

Combined Arboricultural Impact
Assessment/ Method Statement
Former Gowerton Primary School
Ffordd Beck
SA4 3GE



-Josh Clark -

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16/01/26

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Introduction

This assessment was overseen by Ben Clark, Arboricultural Consultant, and Director at Tree Check Arboriculture Ltd. with over 11 years' experience in the arboriculture industry and holding the following qualifications:

- Level 4 Diploma in Arboriculture
- BSc. Geology (University of Southampton)
- LANTRA Professional Tree Inspection Certificate (PTI)
- Various NPTC qualifications in tree surgery.

Ben is a technician member of the Arboricultural Association and attends regular training and seminars to remain up to date with current arboricultural practices.

This assessment was conducted by Josh Clark, Arboricultural Consultant, and Director at Tree Check Arboriculture Ltd. with over 10 years' experience in the arboriculture industry and holding the following qualifications:

- LANTRA Professional Tree Inspection Certificate (PTI)
- Various NPTC qualifications in tree surgery.

The methodology of this report is based on the recommendations provided by the British Standards Institute document BS5837: Trees in Relation to Design, Demolition and Construction – Recommendations, as well as other recommendations provided by institutions such as the Arborical Association.

Brief

Tree Check has been instructed by Neal Hunter of Squirrel Wood Properties to carry out an Arboricultural Impact Assessment and Method Statement at Former Gowerton Primary School, Ffordd Beck. The purpose of this report is as follows:

- To quantify any tree losses required to make way for the proposed development.
- To quantify and prescribe any pruning works required to make way for the proposed development.
- To assess the impact that the proposed development may have on retained trees on site and to provide control measures to prevent or minimize damage to retained trees.
- To consider whether design changes could prevent or reduce tree losses on site, and whether such changes are reasonable and proportional to the retention value of affected trees.
- To provide recommendations for mitigating tree losses where appropriate.

Baseline

This report was based on the findings outlined in our baseline report: BS5837 Tree Survey and Categorisation Report at Former Gowerton Primary School, Tree Check 2025.

The following information was available:

- 001 Gowerton Primary School Topographic Survey (Vinci Surveys 2020)
- Proposed Site Plan- Richard Andrews Architects- 08/25

It should be noted that this assessment is based on tree locations as recorded in the base line survey relative to the proposed design layout. These tree locations were plotted using tree locations on the topo if available, and GPS, satellite and known features on site. In any case there exists potential for inaccuracies in the locations of trees relative to the development.

The site was visited on the 24-Apr-2025 during dry and bright weather conditions considered ideal for this type of survey.

Interpretation

See [appendix v](#) for a glossary of the terms commonly used in tree reports.

BS Categories

Trees have been assigned retention categories in accordance with BS5837. These are as follows:

Category A- Trees with a high retention value which are either arboriculturally important, important within the landscape, or culturally/ecologically important.

Category B- Trees with a moderate retention value i.e. they are good examples of their species, provide some notable amenity value to the area, or provide significant ecological or cultural value.

Category C- Trees with a low retention value. Including trees with defects which reduce their amenity value or expected lifespan but not to the extent that they cannot be realistically retained within the development.

Category U- Trees of which retention is considered unrealistic within the context of the development due to poor condition and low life expectancy.

See [Table I](#) in the appendices of this report for more information on the allocation of categories and subcategories.

Tree Age Ratings

Y- Young trees in their early stage of growth, have undergone minimal secondary thickening and are still primarily composed of active tissue.

EM- Early mature trees that have started to show characteristics of maturity such more developed crowns and increased stem thickness.

M- Mature fully developed trees.

OM- Over mature trees that are starting to show signs of decline.

A- Ancient trees that have reached a notably old age for their species and are therefore considered to be important.

V- Veteran trees with notable features such as wounds, cavities, cracks, etc. that provide significant habitat value. These are usually older trees.

Root Protection Areas (RPA's)

Root Protection areas have been calculated according to BS5837 and represent the estimated minimum rooting area required by the tree to carry out its functions.

Root protections areas are shown as orange circles or polygons for all trees except those with a retention category of U in the Tree Constraints Plan. In the Tree Loss/Retention and Protection Plan, RPA's are not shown for trees proposed for removal to make way for development.

Tree and Group Prefixes

Trees and groups are numbered with the following prefixes:

- **T**- individual trees.
- **G**- groups of trees with similar characteristics and rooting areas.
- **H**- Hedgerows.
- **W**- woodland groups, designated as such due to the presence of woodland features such as natural regeneration,

Arboricultural Impact Assessment/Method Statement

Summary

The assessment identifies that no tree removals are required and that several retained trees, including those within W2 protected under TPO 655, will require minor pruning to prevent conflict with the proposed works. Areas of caution were identified where crowns or RPAs may be exposed to potential disturbance, and protective measures have been specified to address these risks.

Most trees can be fully segregated from construction activity by protective fencing, with additional methodologies in place where work must occur beneath crowns or near RPAs. These include arboricultural supervision, restrictions on machinery movement, low-vibration demolition, and controls to prevent soil compaction, dust deposition, debris accumulation, and chemical contamination. Longer-term interactions—such as leaf litter, shading and perceived tree risk—have been mitigated through maintenance and management measures.

1. Tree Preservation Orders and Conservation Areas

Data obtained from Swansea City Councils online mapping service ^[2] suggests that while the site does not fall within the boundaries of a Conservation Area, a number of trees within W2 (as referenced in this report) are subject to a Tree Preservation Order (TPO 655) where they are recorded as T5, T6, G1 and G2 and include Horse chestnut (*Aesculus hippocastanum*) and Sycamore (*Acer pseudoplatanus*) at the south boundary of site.

2. Areas of Caution

A number of areas on site have been highlighted as areas of caution; these are areas where there is a heightened risk of damage to the above ground structure or root system of retained trees through the proposed works. Certain methodologies in this document will state that they must be followed within areas of caution. The location of all areas of caution can be found on the [Tree Protection Plan](#) within the appendix section of this report.

3. Project Arboriculturalist

A project arboriculturalist must be appointed to oversee certain aspects of the work and to provide consultation should the design or site conditions change in a way that produces unexpected conflict between retained trees and the development.

The project arboriculturalist must sign off the following before works can begin on site:

- The correct installation of tree protective fencing and its positioning relative to retained trees.

4. Schedule of Tree Works

The below schedule includes trees on site that require works throughout the course of the proposed development. For a full schedule of all trees on site, please refer to BS5837 Tree Survey and Categorisation Report at Former Gowerton Primary School, Tree Check 2025.

The location of trees proposed for removal, and the extent of proposed pruning is illustrated on the attached [Tree Retention/Removal and Protection Plan](#).

	Ref	Tag	Species	Comments	Life Stage	Retention Category	RPA Radius (m)	Photo
Trees Lost	No Tree Losses Proposed							
Pruning	W2	N/A	Laurel cherry (<i>Prunus laurocerasus</i>) Common holly (<i>Ilex aquifolium</i>) Horse chestnut (<i>Aesculus hippocastanum</i>) Sycamore (<i>Acer pseudoplatanus</i>) Goat willow (<i>Salix caprea</i>)	2-3m Crown reduction on the northern side and crown raise to 5m to prevent damage during development and provide clearance for the proposal.	M	B2	7.2	I
	T2	2704	Sycamore (<i>Acer pseudoplatanus</i>)	Crown raising to achieve 4-5m clearance above areas of caution where demolition and hard landscaping is to occur.	M	B2	8.4	/
	T3	2701	Sycamore (<i>Acer pseudoplatanus</i>)	Crown raising to achieve 4-5m clearance above areas of caution where demolition and hard landscaping is to occur	M	B2	5.4	/

5. Pruning Works

Pruning works, as outlined in the [Schedule of Tree Works](#) are proposed on site.

5.1. Control Measures for Pruning Works

Trees

- All pruning must be undertaken by competent and trained personnel, in accordance with BS 3998:2010 – Tree Work – Recommendations.
- Cuts must be made to the nearest appropriate lateral growth point, using natural target pruning. Ideally, retained laterals should be at least one-third the diameter of the removed branch. Cuts that result in a retained lateral with a diameter less than one-third of the removed section are generally undesirable and should be avoided where practicable.
- Contractors must be made aware of any legal constraints affecting the trees to be pruned, such as Tree Preservation Orders (TPOs) or Conservation Area designations. No work shall proceed on such trees without prior written approval from the Local Planning Authority.
- No cuts greater than 100mm in diameter shall be made on the main stem unless specifically identified in the [Schedule of Tree Works](#).
- All cuts to the main stem must retain the branch collar, using natural target pruning techniques. The branch collar must not be damaged or removed, as it is vital in defending the tree from pathogen entry.

Crown Raising

- All crown raising operations shall be carried out by competent and trained arborists, in full compliance with BS 3998:2010 – Tree Work – Recommendations.
- The extent of crown raising (i.e. the final height of the lowest retained branches above ground level) shall be as specified in the Schedule of Tree Works or as directed by the supervising arborist.
- No branch greater than 100mm in diameter shall be removed from the main stem or primary scaffold limbs unless specifically detailed in the approved Schedule of Works.
- All cuts shall be made using natural target pruning techniques, ensuring the branch collar is retained and not damaged or removed, to prevent pathogen ingress and promote natural wound occlusion.
- Crown raising shall be undertaken in a manner that maintains a balanced, natural crown form, avoiding the creation of an excessively uniform “lollipop” appearance.
- Where possible, secondary or subordinate branches should be shortened rather than removed entirely, to achieve the desired clearance while minimising the size and number of pruning wounds.
- The vertical distribution of foliage shall be maintained over at least two-thirds of the total tree height wherever practicable, in accordance with BS 3998 guidance.

6. Construction Exclusion Zones

The following trees and groups can be segregated from the proposed works within construction exclusion zones for the entirety of the development, with no requirement for access into their root protection or crown areas, and no conflict between the proposed layout of site and their above or below ground structures:

- G2
- W1
- W2
- T1

All trees, including those for which full segregation throughout development is not possible, will be segregated, as far as is possible from the development area by natural or pre-existing features on site, or by the installation of physical barriers as outlined below:

6.1. Method for Establishing Construction Exclusion Zones

- By maintaining a construction exclusion zone, with tree protective barrier fencing segregating retained trees from the rest of site, physical damage, both mechanical and related to soil compaction can be avoided.
- Tree protective barrier fencing must be installed in the configuration outlined in the [Tree Protection Plan](#).
- The crowns and root protection areas (having been measured and marked out on site) of all trees must be enclosed within the tree protective fencing. If more space is needed than the current crown extents allow, the project arboriculturalist must be consulted in order to arrange appropriate pruning measures.
- The alternative, lightweight level of tree protective fencing is recommended for this project as prescribed in BS5837 and shown in [Appendix iv](#) due to the lower volumes of expected site traffic, tight nature of the site and the small scale of the proposed works.
- Machine operators are to be briefed on positioning their equipment to avoid contact with branches from retained trees and the root protection zones.
- Where access is required beneath the crown or canopy area of retained trees, all pruning work to facilitate access must be carried out prior to the development stage, height restriction barriers are to be installed at the edge of areas of caution where entry beneath barriers occurs, and banksmen are to be assigned to make sure no contact with branches is made during the movement or use of plant.
- No materials are to be stored within the RPA's of trees for any period of time, including in areas of caution.
- All RPA's are to be checked on site and marked out, measured based on the RPA radius shown in the tree schedule.

7. Tree Locations

Consideration of the potential impact of development on proposed trees is based on the location of trees (as plotted in the baseline survey) relative to the proposed layout provided by the clients. Due to the potential for inaccuracies and discrepancies between drawings and realities on site, the site manager or project arboriculturalist must mark out root protection areas and the extents of proposed structures on site to verify the following:

- Unless otherwise accounted for in this report, there is sufficient space on site for the crowns and RPA's of all trees on site (based on their RPA radius shown in the tree schedule) to be fenced off for the duration of works.
- Where this report specifies that RPAs or tree crowns will be encroached upon, the actual on-site distances between trees and the conflicting features must be measured and verified to ensure they match the figures stated in this report.

If discrepancies exist, the project arboriculturalist is to be informed, so that updated assessments can be made.

8. Schedule of RPA and Crown Incursions

The schedule below outlines trees that cannot be fully segregated from the development area and describes the type and significance of the incursions that occur.

Reference	Tag	Life Stage	Retention Category	RPA Radius (m)	RPA Area (M ²)*	Type of Incursion	Incursion Area (M ²)	Proportion of RPA Affected	Impact or Risk	Methodology Applied	Photo
T2	2704	M	B2	8.4	221	Demolition Adjacent to the RPA. Working beneath Crown.	N/A	N/A	Risk of mechanical damage to the crown, scaffold structure or stem through contact with machinery. Demolition within or adjacent to RPA's poses risk of damage from a number of factors, including soil compaction through the movement of machinery, storage of debris or impact with demolished structures on the ground, damage to the above ground structure through collisions with demolished structures or machinery and chemical or dust damage from airborne particles created during demolition or leaching of chemicals from debris.	9.1. Method for working beneath crowns. 9.2. Demolition Within or Adjacent to the RPA's of Retained Trees	/
T3	2701	M	B2	5.4	91	Demolition Adjacent to the RPA. Working beneath Crown.	N/A	N/A	Demolition within or adjacent to RPA's poses risk of damage from a number of factors, including soil compaction through the movement of machinery, storage of debris or impact with demolished structures on the ground, damage to the above ground structure through collisions with demolished structures or machinery and chemical or dust damage from airborne particles created during demolition or leaching of chemicals from debris. Risk of mechanical damage to the crown, scaffold structure or stem through contact with machinery.	9.1. Method for working beneath crowns. 9.2. Demolition Within or Adjacent to the RPA's of Retained Trees	/

RPA's for groups represent the area per individual tree of the group, not the group as a whole.

**Incursion area represents an approximation of the area per effected tree within the group based on the formula provided in [appendix vi](#).

9. Protection Measures for RPA and Crown Incursions

The following methodologies have been applied against trees in the [Schedule of RPA and Crown Incursions](#) and must be followed in the areas indicated on the [Tree Protection Plan](#).

9.1. Method for Works Beneath Crowns

- All works beneath crowns must be supervised by the Project Arboriculturalist.
- Where construction works are to take place beneath the crowns of retained trees, all access facilitation pruning, as outlined within the [Schedule of Tree Works](#) is to be carried out before any work begins on site.
- If the gross height of any machinery on site exceeds the crown clearance, height restriction barriers must be installed to limit access beneath all trees not segregated from site by tree protective barrier fencing.
- All construction materials must be transported to their final location in their smallest possible components and assembled in place to minimise the risk of contact with the crown.
- Demolished components must be removed from beneath the crown area of trees in components not exceeding 3m in length.
- If machinery with a maximum reach height exceeding the crown clearance is to be operated within the areas of crown incursion shown on the [Tree Protection Plan](#), these works are to be supervised by the project arboriculturalist to ensure mechanical damage to the crown structure does not occur.
- Where temporary access is required, tree protective fencing is to be reinstated around the crown area as soon as access beneath the crown is no longer needed.

9.2. Demolition Within or Adjacent to the RPA's of Retained Trees

- Demolition within 5m of the RPAs of retained trees must be supervised by the Project Arboriculturalist.
- Demolition works must not be carried out until the tree protective fencing has been erected in accordance with the Tree Protection Plan.
- No machine access within the RPA's of trees is to be permitted during demolition works.
- Debris arising from demolition work must not be stored on the root protection area of trees for any period of time.
- Debris arising from demolition must not be allowed to fall onto any unprotected ground within the RPA of any trees.
- Any demolition work within 5m of the RPAs of retained trees should utilise low vibration techniques. Such as selective demolition.
- Regular wetting down of the demolition area should be implemented to prevent airborne dust from causing damage to the foliage of trees. Dust accumulation on trees should be monitored and hosed off of trees where necessary.
- Sediment barriers must be erected around demolition areas and debris storage areas to prevent runoff of harmful materials towards the rooting areas of trees or into water courses.

10. Impact Through Chemical Damage

There is a risk of chemical damage to trees from the mixing and storage of cement and other damaging chemicals.

All trees are at risk of chemical damage during development works and the methodology outlined below must be followed in order to prevent such incidents from occurring:

10.1. Method for the Control of Chemicals Potentially Harmful to Trees

- Materials that may have an adverse effect on the health of trees will not be stored or transported within the RPA. E.g., oil, bitumen, cement, and concrete.
- Concrete and cement will not be mixed within 10m of the base of trees.

- Cement and concrete will be mixed downhill from the base of trees or watercourses to avoid the risk of contamination to runoff.
- Where it is not possible to mix and store concrete downhill from trees and watercourses, sediment barriers will be used to prevent runoff from storage and mixing areas.

11. Impact of Retained Trees on the Proposed Structure

11.1. Shading Issues

The following trees may create future issues relating to shading on proposed structure.

- T2
- W2

Though as the proposals are not for living space, this is not a significant issue.

- No specific methodology is applicable for this section due to absence of significant impact.

11.2. Nuisance Caused by Detritus from Trees

Falling leaves, twigs and other material can cause significant nuisance to residents and users of site, leading to increased pressure for removal, the most common causes of nuisance from detritus are outlined here:

11.2.1. Accumulation of Leaves in Guttering-

The following trees are likely to contribute to an accumulation of leaf litter in the guttering of proposed structures due to their proximity and species, leading to increased pressure for removal and potential damage to the structure:

- T2
- W2

The following control measures are therefore proposed:

- Install gutter guards on all new guttering on site to prevent leaf buildup.

11.2.2. Accumulation of leaves on hard surfaces-

All trees on site are likely to contribute to an accumulation of leaf litter on proposed patios/footpaths/roads/driveways, potentially leading to increased pressure for removal as well as an increased risk of accidents on site:

The following control measures are therefore proposed:

- Implement a site management plan to include monthly removal of leaf litter from hard surfacing during the Autumn (September-December)

11.3. Perceived Threat of Damage to Property Through Tree Failure

The threat of tree failure causing injury or damage to property can cause anxiety for residents and increase pressure for removal of trees in close proximity to living spaces or other high use areas.

The following steps can be taken to reduce the risk of damage through failure and reassure residents and site users, thus reducing future pressure for removal:

- Detailed tree inspections to be carried out on all trees within potential falling distance of high use areas to be carried out every 18-24 months.
- Findings and recommendations of all tree inspections to be communicated clearly to residents and site users.
- All recommendations provided in tree safety inspections are to be carried out, with an emphasis on proactive tree management.

11.4. Displacement of Lightweight Structures through Secondary Root Thickening

The rooting areas of W2, T2, and T3 are segregated from the proposed structures and newly surfaced areas by pre-existing retaining or masonry boundary walls. As such, the risk of displacement to the proposed structures through root thickening is minimised.

12. Drainage and SUDS

No drainage plans have been provided but the topography of the site and positioning of trees does not suggest any likely conflicts between drainage arrangements and trees, if any drainage features are proposed near any arranged trees the project arboriculturalist must be consulted, including situations where water may be diverted towards or away from trees.

13. Scope for Preventing Tree Losses through Design Change

Not applicable as no tree losses are proposed.

Conclusion

The assessment finds that the proposed development results in limited interaction with retained trees, with the principal risks arising where demolition and construction occur beneath crowns or in proximity to RPAs. These risks relate primarily to potential mechanical damage, soil compaction, and chemical or dust-related impacts. The methodologies and control measures set out in this report—together with arboricultural supervision at key stages—are sufficient to manage these risks and reduce the likelihood of harm.

Minor pruning will provide necessary clearance and, combined with protective fencing and controlled working practices, will help ensure retained trees remain safeguarded throughout the works. Some residual risk remains due to the constrained nature of the site and the proximity of operations to tree structures; however, this is considered manageable with adherence to the specified procedures. Longer-term interactions, including shading and detritus, have been addressed through appropriate management measures, ensuring ongoing coexistence between the proposed development and the retained tree stock.

Appendix

-Appendix i: Photographs taken on site.

-Appendix ii: Tree protection/loss/retention plan showing the location of trees, their root protection areas and their retention category in relation to the proposed development.

-Appendix iii: A cascade chart from BS5837: 2012- Trees in relation to design, demolition, and construction– Recommendations explaining the categorisation of trees.

-Appendix iv: A diagram showing the recommended configuration for tree protective fencing, from BS5837: 2012- Trees in relation to design, demolition, and construction– Recommendations.

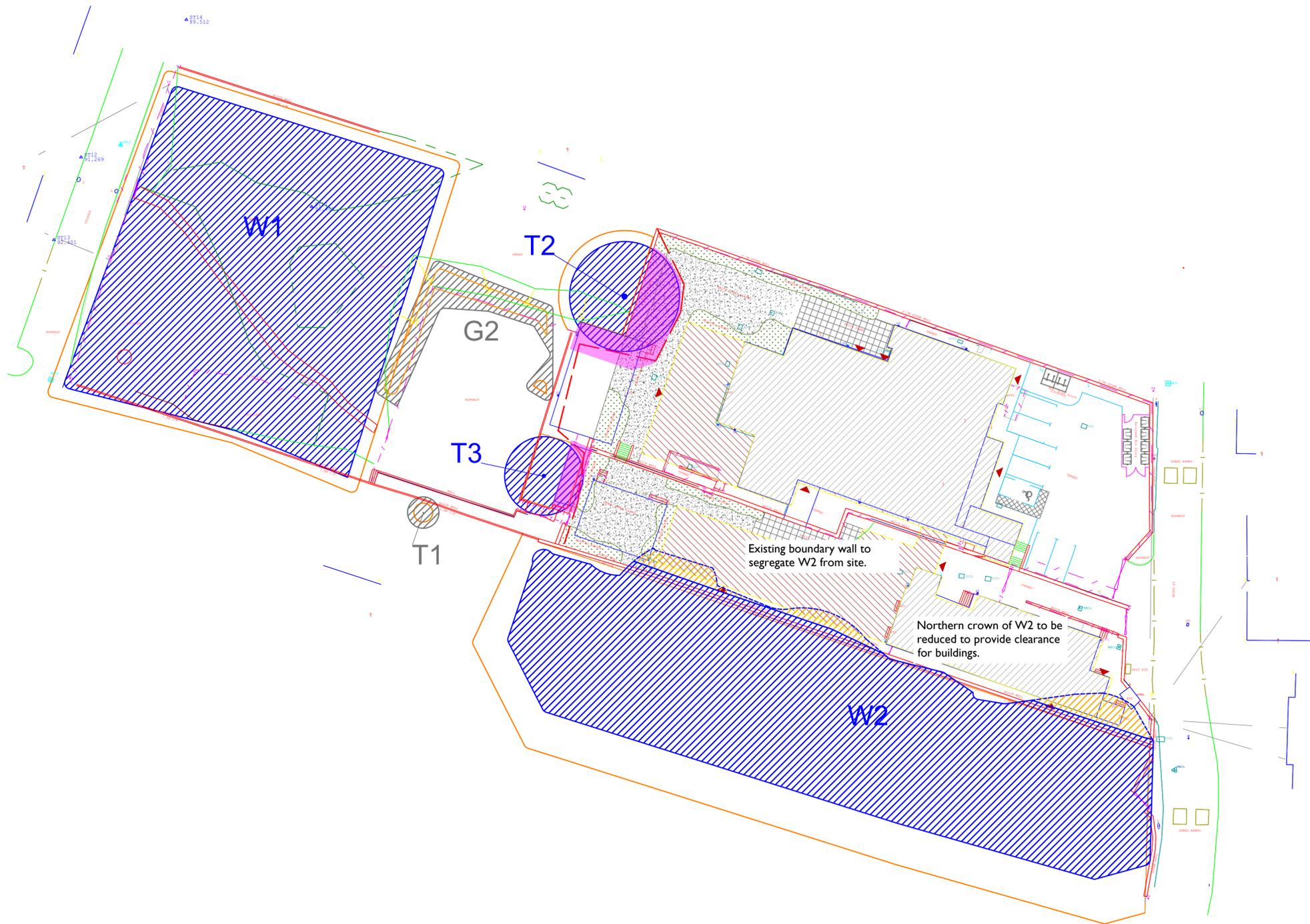
-Appendix v: A Glossary of terms and phrases commonly used in tree reports.

-Appendix vi: Formulas and Calculations.

Appendix i: Photos

Photo 1: [W2](#)- Will require some crown raising and reduction work.





Ref Tag	Species	Height	Stem Diam (mm)	Life Stage	Life Expectancy	Retention Category	RPA Area (m ²)	RPA Radius (m)
G2	Common alder (<i>Alnus glutinosa</i>), Goat willow (<i>Salix caprea</i>)	4	100	Y	10-20	C2	4.52	1.2
W1	Flowering cherry (<i>Prunus serrulata</i>), Silver birch (<i>Betula pendula</i>), Corsican pine (<i>Pinus nigra lancea</i>), Crack willow (<i>Salix fragilis</i>), Field maple (<i>Acer campestre</i>), Common alder (<i>Alnus glutinosa</i>), Common hawthorn (<i>Crataegus monogyna</i>), Mixed woodland (Mixed woodland), Pedunculate oak (<i>Quercus robur</i>), Goat willow (<i>Salix caprea</i>), Hazel (<i>Corylus avellana</i>), Horse chestnut (<i>Aesculus hippocastanum</i>)	14	550	M	20-40	B2	137	6.6
W2	Laurel cherry (<i>Prunus laurocerasus</i>), Common holly (<i>Ilex aquifolium</i>), Sycamore (<i>Acer pseudoplatanus</i>), Goat willow (<i>Salix caprea</i>)	14	600	M	20-40	B2	163	7.2
T1	Common alder (<i>Alnus glutinosa</i>)	6	100	Y	10-20	C2	4.52	1.2
T2	Sycamore (<i>Acer pseudoplatanus</i>)	13	700	M	20-40	B2	222	8.4
T3	Sycamore (<i>Acer pseudoplatanus</i>)	12	450	M	20-40	B2	91.6	5.4

Key

- Category A. Trees with high retention value.
- Category B. Trees with moderate retention value.
- Category C. Trees with low retention value.
- Category U. Trees unsuitable for retention due to condition
- Root Protection Area (RPA)

Tree Key

- Canopy extents, hatched area represents area within the canopy.
- Location of tree base, taken from position on TOPO or GPS.
- Reference number (T for trees, G for groups, W for woodlands, H for hedges).

RPA- an indication of the estimated minimum rooting area required by the tree. Calculated in accordance with BS5837.

- Tree Protective Fence
- Areas of Caution where measures outlined in the Gowerton Primary School Combined AIA and Method Statement must be observed.
- Tree or Group crowns to be partially reduced, with yellow hatch indicating original crown extents to be removed.

Tree Protection Plan	
Gowerton Primary School	
1:300 at A1	
Client	Squirrel Wood Properties
Survey Code	25004
Drawn by	LM
Surveyed by	JC
Date	24/04/2025

 **Tree Check**
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Drawing designed to be viewed in colour. Indicative only, check all RPA's on site in accordance with table.

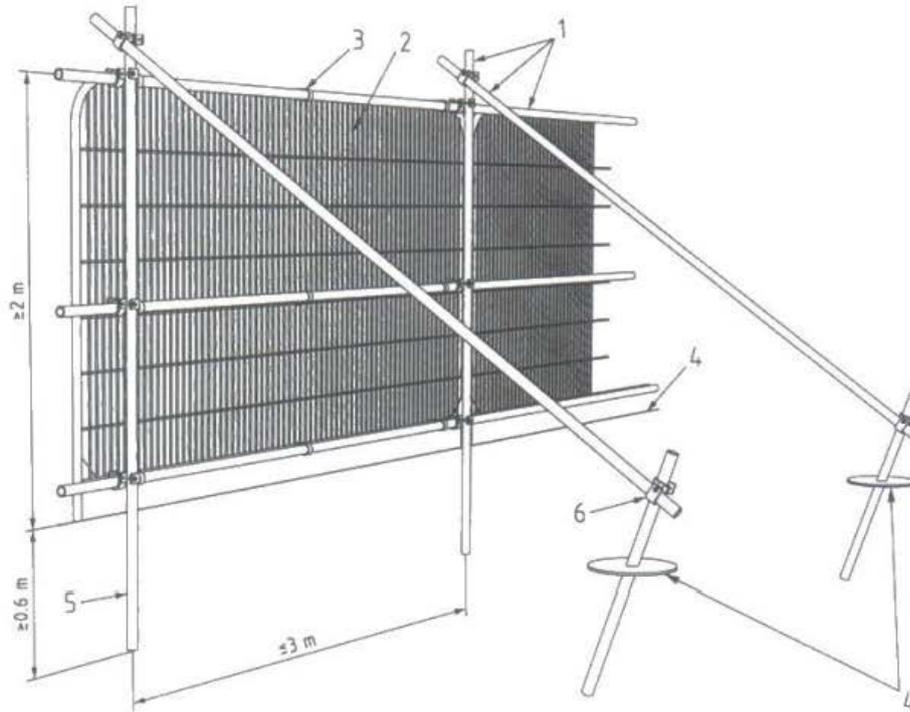
Appendix iii: Cascade Table for the Categorisation of Trees (BS5837)

Table 1 – Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)			BRITISH STANDAR D BS 5837:201 2
<p>Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years</p>	<ul style="list-style-type: none"> 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 U category trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <p>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7</p>			
	1 Mainly Arboricultural values	2 Mainly landscape values	3 Mainly cultural values, including conservation	
<p>Category A Those of high quality with an estimated remaining life expectancy of at least 40 years</p>	Trees that are particularly good examples of their species, especially if 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, groups or woodlands of particular visual importance as Arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation; historical, commemorative or other value (e.g. veteran trees or wood-pasture)	
<p>Category B Those of moderate quality with an estimated remaining life expectancy of at least 20 years</p>	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural benefits	
<p>Category C Those of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm</p>	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value, and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	

Appendix iv: Recommended Configuration for Tree Protective Fencing (BS5837)

Figure 2 Default specification for protective barrier



Key

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

Appendix v: Glossary

Aerial Inspection: A close inspection of the aerial part of a tree, either by mobile elevated work platform (MEWP) or by a tree surgeon (climbing inspection). **Adaptive Growth;** The growth of new wood in response to a stress concentration in the structure of a tree

Adventitious; A shoot which arises from tissue other than a growing shoot apex or bud, for instance in callus associated with a wound.

Anchorage; The holding of the structural root system of a tree within the soil.

Architecture; the formation and distribution of a tree's branch system.

Arboricultural Impact Assessment: That part of the BS 5837 (2012) procedure that evaluates the tree-related constraints to a development (loss of trees, encroachment into root protection areas etc.).

Arboricultural Method Statement: That part of the BS 5837 (2012) procedure that sets out how site works should be carried out near trees to avoid accidental damage.

Arboriculturalist: A person skilled or knowledgeable in the field of arboriculture. The alternative term 'arboriculturalist' is sometimes used. A person trained and experienced in the management of trees, and trees in relation to construction.

Assessment; The process of examining the variables involving a tree's condition and location in order to assess the risk posed by an individual tree.

Bole (trunk): The main, vertical stem or trunk of a tree.

Branch: a limb extending from the main stem or parent branch of a tree

Canopy: the combined foliage of a group of trees or a woodland, i.e. the combined area of numerous crowns.

Construction Exclusion Zone; The part of a development site from which all pedestrian and vehicular movements are excluded by protective fencing, typically to ensure the wellbeing of trees, during site works. Usually determined by the RPA of a tree.

Crown: in arboriculture the main foliage-bearing portion of a tree containing the leaves and branches

Defect: Any feature of a tree that is likely to make it less safe (in the case of a structural defect) or otherwise to reduce its health, longevity, landscape prominence or conservation value for any other reason.

Dysfunction: The cessation of physiological function in woody material, especially vascular functions such as water and sap transportation.

Failure: Fracture or deformation in any load bearing part of the tree, compromising stability or causing loss of support for part of, or all of the tree structure,

Group: More than one tree in close proximity that possess sufficient similarity or cohesiveness that they can be treated as a single entity for the purpose of this report.

Heave: deformation of shrinkable clay soil related to the expansion caused by rehydration.

Leader: the dominant, vertical shoot or stem of a tree.

Pruning: The cutting off or cutting back of tree branches or foliage to direct growth, remove an obstructing part, mitigate a nuisance, make safe, remove a diseased part, increase longevity, simulate natural damage, enhance habitat for wildlife etc.

Retained Tree: a tree that has been considered suitable for retention and therefore selected to remain as part of the final site layout.

Risk: the likelihood of a hazard to cause actual harm to people or property,

Root Protection Area (RPA); The area around the base of a tree that contains sufficient root volume to ensure the future well-being of the tree in the event of nearby soil disturbance (as on a development site). It is calculated according to guidelines in BS 5837 (2012).

Subsidence (branch): Branches, especially if spreading, tend gradually to subside under their own weight, and may eventually reach ground level in large open-grown trees. Rapid subsidence may result in crown separation or congested bark and can lead to branch failure where there is no support within the elastic limit of a given branch.

Subsidence (soil): Broadly, the downward movement of ground and an affected foundation influenced by soil properties, weather, foundation depth and nearby vegetation.

Targets: An element of tree risk: the subject of injury or damage within range of a hazard.

Tree: The definition of 'tree' is a composite of tree species, tree form and tree size. The blue book offers the following: A perennial plant with a self-supporting woody main stem, usually developing woody branches at some distance from the ground and growing to a considerable height and size. This definition has the three main elements in general form. **For the purposes of 5837 surveys, only plants with a stem diameter of 75mm or above are considered trees.**

Tree Constraint Plan (TCP): Site plan showing the tree-related constraints to development as envisaged in BS 5837 (2012). Common constraints are the loss of trees, encroachment into a tree's root protection area.

Tree Condition Inspection/Survey: A procedure to inspect a tree or trees. Variables used to describe a tree include position (if not already plotted on a topographical survey), species identity, maturity, various dimensions (main stem diameter, height, crown radius etc.), aspects of form, vigour, condition, incidence of pests, diseases, damage and defects, evidence of past management etc. Site factors, position in the landscape and site usage may also be relevant. , usually including its position, species identity, dimensions, age class, condition, conservation value etc. as appropriate, and to identify and evaluate defects. It is also common to make management recommendations (see schedule of works). Tree inspection is a fundamental of tree management and advisory practice in arboriculture.

Tree Preservation Order: (UK) an order made by a local authority or other planning authority to protect a tree, group of trees, area of (scattered) trees or woodland under Part VIII of the Town and Country Planning Act 1990. There have been several amendments, the latest being the Town and Country Planning (Tree Preservation) (England) Regulations 2012. An order is generally made on the grounds of amenity and expediency. Anyone proposing works to a TPO tree must seek prior consent from the authority using the form IAPP. With the advent of the 2012 regulations, some of the detail in existing TPOs in England has been revoked.

Tree Protection Plan: scale drawing prepared by an arboriculturalist showing the final layout proposals, tree retention and tree and landscape protection measures detailed within the arboricultural method statement (AMS), which can be shown graphically.

Trunk: see bole.

Vigour: The health and resilience of a tree (from the Latin 'to be strong'), reflected in the capacity of the whole tree to grow (see growth rate). The term is often used as a description of overall condition on a qualitative scale from 'high' to 'low'.

Visual Tree Assessment (VTA): The standard approach to tree risk assessment consisting of the diagnosis of structural defects and the evaluation of their significance from visible signs and the application of biomechanical criteria. Simple equipment such as a sounding mallet, probe and binoculars are commonly used.

Wind exposure: the degree to which a tree or other object is exposed to wind, with regard both to duration and velocity, often taking into account prevailing wind directions.

Windthrow: the blowing over of a tree at its roots.

Appendix vi: Formulas and Calculations

Method used to estimate RPA incursion area (per tree)

We treat the group RPA as a **circle of radius R** (from the average DBH).

Using an AutoCAD overlay of the site plan and our tree data, we **measured**:

- the **average depth** that works extend **beyond the RPA line**, and
- the **average width W** of that incursion strip.

For an “average” tree, we model that strip by two parallel lines cutting the circle.

Let $D = R -$ (average depth) be the distance from the RPA centre to the inner line of the incursion.

The **incursion area per tree** is then the overlap of that strip with the circle:

$$A = [(D + W)\sqrt{R^2 - (D + W)^2} - D\sqrt{R^2 - D^2}] + R^2 \left[\arcsin \left[\frac{D + W}{R} \right] - \arcsin \left[\frac{D}{R} \right] \right].$$

(The maximum width W of an incursion is $R-D$.)

Definitions:

R = RPA radius from average DBH; W = average incursion width;

$D = R -$ average depth = distance from centre to the inner line.

W = The distance between the inner line and the outer edge of the incursion object, or the outer edge of the circle, whichever is closest.

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Terms and conditions

The Client is the party commissioning and funding the survey. The Consultant is any person(s) employed by Tree Check Arboriculture LTD to carry out any related works, as well as Tree Check Arboriculture LTD as an entity.

Limitations

1. This survey reflects the condition of the trees as they were observed on 04/10/2023. The condition of trees can change quickly and if any significant change is observed then a qualified arboriculturist should be consulted regardless of the recommended reinspection period.
2. While every attempt has been made to provide accurate recommendations based on the condition of the observed trees, Tree Check Arboriculture Ltd. can accept no liability for damage, injury, or loss of property caused by faults that were not apparent at the time of inspection. These include but are not limited to faults that may only be visible seasonally such as fungal fruiting bodies, or faults that were obscured or inaccessible to the surveyor such as those high up in the crown or obscured by ivy.
3. During adverse weather conditions such as storms, otherwise healthy trees can fail. Trees should be visually inspected after any high winds.
4. This report cannot predict the reaction of inspected trees to external factors such as extreme climate events, accidents, or vandalism.
5. The author(s) can accept no liability for damages if the recommended works are not carried out as per this report in line with BS:3998.
6. Operational recommendations (e.g.) climb and dismantle, are for loose guidance only. It remains the responsibility of the assigned contractor to decide on the safest work method. Tree Check Arboriculture LTD. accepts no responsibility for damages occurring during the carrying out of recommended works.
7. This report does not cover any underground part of trees, nor does it consider any affect inspected trees may have on shrinkable clay soils since these issues are almost entirely restricted to areas of shrinkable clay soils and soil analysis was not specified in the brief.
8. **Recommendations made in this report do not override any legislation covering the affected trees. Trees in a conservation area, trees subject to preservation orders and groups of trees requiring felling licenses still require relevant permissions before work can be carried out. Unless otherwise agreed the Tree Check Arboriculture LTD will not be checking for the presence of this legislation or be applying for these permissions. The Client must contact the consultant if they are unsure on this matter.**
9. Certain areas of the site were inaccessible in the time scale of this survey due to dense vegetation cover. Areas and trees where this has been an issue are described in certain trees and groups in the survey table.
10. **The findings of this report cannot be relied upon after 12 months from the time of inspection or the recommended reinspection date (if sooner).**

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