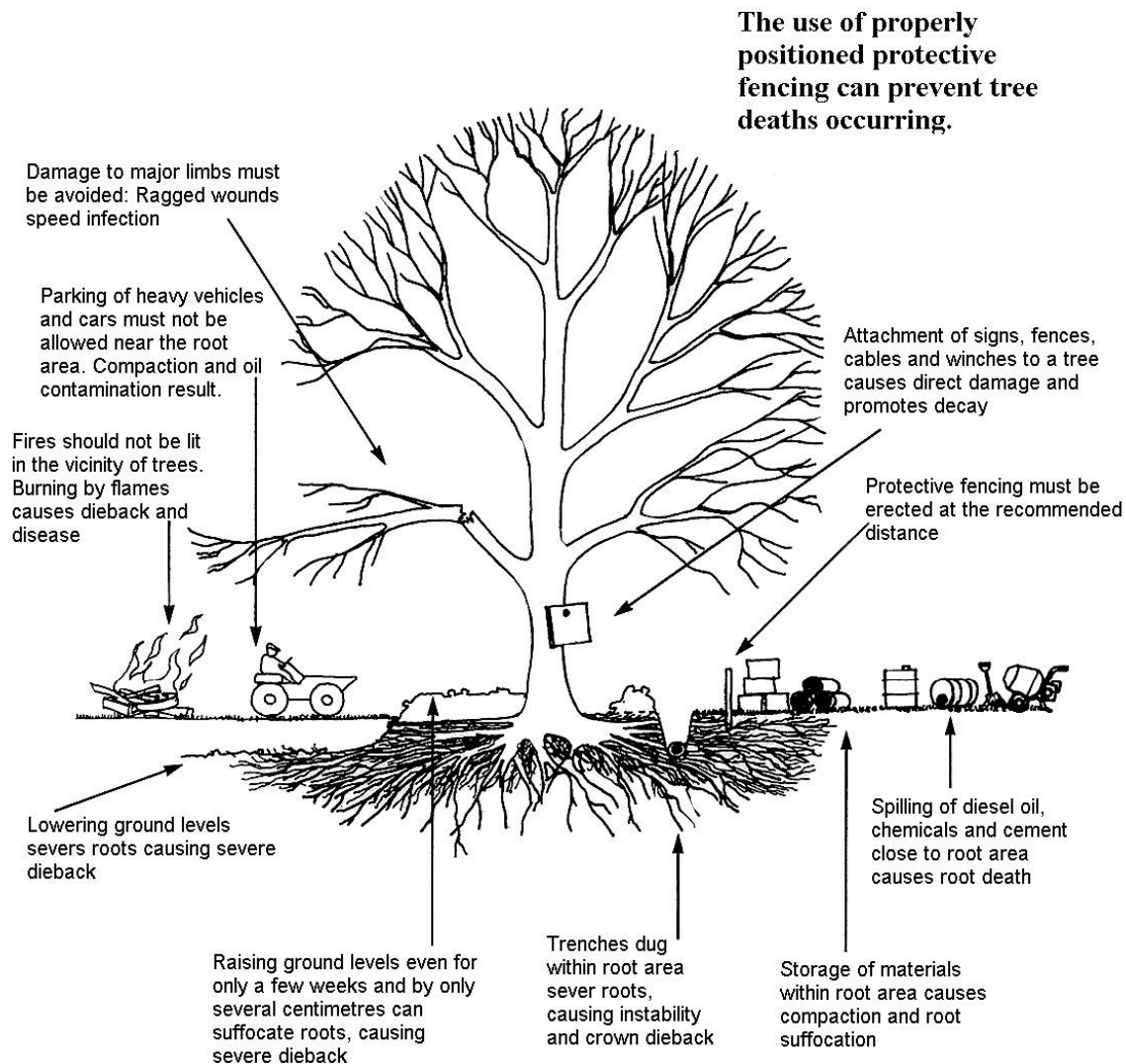
ISSUE	PROJECT CONTACTS	NAME	CONTACT NUMBER	EMAIL THE BRIDGEWAY CENTRE	ROLES AND RESPONSIBILITIES FOR ARBORICULTURAL ISSUES ON SITE
					• Works to be in accordance with approved planning drawings; and • Works to be undertaken with regard to environmental and ecological constraints, such as nesting and breeding birds, bats, proximity to watercourse
☐	Ecology Consultant				• Advise on ecological constraints at the site
☐	Local Authority, include Tree Officer details where known				
	<i>Additional contacts</i>				

Part 6 Reporting procedure:

- Undertake site inspection and record comments (Parts 2);
- Discuss any follow up actions immediately with the responsible person on site for environmental compliance and set date for completion of actions (Part 3) where possible rectification works should be undertaken as soon as possible, exceptions to this may include works to protected trees that requires additional consent or work that may require LPA approval before proceeding;
- Add evidence of rectification works or follow up actions to inspection record in Part 3;
- Add photographic record of site visit inspection in Part 5; and
- Issue record of inspection to nominated person for liaison with Local Planning Authority (LPA) or direct issue of record of inspection to LPA, project team and site team as per circulation list.

APPENDIX 6 – COMMON CAUSES OF TREE DEATH POSTER

Common causes of Tree Death



Please use copies of this as an on-site poster for personnel

APPENDIX 7 - GLOSSARY OF TERMS

Maturity	Newly planted - Not fully established and capable of being transplanted or easily replaced
	Young - Establishing, usually with good vigour, still capable of being transplanted or replaced
	Early mature - Established, usually vigorous and increasing in height
	Semi-mature – Established with an overall height in excess of 4 metres and or a stem girth measurement (circumference) of 20 centimetres or larger;
	Middle Age - Trees in the established growth stage of their life with the potential to continue increasing in size;
	Mature - Trees that have reached their ultimate size, given their location and surroundings;
	Over-mature - Fully mature, in last quarter of life expectancy, vigour decreasing
Condition	Good, Fair, Poor. An overall assessment of a tree's physiological and structural state
Veteran	Trees that have biological, cultural or aesthetic value due to age and / or condition. Typically trees that may be living beyond their expected age range for their species
BS 5837 Tree Quality Assessment	The tree quality assessment is based on four categories (A, B, C and U) are used to denote tree quality (A= High, B = Moderate, C = Low, U= Unsuitable for retention). Subcategories (1-3) denote the specific function value of the trees and the reasoning behind the allocation of a specific category.
Root Protection Area (RPA)	The theoretical rooting area of a tree as defined in <i>BS5837: 2012</i> . RPA is allocated to ensure that a sufficient area is left undisturbed during development. It is provided as an area (m ²) and as the radius of a circle (m) typically plotted from the centre of the stem.
Estimated Remaining Contribution	The approximate life expectancy as healthy functioning tree and relates to species and the condition of the tree at the time of survey. Long > 40 years Medium 20 – 40 years Short – Medium 10- 20 years Short - Imminent removal <10years
Adventitious or Epicormic shoots	Small branches that grow in clusters around the stem or base of a tree in an uncharacteristic fashion for a normally healthy tree, usually at the site of pruning wounds or as an indicator of stress
Bifurcate	Divided into two branches or forks
Buckling	Deformation of a structure subjected to a bending load Buttress zone, irreversible.
Chalara – Ash dieback	Chalara dieback of ash, also known as Chalara or ash dieback, is a disease of ash trees caused by a fungus called <i>Hymenoscyphus fraxineus</i>
Decurrent	The tree crown is borne on several major wide spreading limbs of similar size
Defect	A feature which detracts from the uniform distribution of mechanical stress, or which makes the tree mechanically unsuited to its environment
Dieback	A condition in which a tree or shrub begins to die from the tip of its leaves or roots backwards, owing to disease or an unfavourable environment.
Disease	A malfunction or destruction of tissues usually caused by pathogens.
Dominance	The tendency for a leading shoot to grow faster than the lateral shoots; also a tree that maintains a taller crown than its neighbours.
Excurrent	A well-defined central main stem to the crown, bearing branches which are limited in their length, diameter and secondary branching.
Flush-cut	A pruning cut which removes part of the branch bark ridge and or branch-collar.
Girdling root	A root which circles and constricts the stem.

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