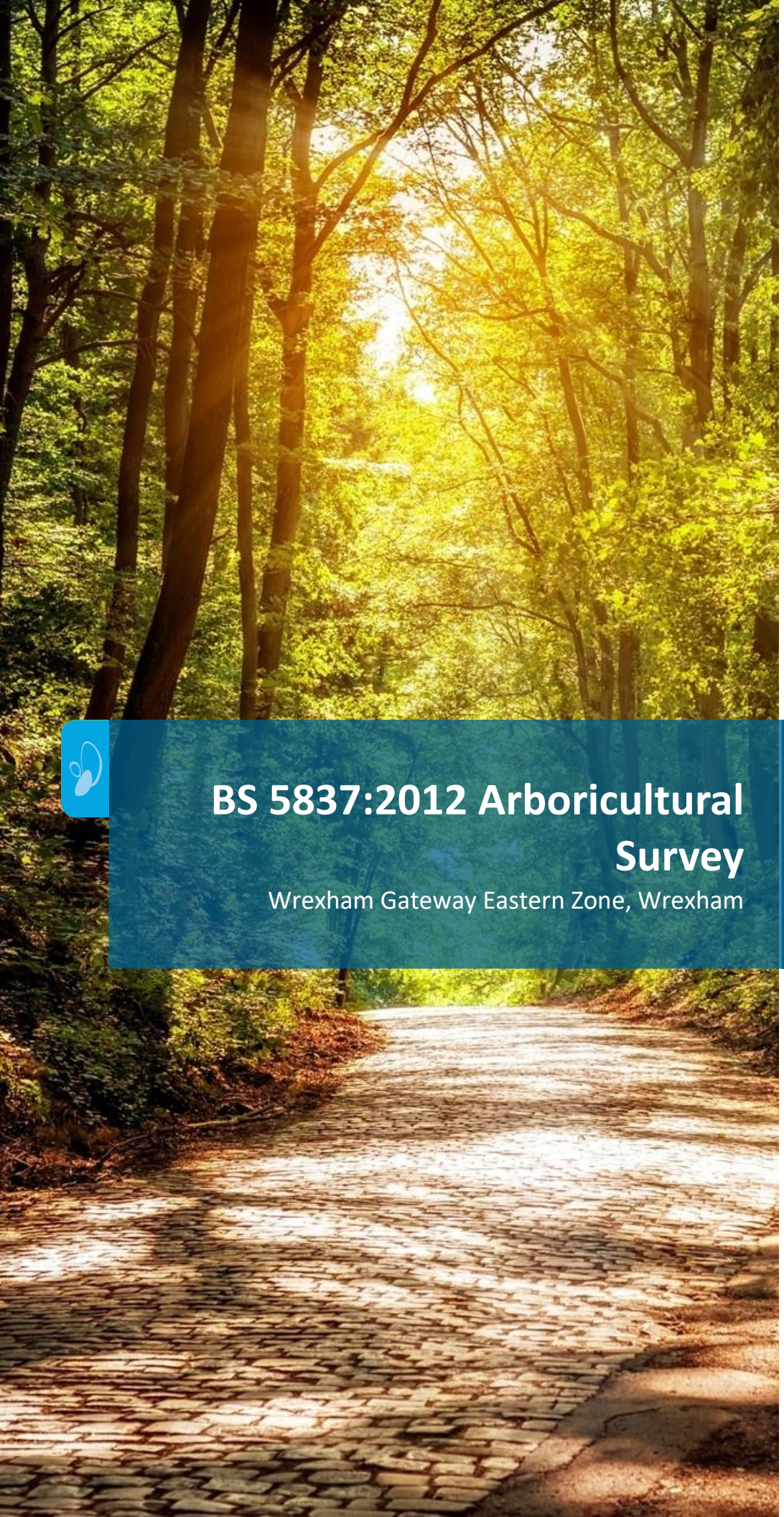

BS 5837:2012 Arboricultural Survey

Wrexham Gateway Eastern Zone, Wrexham

Antea®Group

Understanding today.
Improving tomorrow.

PREPARED FOR
Cushman & Wakefield

ISSUED:
25th June 2025

PROJECT NUMBER
2025-05-573669

anteagroup.uk

Key Details

Client Name	Cushman & Wakefield
Site Address	Wrexham Gateway, Station Approach, Wrexham LL11 2AA
Antea Group UK Contact	Peter Morrell (Peter.morrell@anteagroup.uk)
Project Reference	2025-05-573669

Document Control

Issue No.	Status	Issue Date	Comments
1	Final	23rd June 2025	
2	Final	25th June 2025	Updated following changes to boundary and development description.

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BS 5837:2012 Arboricultural Survey

1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE OF THE SURVEY

Antea Group UK ('Antea') was instructed by Cushman & Wakefield (the 'Client') to undertake an Arboricultural Survey to BS 5837:2012 standard. The survey was undertaken on 9th June 2025 at Wrexham Gateway Eastern Zone, Station Approach, Wrexham LL11 2AA (hereafter referred to as 'the Site'). The Site location and the area surveyed are shown in Figure 1. The survey was undertaken to inform a report to be used as part of a Pre-Planning Application for the re-development of the Site.

The aims of the Tree Survey were to:

- Identify the individual tree species present at the Site by means of visual inspection;
- Define the approximate age, condition and canopy spread of all individual trees over 150 mm diameter at a height of 1.5 m from the base of the tree, and the value of these within the development;
- Identify any trees that present a risk to existing or proposed foundations or other structures that may be constructed on the Site and recommend actions to remove this risk; and
- Recommend tree management or mitigation measures where appropriate.

1.2 SITE DESCRIPTION

The Site is centred at Ordnance Survey (OS) grid reference SJ 33025 50908 to the north-west of the centre of Wrexham Clwyd. The Site covers an area of 3.8 hectares (ha) and comprises Wrexham General railway station and associated infrastructure, a former builders merchant with service yard and a scout hut and nursery with areas of car parking. Station Approach also forms part of the Site with areas of both soft and hard landscaping present.

Residential housing stands beyond the boundaries to the north and east, while commercial units and a hotel are separated from the Site to the south by the A451 Mold Road. Wrexham AFC stadium stands beyond Crispin Lane to the west.

The Site layout and area surveyed is shown in Figure 2.

1.3 PROPOSED DEVELOPMENT

It is understood that the Site is proposed for re-development with an outline planning application for new commercial office building, creation of public realm and landscaping, conversion of existing buildings to brewery, with associated museum and taproom/restaurant, accessibility improvements including new highway infrastructure and pedestrian footbridge, including parking facilities and coach/taxi drop off, with all matters reserved except for access.

2.0 LEGISLATION

2.1 TREES

Local Planning Authorities (LPAs) look upon trees as being highly beneficial to the locality. To ensure that any important specimens, or significant groups of trees are retained, they may place Tree Preservation Orders (TPOs) on them. In other situations, villages or whole districts may be classified as conservation areas. In these instances, certain trees in the designated area will be protected. When trees are protected, legal procedures must be followed before any work is carried out.

When trees are protected by TPO's, no work should be carried out on them without prior written consent from the LPA. Once an application is made, the Authority personnel must inspect the trees, and make a decision within a statutory eight-week period as to whether work can go ahead. If no decision is made within the eight weeks period, the appellant can appeal. If the LPA refuses the application the appellant still has the right to appeal.

If a tree protected by a Preservation Order is either killed or wilfully destroyed, the owners of the tree, and the contractor who did the work, can both be prosecuted. The fines for killing or wilfully destroying a tree can be high, i.e. the current maximum is £20,000 per tree, and there is an automatic requirement to re-plant. The current maximum for minor unlawful infringements, such as pruning, is £2,500.

Trees which are dead, dying, or dangerous are exempt from the legislation, although if such trees are removed, the onus on proving they fell into one of these categories lies with the tree owner. Whenever possible it is strongly recommended that the LPA is given at least five days' notice before any work on such trees is carried out.

Trees in a conservation area that are already protected by a TPO are subject to the normal procedures and controls for any tree covered by such an Order.

Trees in a conservation area that are not protected by a TPO are protected by the provision in Sections 198 – 210 of The Town and Country Planning Act 1990 and The Town and Country Planning (Trees) Regulations 1999 (as amended by The Town and Country Planning (Trees) (Amendment) (Wales) Regulations 2017). These provisions require people to notify the LPA, using a 'Section 211 notice', six weeks before carrying out certain works on such trees, unless an exception applies. The works may go ahead before the end of the six-week period if the LPA gives consent. This notice period gives the Authority an opportunity to consider whether to make an Order on the tree.

2.2 HEDGEROWS

The Hedgerows Regulations 1997 applies to any hedgerow which has a continuous length of, or exceeding, 20 m, or is less than 20 m but adjoins another hedgerow at each end. A hedgerow can be categorised as 'important' if it is 30 years old or older and satisfies at least one of the criteria listed in Part II of Schedule 1 of the Regulations. The removal of a hedgerow which is protected under these criteria is prohibited without appropriate measures being taken and it is an offence to intentionally or recklessly remove, or cause or permit another person to remove, a hedgerow in contravention of Regulation 5(1) or (9).

3.0 METHODOLOGY

The methodology set out below is a detailed summary of the recommended approach to tree assessment as described in British Standard 5837:2012. This Report has applied the methodology to all significant individual trees or groups of trees present at or near to the Site. Trees below 150 mm trunk diameter at 1.5 m were generally excluded from the survey. All floral names follow the nomenclature of Stace (2010).

3.1 TREES

Trees have been broadly assessed based on guidance set out within the British Standard BS 5837:2012 Trees in Relation to Design, Development and Construction. This standard provides recommendations and guidance on the principles to be applied to achieve successful integration of development with trees, shrubs and hedgerows. Where development is to occur, the standard provides guidance on the approach needed to decide which trees are appropriate for retention, and the means for protecting these trees during the development (including demolition and construction works) and the means of incorporating trees into the developed landscape.

Trees on or adjacent to the Site have been divided into one of four categories (based on the cascade chart for tree quality assessment). These are classed as A, B, C or U (Section 4 of BS 5837) within Table 1. This gives an indication as to the tree's importance in relation to the Site, the local landscape and, also, the value and quality of the existing trees on-Site. This assists informal decisions concerning which trees should be removed or retained should development occur. For a tree to qualify under any given category it should fall within the scope of that category's definition (see below).

Categories A, B and C cover trees that should be a material consideration in the development process, each with three further sub-categories (i, ii, iii) which are intended to reflect arboricultural, landscape and cultural (nature conservation) values. Category U trees may have no significant landscape value, but it is not presumed that there is any overriding need to remove these unless stated otherwise in the description and recommendations. They are for this reason not considered as being significant within the planning process. In assigning trees to the A, B or C categories, the presence of any serious disease or tree-related hazard is taken into account. If the disease is considered fatal and/or irremediable, or likely to require sanitation for the protection of other trees it may be categorised as U with a recommendation for work or even removal, even if they are otherwise of considerable value.

Category (A): Trees whose retention is most desirable and are of high quality and value. These trees are considered to be in such a condition as to be able to make a lasting contribution (a minimum of 40 years) and may comprise:

- Trees which are particularly good examples of their species, especially rare or unusual, or essential components of groups or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue);
- Trees, or groups of trees, which provide a definite screening or softening effect to the locality in relation to views into or out of the Site, or those of particular visual importance (e.g. avenues or other arboricultural features assessed as groups); and
- Trees or groups of significant conservation, historical, commemorative or other value (e.g. Veteran or wood-pasture trees).

Category (B): Trees whose retention is considered desirable and are of moderate quality and value. These trees are considered to be in such a condition as to make a significant contribution (a minimum of 20 years) and may comprise:

- Trees that might be included in the high category but because of their numbers or slightly impaired condition (e.g. presence of remediable defects including unsympathetic past management and minor storm damage), are downgraded in favour of the best individuals;
- Trees present in numbers such that they form distinct landscape features and attract a higher collective rating than they would as individuals. Individually these trees are not essential components of formal or semi-formal arboricultural features, or trees situated mainly internally to the Site and have little visual impact beyond the Site; and
- Trees with clearly identifiable conservation or other cultural benefits.

Category (C): Trees that could be retained but are considered to be of low quality and value. These trees are in an adequate condition to remain until new planting could be established (a minimum of ten years) or are young trees with a stem diameter below 150 mm and may comprise:

- Trees not qualifying in higher categories;
- Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value and or trees offering low or only temporary screening benefit; and
- Trees with very limited conservation or other cultural benefits.

Category (U): Trees that are considered to have no significant landscape value, but it is not presumed that there is any overriding need to remove these unless stated otherwise in the description and recommendations. They are for this reason not considered as being significant within the planning process. These trees will be in such a condition that any existing value would be lost within 10 years, and which should in the current context be ignored or removed for reasons of sound arboricultural management. Trees within this category are:

- Trees that have a serious irremediable structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees;
- Trees that are dead or are showing signs of significant, immediate or irreversible overall decline; and
- Trees infected with pathogens of significance to the health and or/safety of other trees nearby, or very low-quality trees suppressing adjacent trees of better quality.

Species have been recorded by common and scientific name. Height has been estimated in metres and stem diameter measured in centimetres unless impractical, taken at a height of 1.5 m from the base of the tree.

In the assessment particular consideration has been given to:

- The health, vigour and condition of each tree;
- The presence of any structural defects in each tree and its life expectancy;
- The size and form of each tree and its suitability within the context of the proposed scheme; and
- The location of each tree relative to existing Site features, e.g. its value as a screen or as a skyline feature.

Age class is assessed according to the age class categories referred to in BS 5837.

- **Y**: Young trees age less than 1/3 life expectancy;
- **SM**: Middle age trees 1/3 – 2/3 life expectancy;
- **M**: Mature trees over 2/3 life expectancy; and

- **OM**: Over mature – declining or moribund trees of low vigour.

The overall condition of any individual tree, or group of trees, has been referred to using one of the definitions listed below. A more detailed description of condition has been noted in the Tree Schedule:

- **G Good**: A sound tree or trees needing little, if any, attention;
- **F Fair**: A tree or trees with minor but rectifiable defects or in the early stages of stress, from which it may recover;
- **P Poor**: A tree or trees with major structural and physiological defects or stressed such that it would be very expensive and inappropriate to retain; and
- **D Dead**: A tree or trees no longer alive. However, this could also apply to those trees that are dying and will be unlikely to recover or are becoming or have become dangerous.

Major defects or diseases and relevant observations have also been recorded. Dead wood has been defined as the following:

- Twigs and small branch material - Up to 5 cm in diameter.
- Minor dead wood - 5 cm to 10 cm in diameter.
- Major dead wood - 10 cm in diameter and above.

The survey was completed from ground level only. Aerial inspections were not undertaken. Evaluations of tree conditions given within this assessment apply to the date of survey and cannot be assumed to remain unchanged, and it may be necessary to review these within 24 months, in accordance with good arboricultural practice.

3.2 TREE PLANS AND TREE SCHEDULES

The extent and positions of significant individual trees or groups of trees close to the Site are shown on the Arboricultural Survey Plan (Figure 2). The Root Protection Areas (RPA) of the key trees of value identified for, or recommended for, retention have been marked within the Constraints Plan (Figure 3) using the RPAs provided in the Tree Schedule within Table 1.

A summary that includes the trees identified on or near to the Site is included in the Tree Assessment Report detailing information on each group of trees. This is also provided in Table 1. Within the summary table maximum RPAs (m^2) for estimated tree diameters have been included where appropriate, as well as a calculated corresponding radius of the circle for that RPA. The RPAs are formulated as described in the section below, and assist when designing development layouts in relation to trees.

3.3 ROOT PROTECTION AREA

Below ground constraints to development are represented by the root plate around a tree, which needs protecting in order for the tree to be incorporated into a proposed scheme without adverse harm to the tree or structural integrity of any proposed foundation structures. This area is illustrated by the RPA and is calculated according to the formula set out in BS 5837:(2012). This area is equivalent to a circle with a radius 12 x the stem diameter for single stem trees or the basal diameter for trees with more than one stem arising less than 1.5 m above ground level.

RPA (m²) = (stem diameter (mm) x 12/1000) ² x 3.142 This figure should be capped to 707 m², that is, equivalent to a circle with a radius of 15 m, or a square with approximately 26 m sides

Taken from Table 2: Calculating the RPA, BS 5837 (2005).

3.4 HEDGEROWS

An assessment of any hedgerows present at the Site, which may be adversely affected by the proposed development, was undertaken using the standard hedgerow surveying methodology outlined in the Hedgerow Regulations 1997. The purpose of the assessment was to ascertain whether the hedgerows are classified as 'nationally important' and, therefore, protected under the Hedgerow Regulations 1997. The assessment involves a scoring system which relies on particular features, number of woody and floral species present within the hedgerow habitat, and the age of the hedgerow.

The following hedgerow features were recorded:

- A bank or wall supporting the hedgerow for at least half its length;
- Gaps in the hedgerow not exceeding 10% of its length;
- An average of at least one standard tree per 50 m of hedgerow;
- The number of woodland plant species (as defined);
- A ditch along at least half the hedgerow;
- Connections (as defined by the Regulations) scoring four points or more; and
- A parallel hedge within 15 m of the hedgerow.

An assessment of a 30 m section was undertaken per 100 m of hedgerow length, which involved recording the number of woody species present. Where two or more sections of each hedgerow were surveyed, the average number of the species was calculated.

3.5 LIMITATIONS TO THE SURVEY

There were no limitations to the survey in terms of timing and weather conditions. Where access to trees within off-Site land was not possible approximations of the dimensions of the trees were made, including of the stem diameter at breast height. As most trees were clearly visible from the Site this is not anticipated to be detrimental to the survey.

4.0 RESULTS

4.1 DESK STUDY

The results of the desk search undertaken by email request to Wrexham County Borough Council on 17.06.25 indicate that all trees within the Site are outside of any Conservation Area. No trees on-Site nor on land adjacent to the Site are covered by a TPO.

4.2 SURVEY DETAILS

The tree inspection took the form of a walkover inspection completed by Peter morrell Tech ArborA on 9th June 2025. Each individual young to mature tree of significance that could be impacted upon by any proposed re-development was identified and visually inspected and classified. The trees identified during the survey at the Site have been individually noted and identified within this Report and are shown in the Tree Survey Plan within Figure 2, and within the Photograph Section of this Report.

4.3 YOUNG TO MATURE

A total of 25 trees and 14 tree groups have been identified and assessed as part of the tree survey. All trees surveyed with the exception of six Tree Groups (TG) and five individual Trees (T) were within the Site boundary.

4.3.1 SPECIES AND THEIR ARRANGEMENT IN THE LANDSCAPE

There are a range of tree species on, and immediately adjacent to, the Site, with no dominant species. Sycamore *Acer pseudoplatanus*, silver birch *Betula pendula*, cherry *Prunus sp*., ash *Fraxinus excelsior*, plum *Prunus domestica*, ash *Fraxinus excelsior*, Portuguese laurel *Prunus lusitanica*, Austrian pine *Pinus nigra*, common beech *Fagus sylvatica*, field maple *Acer campestre*, rowan *Sorbus aucuparia*, goat willow *Salix caprea*, guelder rose *Viburnum opulus*, Italian alder *Alnus cordata*, hawthorn *Crataegus monogyna*, buddleia *Buddleja davidii* and holly *Ilex aquifolium* were species represented as multiple specimens. The following species are represented as single specimens: Black oak *Quercus velutina*, whitebeam *Sorbus aria*, purple-leaved crab apple *Malus x purpurea* and sugar maple *Acer saccharum*.

The distribution of the trees and tree groups across the Site is limited to being randomly dispersed along the boundaries of the Site, adjacent to car parking along Station Approach and on embankments associated with railway. Five individuals tree and six tree groups are also present off-Site, immediately adjacent to the eastern and western boundaries, with canopies that extends into the Site.

4.3.2 HEIGHT AND SIGNIFICANCE IN THE LANDSCAPE

Trees T5 to T19, standing up to 19 m, are by their position along and adjacent to Station Road, highly visible when viewed from the south and the continuous canopy cover provides effective screening to buildings to the north. Tree groups G6 – G10 along the boundary of the former builder merchants form a buffer to residential housing to the north and east, though views within the wider landscape are limited. The remainder of trees standing adjacent to roads and public footpaths contribute to the street scene, but again, their prominence within the wider landscape is limited by surrounding buildings.

If retained, these trees will require protection measures to ensure no impact occurs as a result of any development.

4.3.3 AGE AND CONDITION

The trees present within the Site range from mature to young, with the majority semi-mature. A number of trees within the Site boundary show signs of past management, mainly in the form of canopy lifting and reduction where canopies extend over areas of vehicular or pedestrian accesses. The majority of on-Site trees appear to be in a fair condition. A number of ash trees (T2, T3, T21) display signs of ash dieback disease *Hymenoscyphus fraxineus* while an Austrian pine (T23) had a severely damaged main stem.

4.3.4 ENVIRONMENTAL CONDITION

Given the Site's combination current and former commercial uses and the semi-mature age of the majority of the trees, it is surmised that limited damage to the root system of boundary and on-Site trees has been sustained through any recent on-Site working practices. The trees on-Site and immediately adjacent to the Site are not in an exposed position, having been protected from prevailing winds by the surrounding buildings.

Groundwater conditions are not assessed to be a significant factor in present or future growth or health of trees since the generally flat Site appears to be well drained and this situation will probably improve further following completion of any development.

4.3.5 HEDGEROWS

A single hedgerow has been identified and assessed as part of the hedgerow survey. Whilst the hedgerow was assessed against the Hedgerow Regulations (1997) criteria, it did not support the number of woody species or associated features required to meet the criteria for an Important Hedgerow.

The hedgerow was in a poor condition, having been unmanaged for several years.

4.4 TREE SCHEDULE

TABLE 1 - BS 5837:2012 TREE SCHEDULE

Tree No.	Species Name	Botanical Name	Ht (m)	Stem dia (mm)	No. of Stems	Crown spread				Crown Clearance (m)	Life Stage	Physiological Condition	Structural Condition	Comment	Cat Grading	Estimated Remaining Contribution (yrs)	Radius of RPA (m)	RPA (sq m)	Recommendations
						N	E	S	W										
T1	Sycamore	*Acer pseudoplatanus*	15	Est 450	1	4	4	4	4	4	SM	Fair	Moderate	Bifurcated at 4 m. Ivy clad trunk, previously severed.	C2	20 - 40	5.40	92	
T2	Ash	*Fraxinus excelsior*	9	325	1	2	2	2	2	0	SM	Poor	Moderate	Ash dieback present. Scattered deadwood. Ivy clad stem	U1	<10	3.90	48	Consider removal and replacement
T3	Ash	*Fraxinus excelsior*	7	125 175	2	3	3	4	3	3	Y	Poor	Moderate	Ash dieback present. Scattered deadwood. Ivy clad stem.	U1	<10	<10	21	Consider removal and replacement
T4	Sycamore	*Acer pseudoplatanus*	16	320, 370	2	6	6	6	6	2	SM	Fair	Moderate	Bifurcated at base. Co-dominant stem with included bark.	C2	20+	5.87	108	
T5	Black oak	*Quercus velutina*	16	640	1	3	10	5	7	2	SM	Fair	Moderate	Unbalanced canopy. Impacted by adjacent trees.	B2	40+	7.68	185	
T6	Whitebeam	*Sorbus aria*	8	260	1	2	5	5	5	2	SM	Fair	Moderate	Rounded canopy previously lifted over parking area.	B2	40+	3.12	31	
T7	Purple-leaved crab apple	*Malus x purpurea*	7	220	1	0	5	4	4	2	SM	Fair	Poor	Sparse canopy impacted by adjacent trees.	C1	<10	2.64	22	
T8	Plum	*Prunus domestica*	9	420, 410, 300, 200, 200,	5	6	6	0	6	2	SM	Fair	Moderate	Multi-stemmed at 1 m. Previously lifted over parking area.	B2	20 - 40	8.61	233	
T9	Ash	*Fraxinus excelsior*	15	270	1	4	4	4	2	0	SM	Fair	Poor	Canopy impacted by adjacent trees. Phototropic growth evident.	C1	20 - 40	3.24	33	

T10	Sycamore	*Acer pseudoplatanus*	17	390	1	5	0	4	0	6	SM	Fair	Poor	Canopy impacted by adjacent trees. Phototropic growth evident.	C1	20+	4.68	69	
T11	Sycamore	*Acer pseudoplatanus*	17	370	1	5	0	5	0	8	SM	Fair	Poor	Canopy impacted by adjacent trees. Phototropic growth evident. Stem leaning to east.	C1	20+	4.44	62	
T12	Sycamore	*Acer pseudoplatanus*	18	630	1	10	10	10	10	4	EM	Good	Good	Large, rounded canopy. Previously lifted. .	B2	40+	7.56	180	
T13	Ash	*Fraxinus excelsior*	17	300, 250, 200	3	2	1	3	3	1	SM	Fair	Mode rate	Trifurcated at 1m. Canopy impacted by adjacent trees. Reduced at edge of hardstanding.	C2	20+	5.26	87	
T14	Portuguese laurel	*Prunus lusitanica*	6	8 x 100	8	5	5	5	5	0	SM	Fair	Mode rate	Multi-stemmed from base. Large spreading canopy.	C2	20 - 40	3.39	36	
T15	Cherry	*Prunus sp.*	9	280 350	2	2	6	6	6	1	SM	Fair	Mode rate	Canopy impacted by adjacent trees. Reduced at edge of hardstanding.	C2	20 - 40	5.38	91	
T16	Cherry	*Prunus sp.*	9	270 200	2	2	1	5	5	1	SM	Fair	Mode rate	Canopy impacted by adjacent trees. Reduced at edge of hardstanding.	C2	20 - 40	4.03	51	
T17	Sycamore	*Acer pseudoplatanus*	14	225 200	2	2	2	5	0	2	SM	Fair	Mode rate	Canopy impacted by adjacent trees. Reduced at edge of hardstanding.	C2	20 - 40	3.61	41	
T18	Cherry	*Prunus sp.*	15	280	1	3	0	1	3	2	SM	Fair	Mode rate	Canopy impacted by adjacent trees. Reduced at edge of hardstanding.	C2	20 - 40	3.36	35	
T19	Sycamore	*Acer pseudoplatanus*	15	310	1	5	1	4	5	2	SM	Fair	Mode rate	Canopy impacted by adjacent trees. Reduced at edge of hardstanding.	C2	20 - 40	3.72	43	
T20	Sugar maple	*Acer saccharum*	4	Est 4 x 100	4	2	2	2	2	0	Y	Fair	Mode rate	Managed tree with columnar canopy.	C2	20+	2.40	18	
T21	Ash	*Fraxinus excelsior*	7	4 x 100	4	2	2	2	2	0	Y	Poor	Poor	Multi-stemmed at base. Ash dieback present. Scattered deadwood.	U1	<10	2.40	18	Consider removal and replacement
T22	Ash	*Fraxinus excelsior*	18	Est 850	1	9	9	8	8	3	M	Fair	Mode rate	Large spreading canopy. Scattered deadwood.	B2	40+	10.20	327	
T23	Austrian pine	*Pinus nigra*	14	Est 450	1	4	4	7	3	6	SM	Fair	poor	Leaning stem and damage at 7 m. High potential for failure.	U1	<10	5.40	92	Consider removal and replacement

T24	Austrian pine	*Pinus nigra*	16	Est 520	1	6	6	6	6	4	SM	Fair	Fair	Spreading canopy. Ivy clad stem.	B2	40+	6.24	129	
T25	Silver birch	*Betula pendula*	10	Est 320	1	5	3	3	3	0	SM	Fair	Mode rate	Spreading canopy. Ivy clad stem.	C2	20+	3.84	46	
G1	Sycamore Ash	*Acer pseudoplatanus* *Fraxinus excelsior*	Av 14	Av 550	1	5	5	5	5	1	SM	Fair	Mode rate	Pair of similar size trees with canopies that read as one. Ivy clad stems.	C2	20+	6.60	137	
G2	Sycamore	*Acer pseudoplatanus*	Av 15	2 x 200	2	5	4	3	5	2	SM	Fair	Mode rate	Tree group adjacent to footpath with canopies that read as one. Bifurcated at base.	C2	20 - 40	3.39	3.	
G3	Common beech Field maple	*Fagus sylvatica* *Acer campestre*	Av 6	220	1	2	3	3	3	2	Y	Fair	Mode rate	Pair of trees with canopies that read as one.	B2	20 - 40	2.64	36	
G4	Sycamore, Ash	*Acer pseudoplatanus* *Fraxinus excelsior*	Av 12	175	1	3	3	3	3	2	Y	Fair	Mode rate	Linear group of self-sets alongside of building. Canopies read as one.	B2	20 - 40	2.10	14	
G5	Ash Rowan Silver birch	*Fraxinus excelsior* *Sorbus aucuparia* *Betula pendula*	Av 7	150	1	2	2	2	2	4	Y	Fair	Mode rate	Linear group on Site boundary. Canopies read as one.	C2	20 - 40	1.80	10	
G6	Silver birch Goat willow Rowan Guelder rose	*Betula pendula* *Salix caprea* *Sorbus aucuparia* *Viburnum opulus*	Av 10	175	1	4	4	4	4	o	Y	Fair	Mode rate	Linear group on Site boundary. Canopies read as one.	C2	20 - 40	2.10	14	
G7	Goat willow Sycamore Silver birch Ash	*Salix caprea* *Acer pseudoplatanus* *Betula pendula* *Fraxinus excelsior*	Av 14	Est 300	1	6	6	6	5	0	SM	Fair	Mode rate	Boundary group split by access road. Canopies read as one. Scattered deadwood.	B2	40+	3.60	41	
G8	Sycamore	*Acer pseudoplatanus*	Av 19	Est 850	1	9	9	9	9	3	SM	Fair	Mode rate	Large trees with canopies that read as one.	B2	40+	10.20	327	
G9	Sycamore Rowan Silver birch	*Acer pseudoplatanus* *Sorbus aucuparia* *Betula pendula*	Av 11	Est 450	1	5	5	5	5	0	SM	Fair	Mode rate	Tree group adjacent to boundary with canopies that read as one. Scattered deadwood.	B2	40+	5.40	92	
G10	Sycamore Italian alder Cherry Rowan Ash	*Acer pseudoplatanus* *Alnus cordata* *Prunus sp.* *Sorbus aucuaria* *Fraxinus excelsior*	Av 16	Est 450	1	6	6	6	6	2	SM	Fair	Mode rate	Tree group adjacent to boundary with canopies that read as one. Scattered deadwood.	B2	40+	5.40	92	
G11	Sycamore, Ash	*Acer pseudoplatanus* *Fraxinus excelsior*	Av 15	Est 450	1	6	6	6	6	3	SM	Fair	Mode rate	Mixed group on embankment with canopies that read as one. Scattered deadwood.	B2	40+	5.40	92	

G12	Field maple Plum Goat willow Hawthorn	*Acer campestre* *Prunus domestica* *Salix caprea* *Crataegus monogyna*	Av 11	Est 300	1	4	4	4	4	0	SM	Fair	Mode rate	Mixed group on embankment with canopies that read as one. Separated from adjacent group by a footpath.	B2	20 - 40	3.60	41	
G13	Portuguese laurel Silver birch Buddleia Holly	*Prunus lusitanica* *Betula pendula* *Buddleia davidii* *Ilex aquifolium*	Av 7	Est 175	1	3	3	3	3	0	SM	Fair	Mode rate	Mixed group on embankment with canopies that read as one. Separated from adjacent group by a footpath.	B2	20 - 40	2.10	14	
G14	Silver birch Buddleia	*Betula pendula* *Buddleja davidii*	Av 10	Est 185	1	3	3	3	3	0	SM	Fair	Mode rate	Prominent tree linear group of silver birch with understorey of buddleia. Canopies read as one.	C2	20+	2.22	15	
H1	Garden privet	*Ligustrum ovalifolium*	Av 7	Est 100	1	2	4	2	2	0	SM	Poor	Poor	Intact species poor hedgerow. Unmanaged at edge of path. Leaning over path in places	C1	10+	1.20	5	

TABLE 2 – KEY TO TREE SCHEDULE

BS 5837: 2012 Tree Survey Key to Terminology		
Term	**Explanation**	**Notes**
Tree Ref.	Sequential reference number for individual tree or distinct tree in hedgerow	The measurement conventions are as follows: Height, crown spread, and crown clearance are recorded to the nearest 0.5 m (crown spread is rounded up) for dimensions up to 10 m and the nearest metre for dimensions over 10 m. Stem diameter is recorded in mm, rounded to the nearest 5 mm. Estimated dimensions (e.g. for off-Site or otherwise inaccessible trees where accurate data cannot be recovered) should be clearly identified as such (e.g. suffixed with a "#") RPA – Radius of nominal circle of Root Protection Area in metres from centre of tree stem. Figures used originate from Annex D BS5837: 2012 (p. 40). Provided as a minimum distance and calculated in accordance with section 4.6 BS5837: 2012 (p. 10) RPAm^2 – Extent of root protection area * signifies dimensions have not been recorded
Common Name	Tree species listed by common name	
Height	Overall tree height measured in metres (m)	
Branch Spread	Taken as a minimum at the four cardinal points (north, south, east & west) to derive a representation of the crown spread	
Stem Diameter	Diameter of single stem trees on level ground measured at 1.5 m above ground level. Diameters of other commonly encountered tree stems should be measured in accordance with Annex C (BS5837 2012 p. 39)	

Existing Height Above Ground Level – FSB/DG	Height of first significant branch (FSB) and its direction of growth (DG) identified as height in metres and direction of growth (e.g. 2.4-N)	Measurements taken to provide information relating to ground clearance, crown/stem ratio and shading of site
Life Stage	Young (Y)	Tree within the first one quarter of life expectancy
	Semi mature (SM)	Tree in second quarter of life expectancy
	Early mature (EM)	Tree in third quarter of life expectancy
	Mature (M)	Tree in final quarter of life expectancy
	Over mature (OM)	Tree having reached the anticipated maximum height and spread typical for its species and setting and which has entered a period of stasis where physiological processes maintain a functional status quo.
	Veteran tree (V)	Tree that, by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned. NOTE: These characteristics might typically include a large girth, signs of crown retrenchment and hollowing of the stem. Veteran trees may be subject to a tree preservation order (TPO). Clients are responsible for determining whether a TPO is present.
General Observations	To provide information on the structural and/or physiological condition (e.g. the presence of any decay and physical defects), and/or preliminary management recommendations	
Physiological Condition - An assessment of the physiological condition (i.e. health/vitality) of the tree	**GOOD** **FAIR** **POOR** **DEAD**	Tree in a healthy condition with no significant problems Tree generally in good health with some problems that can be remediated Tree in poor health with significant problems that can't be remediated Tree without sufficient live material to sustain life
Structural Condition - An assessment of the structural/safe condition of the tree	**GOOD** **MODERATE** **POOR**	Tree in a sound condition with no significant defects Tree in a sound condition at present but with defects or with significant defects that can be remediated Tree with significant defects that can't be remediated

Notes related to both physiological and structural condition follow the categorisation in order support the statement and give greater detail on the true quality and value of the tree.		
Preliminary Management Recommendations	These may include further investigations for the presence or extent of decay or climbed inspections, ivy removal or pruning works when access is a non-moveable aspect etc. (NB this is not intended to be a specification for tree work and further advice maybe required prior to implementation). Trees assessed as being in apparently immediately hazardous condition will be notified to the client separately as soon as practicable.	
Estimated remaining contribution (yrs)	An estimate of the remaining life contribution in years that the tree or group of trees is expected to have based on species, condition on the Site in its current context	**<10** - Tree is dead or dying and unlikely to contribute beyond 10 years **10+** - Tree is assessed as being able to contribute to the site for 10+ years **20+** - Tree is assessed as being able to contribute to the site for 20+ years **40+** - Tree is assessed as being able to contribute to the site for 40+ years
Category grading	Category of tree in accordance with BS5837 2012 Cascade Chart (Source BS5837 2012 p9)	'**U**' Unsuitable for retention, within the context of the current land user '**A**' Trees of high quality with 40yr remaining lifespan '**B**' Trees of moderate quality and remaining lifespan of at least 20yrs '**C**' Trees of low quality with an estimated remaining lifespan of at least 10 yrs or young trees with a stem diameter below 150mm Categories A-C are further classified as 1 (mainly arboricultural qualities), 2 (mainly landscape qualities), 3 (mainly cultural values, including conservation). For further details refer to Cascade Chart in BS 5837 2012 p. 9

5.0 TREE MANAGEMENT

5.1 ARBORICULTURAL ASSESSMENT

Adjacent to the boundaries and southern section of the Site are a number of tree groups and individual trees that could be impacted by any proposed re-development. It may be possible to retain and incorporate certain trees and tree groups currently present within the Site into the landscaping scheme of the proposals.

It appears limited management has taken place to the trees present on-Site, mainly in the form of crown lifting and reduction. Trees T5 – T19 would benefit from selective thinning which should extend the viability and general health of the trees, while the removal of T2, T3, T21 and T23 is recommended. To ensure that the root areas and canopy extremities of the individual trees and the tree groups that may be retained are not damaged, a Constraints Plan has been prepared to show the locations where protective fencing should be erected for any trees selected for retention (see Figure 3). Any tree surgery required is best carried out towards the conclusion of the development so that, if necessary, any known root damage can be corrected by the appropriate crown thinning to restore root/shoot balance.

5.2 RECOMMENDATIONS

5.2.1 RECOMMENDATION 1 (ADEQUATE TREE PROTECTION)

Those trees identified within any development plan for retention will need to be adequately protected during any approved development works. As a general rule at this Site, measures to protect trees should follow the best practice principles set out in BS5837: Trees in Relation to Design, Development and Construction (2012). Prior to any construction or development work proceeding, the RPAs of individual trees to be retained should be marked out using the distances provided in the Table 1. Marking out should be completed by a person with arboricultural or horticultural expertise as individual trees will have root zones that may be affected by local conditions and allowances would need to be made to accommodate this.

The best practice principles have been broadly summarised below:

- All trees retained adjacent to the Site should be protected by barriers or ground protection around the calculated RPA and as indicated on any Tree Constraints Plan (TCP) that may be produced in association with the assessment;
- Any fencing required should be erected prior to commencement of construction and before demolition including erection of any temporary structures. Once set up fences should not be removed or altered without prior consultation with the arboricultural advisor;
- Arrangements should be made for an arboriculturist to supervise works and tree protection where trees are particularly vulnerable or sited close to access points;
- Pre-development works may be undertaken prior to the installation of fencing with the agreement of the local planning authority;
- All tree works should follow best practice procedures as set out in BS 3998 (2010). All trees should be maintained in good condition on-Site and be inspected annually (where overall condition requires) or every two years and after any major storm events, with safety a priority;
- Fencing should be clearly visible and suitable for the location, type and proximity of construction activity;

- It may be appropriate on some sites to use temporary site offices as components of the protection barriers;
- Where it has been agreed and shown on a Tree Protection Plan, construction access may take place within the RPA if suitable ground protection measures are in place (e.g. existing surfaced car park areas). In other areas this may comprise single scaffold boards over a compressible layer laid onto geo-textile materials for pedestrian movements. Vehicular movements over the RPA will require the calculation of expected loading and may require the use of proprietary protection systems;
- Once areas around trees have been protected by fencing, any works on the remaining Site area may be commenced providing activities do not impinge on protected areas. Notices should be placed on fencing to indicate that operations are not permitted within the fenced area;
- Wide or tall loads etc should not come into contact with retained trees. Banksman should supervise transit of vehicles, jibs, booms etc where this is in close proximity to retained trees;
- Oil, bitumen, cement or other material that is potentially injurious to trees should not be stacked or discharged within 10 m of a tree bole. No concrete mixing should be done within 10 m of a tree. Allowance should be made for the slope of ground to prevent materials running towards the tree;
- No fires should be lit where flames are anticipated to extend to within 5 m of tree foliage, branches or trunk, taking into consideration wind direction and size of fire;
- Notice boards, telephone cables or other services should not be attached to any part of a retained tree;
- Where it is deemed necessary to operate a wide or tall load, plant bearing booms, jibs and counterweights or other such equipment, as part of construction works, and such equipment would have potential to cause injurious contact with crown material i.e. low branches and limbs, of retained trees within the RPA fencing, it is best advised that appropriate, but limited, tree surgery be carried out beforehand to remove any obvious problem branches. This is classed as ‘Facilitation Pruning’ within BS 5837 (2012). Any such pruning should be undertaken in accordance with a specification prepared by an arboriculturist;
- It is advised that a Pre-Commencement Site Meeting is held with contractors who are responsible for operating machinery, as described above, to firstly highlight the potential for damage occurring to tree crowns and to ensure that extra care is applied when manoeuvring machinery during such operations within close proximity to retained trees to avoid any contact;
- In the event of having caused any such branch or limb damage to retained trees it is strongly recommended that suitable tree surgery be carried out, in accordance with BS 3998 (2010) Recommendations for Tree Work, to correct the damage, upon completion of development; and
- All of the above precautionary measures should be applied to minimise the effect of any damage to long-term tree health and safety.

5.2.2 RECOMMENDATION 2 (TREE REMOVALS)

The following tree works are recommended:

- Trees T2, T3 and T21 all display signs of ash dieback and should be removed and a suitable replacement planted; and
- Tree T23 has a severely damaged main stem and should be removed and a suitable replacement planted.

6.0 DISCLAIMER

The recommendations contained in this report represent Antea's professional opinions based upon the currently available information and are arrived at in accordance with currently accepted professional standards. This report is based upon a specific scope of work requested by the Client. The contract between Antea, and its Client outlines the scope of work, and only those tasks specifically authorised by that contract or outlined in this report were performed. This report is intended only for the use of Antea's Client and anyone else specifically identified in writing by Antea as a user of this report. Antea will not and cannot be liable for unauthorised reliance by any other third party. Other than as contained in this paragraph, Antea makes no express or implied warranty as to the contents of this report.

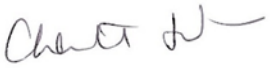
7.0 REPORT AUTHORISATION

Prepared by:

25th June 2025

Peter Morrell
Principal

Reviewed and Authorised by:



25th June 2025

Charlotte Sanderson-Lewis
Senior Client Manager

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9.0 REFERENCES

BSI Publication BS 5837:2012 Trees in Relation to Design, Demolition and Construction – Recommendations.
BSI Publication BS 5837:2005 Trees in Relation to Construction - Recommendations.
Stace, C. (2010). New Flora of the British Isles 3rd edition. University Press, Cambridge.
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Town and Country Planning Act (1990) c.8 Part VIII Chapter 1 Trees and Tree Preservation Orders. HMSO
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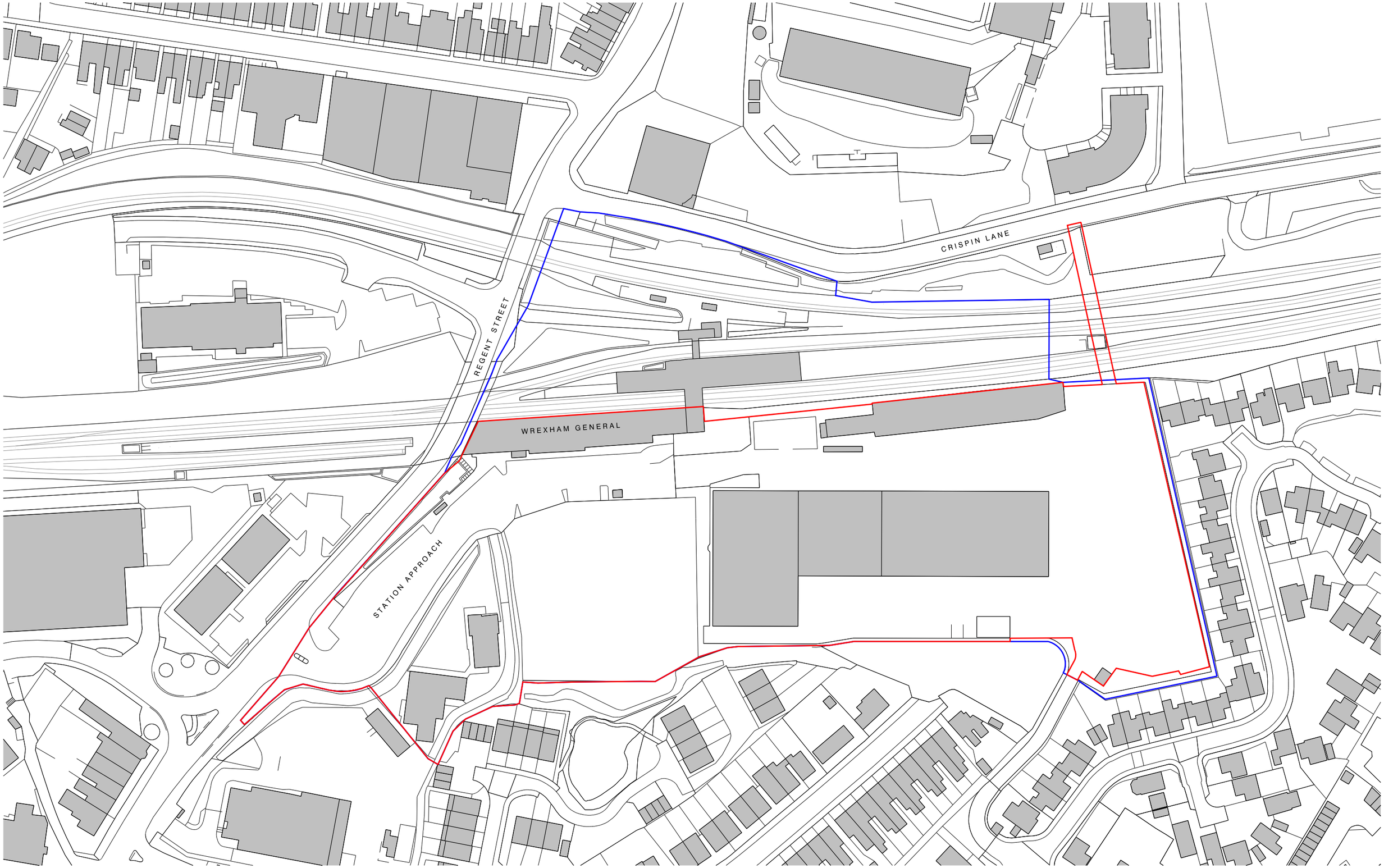
Figures



revision:	date:	note:
P01	20250513	preliminary first issue
P02	20250618	redline boundary updated

LEGEND

- application site
- ownership boundary

project
Wrexham Gateway

job no.
7682

title
site location plan

scale
1:1250 @ A3

drawing no.
al(05)0001

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G6*
Various
C

G7*
Various
B

G8*
Sycamore
B

T25*
Silver birch
C

G5*
Ash, Rowan, Silver birch
C

G9*
Various
B

T24
Austrian pine
B

T23*
Austrian pine
U

G14*
Silver birch Buddliea
C

G13*
Various
B

G12*
Various
B

G4*
Sycamore, Ash
B

G10*
Various
B

T22
Ash
B

Wrexham General Station

G11*
Sycamore, Ash
B

T21*
Ash
U

G3
Beech, Field maple
B

T20
Sugar maple
C

G2
Sycamore
C

T4
Sycamore
C

T2
Ash
U

T3
Ash
U

T1*
Sycamore
C

T19
Sycamore
C

T5
Black oak
B

T18
Cherry
C

T17
Sycamore
C

T6
Whitebeam
B

T16
Cherry
C

G1
Sycamore, Ash
C

T7
Purple-leaved crab apple
C

T15
Cherry
C

H1*
Garden privet
C

T8
Plum
B

T9
Ash
C

T10
Sycamore
C

T11
Sycamore
C

T12
Sycamore
B

T13
Ash
C

T14*
Portuguese laurel
C

Depot

Pond

GROSVENOR GARDENS

Hotel

Terraces

Stand

Ruins

Mast

86.3m

El Sub Sta

Wat's Dyke

5m 10m 20m 30m 40m 50m

N

Project: 2025-05-573669 Wrexham Gateway Eastern Zone	
Drawing: Figure 2 - Tree Survey Plan	
Client: Cushman & Wakefield	
Drawing No. 2025-05-573669-2	Revision: A
Scale: 1:500 @ A1	Date: June 2025
Approved By:	Drawing By: NB

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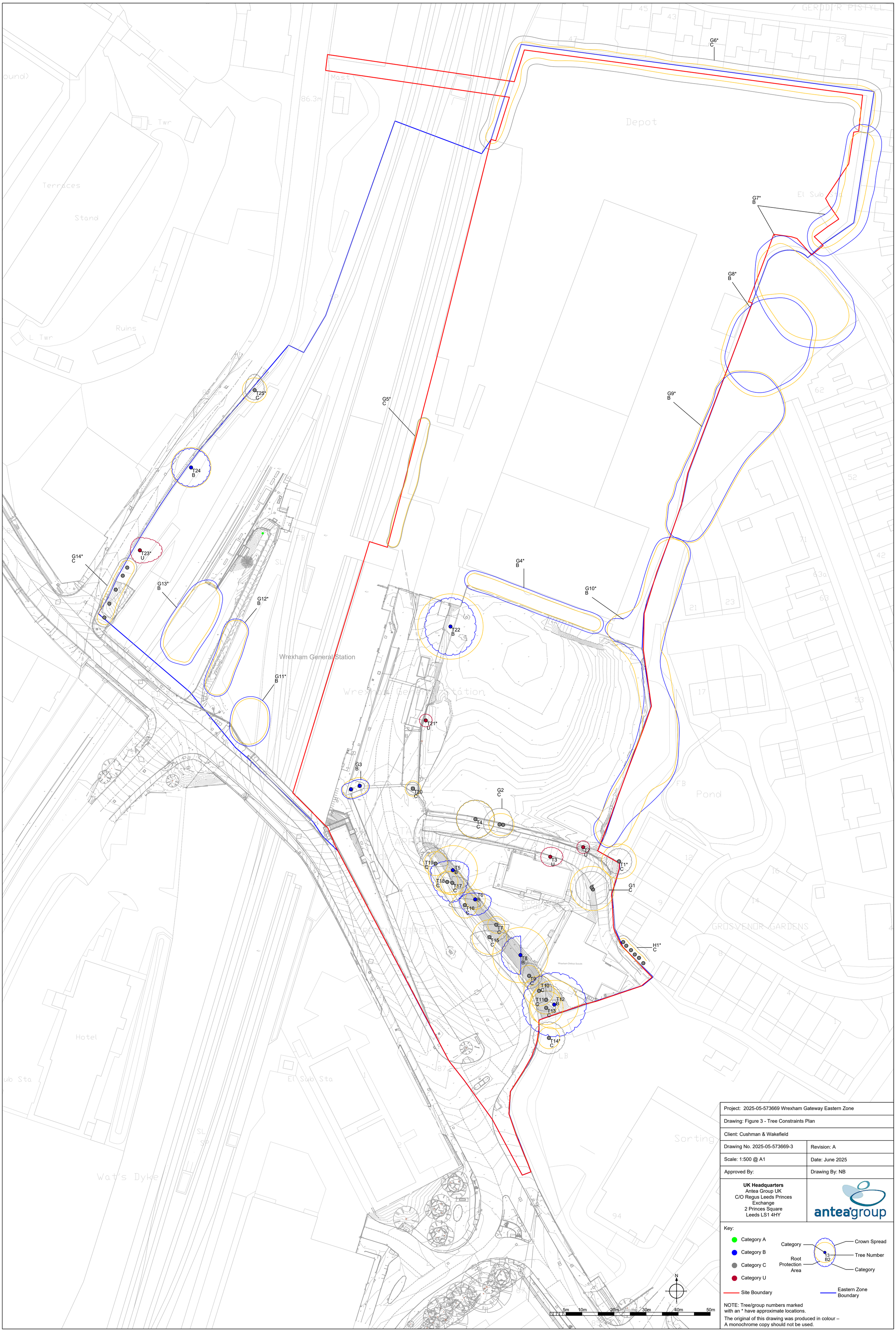
Key:

- Category A
- Category B
- Category C
- Category U
- Site Boundary
- Eastern Zone Boundary

Category
13
Birch
B2
Crown Spread
Tree Number
Species
Category

NOTE: Tree/group numbers marked with an * have approximate locations.

The original of this drawing was produced in colour – A monochrome copy should not be used.



Project: 2025-05-573669 Wrexham Gateway Eastern Zone	
Drawing: Figure 3 - Tree Constraints Plan	
Client: Cushman & Wakefield	
Drawing No. 2025-05-573669-3	Revision: A
Scale: 1:500 @ A1	Date: June 2025
Approved By:	Drawing By: NB

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Key:

- Category A
- Category B
- Category C
- Category U

Category — Crown Spread
Root Protection Area — Tree Number
Category

- Site Boundary
- Eastern Zone Boundary

NOTE: Tree/group numbers marked with an * have approximate locations.

The original of this drawing was produced in colour – A monochrome copy should not be used.