BS 5837
Arboricultural Report

CROWN Tree Consultancy

Branching out through England and Wales

& Impact Assessment

at

Salamander Quay
Harefield
UB9 6NZ

Dated

1st September 2025

Contents

1. Introduction

1.1. Instruction

1.1.1. We are instructed by JDW Architects to:

- Undertake a Tree Survey to BS 5837 at Salamander Quays and assess all trees potentially within influencing distance of proposed development within the site.
- Plot the trees on a Tree Constraints Plan and record the data in a Tree Data Schedule.
- Provide preliminary management recommendations for the tree stock (independent of development proposals).
- Assess the potential impact of the development proposals and provide guidance as to appropriate mitigation measures.
- Produce an Arboricultural Impact Assessment for submission to the local authority.
- Produce a Tree Protection Plan showing locations of tree protection barriers and where ground protection will be required.

1.2. Purpose of this Report

1.2.1. This report is produced according to the guidance and recommendations within *BS 5837: 2012 - Trees in Relation to Design, Demolition, and Construction.* It is tailored to accompany a planning application. It assesses the impact of all proposed construction works on the tree population. Tree removal, canopy pruning, and the impact upon roots from various groundworks are all considered in detail. Best practice mitigation is specified wherever appropriate.

1.2.2. This document should not be used to inform management decisions relating to liability or risk management. Such decisions should be based on a more detailed inspection of the trees than was carried out for this report.

1.3. References

1.3.1. We have liaised with the project architect to attain an adequate understanding of the project to enable us to carry out an accurate assessment of the proposals.

1.4. Author

1.4.1. This report was compiled by Emma Hoyle FDSc (Arboriculture), ED (Forestry & Arboriculture), M. Arbor. A. Emma's resumé can be found in Appendix 3.

2. The Survey

2.1.1. A visual ground-level assessment of all trees was undertaken on the 5th of August 2025 by Emma Hoyle. No climbed inspections or specialist decay detection were undertaken.

2.2. Methodology

2.2.1. Structural condition was assessed by inspecting the stem and scaffold branches, looking for weak branch junctions, symptoms of decay, or other structural defects. Any recommended works were made to ensure the trees are in acceptable structural condition. The position of the tree and its potential targets were considered.

2.2.2. Physiological condition was assessed by inspecting the stem, branches, and foliage for symptoms of disease. The vigour of the tree was also considered.

2.2.3. Key measurements were obtained using a diameter tape, clinometer, distometer and logger's tape. Where this was not practical, measurements were estimated.

2.2.4. Some trees may be surveyed as groups, though this is usually avoided close to areas likely to be developed.

2.2.5. The locations of all key trees have been plotted according to measurements taken on-site.

2.2.6. Finally, a *Retention Category* was allocated. The relevant BS5837 2012 cascade chart is duplicated below.

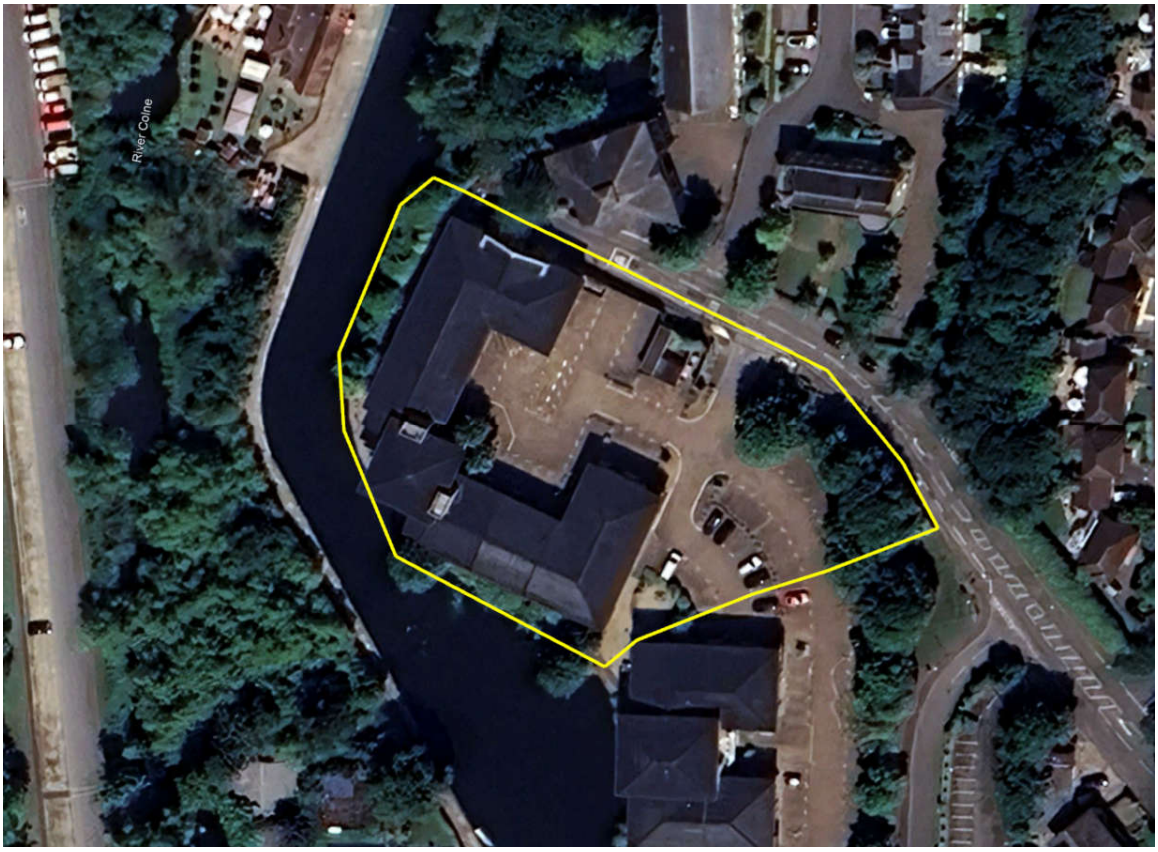
Table 1 **Cascade chart for tree quality assessment**

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.*			See Table 2
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	See Table 2
Category C **Trees of low quality** with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

2.2.7. Further guidance on interpreting BS 5837 and our survey methodology is given in Appendix 1.

2.3. Survey Extent

2.3.1. The area indicated below[1] shows the extent of the survey. Our survey included all trees within the curtilage of the property and those adjacent to it.



2.4. Summary of Observations

2.4.1. Salamander Quay is a commercial property with associated car parking.

2.4.2. Within the survey area we identified a mixture of individual and groups of Retention Category B trees and five Retention Category C trees. Tree species present include Crab Apple, Field Maple, Norway Maple and Sycamore.

2.4.3. The Tree Constraints Plan and Tree Data Schedule (see Appendix 4) should be referred to for descriptions and locations of all trees.

[1] Image taken from Google Earth and may not be current

3. Vegetation Overview (independent of proposals)

This section summarises all the recommendations within the Tree Data Schedule regardless of whether trees are to be retained, felled or pruned to facilitate the proposed development. It does not specify works that may be required to facilitate the development proposals.

3.1. Preliminary Management Recommendations

3.1.1. The trees were all deemed to be in an acceptable condition, and no significant defects were observed. Consequently, no remedial works have been recommended.

3.2. Future Inspections

3.2.1. The table below suggests a schedule of future inspections based on the condition and location of each tree:

Inspection Frequency (years)	Tree Number
0.5	None
1	None
1.5	T005, T006, T007, T008 and T009
3	All other surveyed trees.

3.2.2. The trees should be inspected sooner if there is a noticeable decline in their condition or following extreme weather events.

3.3. Species Present – Additional Information

3.3.1. The table below contains general information about the tree *species* (rather than the actual tree *specimens*) included in the survey. Its purpose is to assist readers who are unfamiliar with the characteristics of the various species.

Species	Typical Height at Maturity (m)	Typical Canopy Spread at Maturity (m)	General Notes
Crab Apple	10	10	Deciduous tree native across Europe and W. Asia. Many cultivars available bred for their attractive fruit or flowers. Flowers white, pink or red in spring. Some species will self-pollinate. Excellent habitat tree. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Malus+sylvestris for more info.
Field Maple	12	10	Deciduous tree native to England & Wales, central and southern Europe, Turkey and west Asia to North Africa. Good hedging species as it has a habitat value and responds well to pruning. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Acer+campestre for more info.
Norway Maple	25	16	Deciduous tree native to S. Norway, S. Sweden and across Europe. Red buds and light brown grooved bark distinguish it from sycamore in winter. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Acer+platanoides for more info.
Sycamore	25	16	Deciduous tree native to S. Europe, widely naturalised in the UK. Often regarded as a weed species due to its invasive nature and ability to tolerate most conditions. Responds well to pruning. Not a good tree to park beneath in summer due to the sticky sap secreted by aphids. Visit http://www.pfaf.org/user/Plant.aspx?LatinName=Acer+pseudoplatanus for more info.

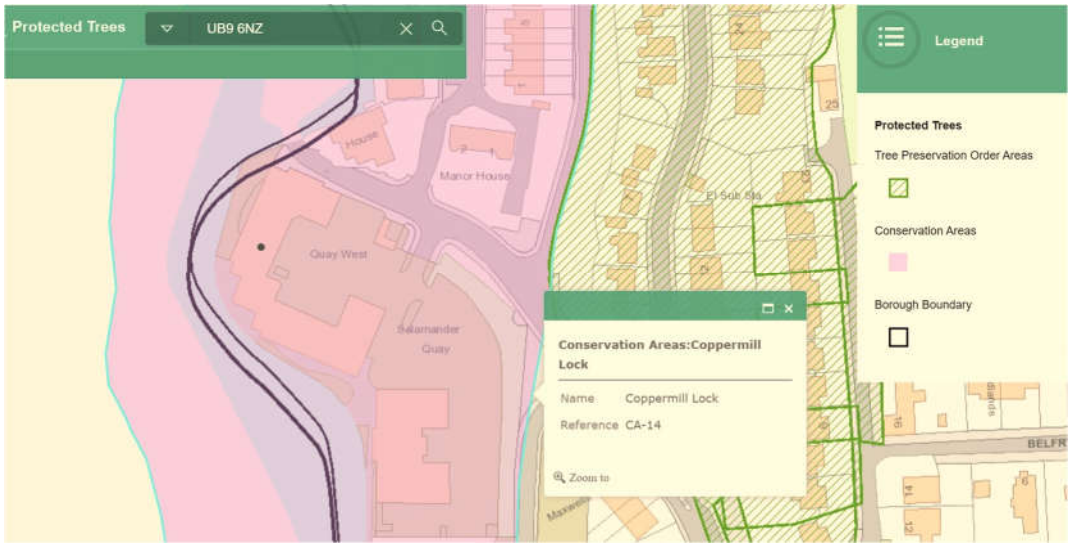
The figures quoted regarding typical height and canopy spread should be treated as approximate. Actual heights and spreads vary according to several environmental factors such as soil conditions, climate, and the presence of competing vegetation. The figures quoted are not the maximum dimensions that the species may attain.

4. Statutory Protection – TPOs and Conservation Area Status

Before undertaking most works on trees protected by a tree preservation order[2], consent needs to be formally obtained from the local authority. Where trees are in a conservation area (but not protected by a TPO), works are generally not permitted without first giving the local authority six weeks' notice of intention[3]. Unauthorised works to protected trees, or trees in a conservation area, may result in criminal prosecution and a fine. Where works are required to implement a fully approved development, no such consent or notice is required.

4.1. Desktop Research

4.1.1. On the 1st of August 2025, we accessed the local authority website. A screenshot is produced below:



This indicates that:

- The site lies within the **Coppermill Lock Conservation Area**.
- There are no tree preservation orders affecting trees within the site.
- There are no tree preservation orders on trees immediately adjacent to the site.

4.2. Felling Licences

4.2.1. Felling licences issued by the Forestry Commission are sometimes required before removing trees. However, these licenses are aimed toward woodland and forestry management. Felling licences are NOT required for any of the following:

- Lopping, topping or pollarding.
- Removal of small trees (stem diameter less than 8cm) or fruit trees.
- Works to any trees growing within domestic gardens, orchards, or the Inner London boroughs.
- Operations involving less than five cubic meters of timber in any quarter year.
- Thinning and understorey clearing operations.
- Dangerous trees, nuisance trees, some diseased trees.
- Where removal is required to enable a fully approved development.

4.2.2. More detailed guidance can be found at https://www.gov.uk/government/publications/tree-felling-getting-permission

4.2.3. Hence a felling license will not be required for any tree removal if the development receives approval.

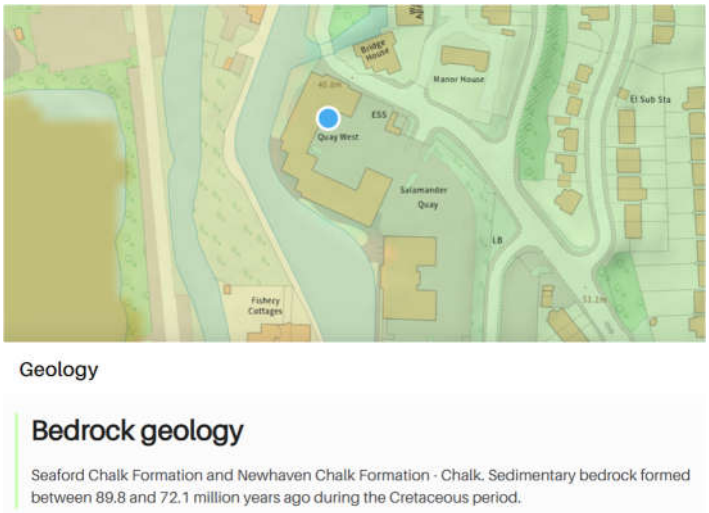
[2] https://www.gov.uk/guidance/tree-preservation-orders-and-trees-in-conservation-areas

[3] During this time, the local authority may elect to create a tree preservation order or to inform the applicant that they have no objection to the proposed works. If the local authority does not respond within six weeks, then the intended work may be undertaken. Note: the local authority cannot refuse consent for works to trees within a conservation area; they may only create a tree preservation order if they wish to have further control over what works are undertaken.

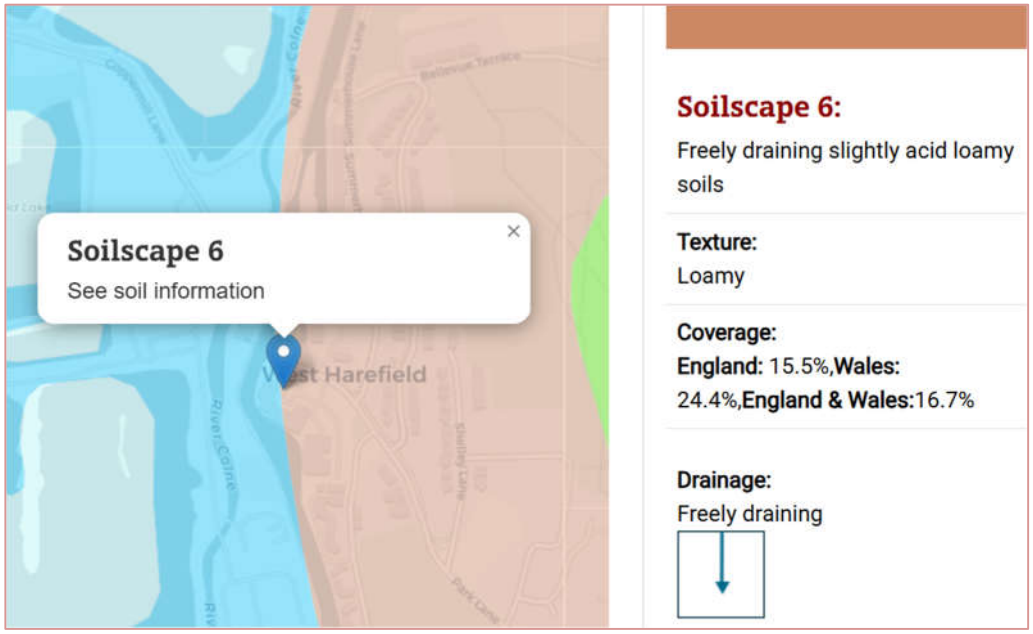
5. Local Geology and Soils

5.1. Desktop Research

5.1.1. Desktop research into local geology based on the postcode **UB9 6NZ** obtained the following results:



Source: https://geologyviewer.bgs.ac.uk/?_ga=2.100849601.17774785.1660229567-1737936254.1660229567



Source http://www.landis.org.uk/soilscapes/

5.2. Site Investigations

5.2.1. We are unaware of any specific investigations into soil properties at the site.

5.3. Conclusion and Relevance

5.3.1. Based on the information reproduced above, local soils are assumed to have a loamy texture.

5.3.2. Loamy soils contain a mixture of clay and sand. Soil compaction may occur due to vehicular activity on building sites, so ground protection is recommended wherever vehicles operate. Most tree species will grow well in loamy soils.

6. Arboricultural Impact Assessment

6.1. Overview

6.1.1. It is proposed to convert the existing commercial building into a residential building and undertake landscaping works, indicated on the drawings in Appendix 4.

6.1.2. The table below summarises the potential impact on trees due to various activities.

Activity	Trees Potentially Affected
Tree Removal	None
Tree Pruning	None
RPA: Building Foundations	None
RPA: Other Foundations	None
RPA: New Pedestrian Surface	T002
RPA: Replace Existing Hard Surface	T001 and T002
RPA: Underground Services	None Anticipated
RPA: Change of Ground Levels	None
RPA: Soil Compaction	Trees adjacent the construction area (preventable by installing tree protection measures)

6.1.1. Other potentially damaging activities often associated with construction sites include demolition or the careless use of plant machinery, hazardous materials, or fires. All of the above potential impacts are considered in detail throughout this Section.

6.2. Tree Removal

6.2.1. All trees are to be retained.

6.3. Tree Pruning

6.3.1. The retained tree canopies are sufficiently far from proposed building works and high over access routes so that they should not be impacted by construction activity. Consequently, no pruning works are required to enable the build.

6.3.2. However, if it becomes necessary to undertake any pruning works, to facilitate scaffolding, for example, the project arborist should be consulted and approval sought from the local authority.

6.4. Impact of Foundations

6.4.1. No new building foundations are proposed within the Root Protection Area of retained tree. Consequently, no restrictions on foundation design or implementation are considered necessary from an arboricultural perspective.

6.5. Impact of Surfacing

6.5.1. As part of the proposed landscaping works, new surfaces, and replacement of existing surfaces is proposed.

6.5.2. Where existing surfaces are to be removed and replaced, excavation should not exceed the depth of any existing surface and it sub-base to avoid impacting roots. Hand tools only are recommended when undertaking resurfacing works in the vicinity of T001 and T002.

6.5.3. Where a new pedestrian surface is proposed over the Root Protection Area of T002, excavation should be limited to a depth of 50mm to remove any loose topsoil and should be undertaken using hand tools only. The new pedestrian surface over the RPA of T002 should have permeable properties.

6.5.4. It is also proposed to remove existing hard surfacing over the Root Protection Areas of T001 and T002 and replace with a new soft, landscaped surface. So long as excavation does not exceed the removal of any existing surface and its sub-base, there shall be an improvement in rooting conditions.

6.5.5. Ground protection measures will need to be installed during construction activity to minimise soil compaction.

6.6. Underground Services

6.6.1. If installation of any new underground services is required, these should be located outside of Root Protection Areas. Otherwise, the project arborist must be consulted, and approval obtained from the local authority.

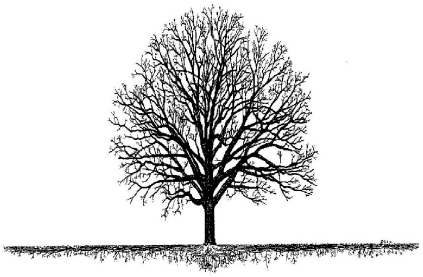
6.6.2. There is considered to be ample opportunity for underground services to be installed without impacting trees.

6.7. Changes in Ground Levels

6.7.1. No changes to ground levels are proposed over Root Protection Areas.

6.8. Soil Compaction

6.8.1. The majority of tree roots lie within the upper soil horizons. This is because the availability of oxygen decreases with depth, and roots need to breathe to stay alive. In addition, nutrients are more readily available in the form of organic matter close to the soil surface.



6.8.2. Healthy soils contain about 25% air space between solid particles. Increased loading of the soil caused by construction activity causes air to be squeezed out as the soil becomes compacted, preventing roots from breathing. Even an increase in pedestrian activity may cause some soil compaction.

6.8.3. It is important, therefore, that ground compaction and soil disturbance over Root Protection Areas should be avoided during the construction phase. Where access is required over Root Protection Areas, suitable ground protection measures must be installed.

6.9. Demolition Activities

6.9.1. No demolition is proposed close to trees.

6.10. Waste and Materials Storage

6.10.1. All hazardous materials (including cement and petrochemical products) will need to be controlled according to COSHH regulations in order to ensure there is no detrimental impact on tree health. Provision shall need to be made to ensure that cement spillage avoids all Root Protection Areas.

6.10.2. Areas designated for the storage of building materials and waste products will need to be approved by the local authority. Root Protection Areas should be avoided. Where this is not possible, suitable ground protection measures will need to be installed.

6.11. Cabins and Site Facilities

6.11.1. Any cabins and welfare facilities should be located outside of Root Protection Areas wherever possible. Otherwise, the project arborist should be consulted, and approval obtained from the local authority.

6.12. Boundary Treatments

6.12.1. No changes are proposed to the existing boundary features that might impact trees.

6.13. Impact of Retained Trees on the Development

6.13.1. Adequate space has been allowed between retained trees and the proposal. Consequently, the proposal shall not result in increased pressure to remove or overly prune any of the retained trees.

6.13.2. The proposal does not alter the current juxtaposition between buildings and trees, so there should be no increase in pressure to overly prune or remove them.

6.13.3. The foundations and any new surfaces should be designed to accommodate all potential impacts due to future tree-rooting activity. These include potential vegetation-related subsidence, vegetation-related heave, and lifting of surfaces / light structures due to direct root pressure.

6.14. Arboricultural Method Statement

6.14.1. BS 5837 recommends that a detailed methodology is agreed in the form of an Arboricultural Method Statement, which shall ensure that trees are well protected during the construction phase. This should detail all tree protection measures and limitations on construction activity. All of the issues raised within this Impact Assessment should be covered by the Method Statement.

7. Photographs

Refer also to the Tree Constraints Plan for photo locations

Photo 1.

Photo 2.

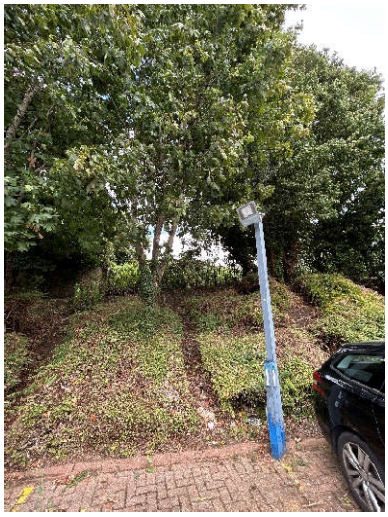


Photo 3.

Photo 4.

Photo 5.

Photo 6.

Photo 7.

Photo 8.

Photo 9.

Photo 10.

Appendix 1: BS 5837: 2012 – Interpretation Guide

This Standard prescribes the principles to be applied to achieve a satisfactory juxtaposition of trees and structures. It sets out to assist those concerned with planning applications to form balanced judgments.

Stage 1: Survey Details and Notes

A ground-level visual survey is undertaken. Only trees with a stem diameter over 75mm, which lie within the site boundary or relatively close to it, are included.

Where applicable, trees with significant defects are highlighted and appropriate remedial works are recommended.

Wherever practicable dimensions are obtained using diameter tapes, logger's tapes, distometers and clinometers. Where obstacles prevent accurate measurement, dimensions are estimated. Trees on privately owned third-party land are surveyed from the best available vantage point and observations relating to the condition of these trees should be treated accordingly. All height measurements should be regarded as approximate.

Data is recorded for each tree and is presented in a Tree Data Schedule. Each tree is allocated a ***Retention Category*** according to its size, amenity value, condition, and safe useful life expectancy. The categories are allocated independently of development proposals. Our interpretation of the Retention Categories is explained below:

Retention Categories

A Category: Trees of high quality and amenity value. Usually, mature trees with a significant life expectancy which would enhance any development. Retention of these trees is strongly encouraged.

B Category: Trees of moderate quality and amenity value. Usually these are maturing trees or younger trees with exceptional form. Retention of these trees is desirable though the removal of occasional specimens may be acceptable.

C Category: Trees of low quality or small specimens with a relatively low amenity value. These trees are not considered to be a material planning constraint and their removal will generally be seen as acceptable in order to facilitate development.

U Category: Trees of such low quality that their removal is recommended regardless of development proposals.

Occasionally trees are borderline and do not fall neatly into one of these categories. In such cases we apply a superscript (**+/-**) such that:

C^{+} Indicates borderline C/B, though Category C is deemed to be most appropriate.

B^{-} Indicates borderline C/B, though Category B is deemed to be most appropriate.

The British Standard suggests that each of the A, B and C categories may be further subdivided (A1, A2, A3, B1, B2, B3 etc) such that subcategory 1 denotes mainly arboricultural values, subcategory 2 denotes mainly landscape values and subcategory 3 denotes mainly cultural values (including conservation). Multiple subcategories may be used.

Our experience suggests that these subdivisions lack clarity and can be confusing. Within this report subcategories are **not** denoted. Where appropriate, the use of phrases such as '*Part of a formal group*', or '*Has a high ecological value*', or '*Offers good screening to the site*' are incorporated into the observation section of the Tree Data Schedule. We believe this conveys all relevant landscape and cultural information without any confusion.

Tree Constraints Plan (TCP). This indicates the position, crown spread, Retention Category and Root Protection Area of each tree. It is used to inform where development may proceed without causing damage to trees.

Root Protection Area (RPA). This is the area around each tree likely to contain the majority of roots. It should ideally remain undisturbed to avoid a detrimental impact on tree health. For single stemmed trees It is calculated according to the formula "radius of RPA" = "12 x stem diameter". Where a tree has more than one stem, the equivalent-single-stem diameter is usually recorded. This is calculated by adding the squares of the stems and then finding the square root of this total. The radius of the Root Protection Area is then calculated by multiplying the equivalent-stem-diameter by 12.

Stage 2: Arboricultural Impact Assessment

After the initial survey and the production of the Tree Constraints Plan, arborists and designers are encouraged to work together to establish a design proposal with minimal impact on the high-quality trees. An assessment should be made of all possible impacts including the impact that the trees may have on the proposal. The arborist may recommend mitigation strategies to minimise these impacts and help achieve a more harmonious juxtaposition between buildings and trees.

Stage 3: Arboricultural Method Statement

This type of report specifies the measures necessary to protect trees against damage from construction activity. The Method Statement should be written in a manner that it may be conditioned and enforced by the local authority upon granting of planning permission. The site manager should be familiar with all aspects of the Method Statement and should ensure that all persons working on the site are aware of those aspects which appertain to their work. This includes service installation engineers and operators of plant machinery.

Appendix 2: Glossary

This section explains the terms used in the **Tree Data Schedule** (see Section 3 and Appendix 4).

A2.1 General Observations

Numbering System: Each item of vegetation has its own unique number prefixed by a letter such that T1=Tree 1, G2=Group 2, H3=Hedge 3 and W4=Woodland 4, S5=Shrub 5.

Age Categories:

- **Young** Usually less than 10 years old.
- **Semi-Mature** Significant future growth to be expected, both in height and crown spread (typically below 30% of life expectancy).
- **Early-Mature** Full height almost attained. Significant growth may be expected in terms of crown spread (typically 30-60% of life expectancy).
- **Mature** Full height attained. Crown spread will increase but growth increments will be slight (typically 60% or more of life expectancy).
- **Veteran** Notable tree with features associated with atypically advanced age (such as unusually large girth, crown retrenchment or significant stem decay). Veteran trees have a high habitat value and require a Buffer Zone / RPA with a radius of at least 15x stem diameter and extending at least 5m beyond the dripline. Any natural or semi-natural habitats within the buffer zone should be well protected and retained (or improved) as part of the development. Lawns and cultivated gardens should be discouraged. See https://www.gov.uk/guidance/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions
- **Over Mature** Tree with declining health but not worthy of veteran status.

Species: Common names and Latin names are given.

Height: Measured from ground level to the top of the crown.

Stem Diameter: Taken at 1.5m above ground level where possible. On multi-stemmed trees this measurement may be taken at ground level, though usually an indication of the number of stems and average diameter is given, e.g. 3 x 30cm.

Crown Height: Measured from ground level to the height at which the main crown begins. Where the crown is unbalanced, it is measured on the side deemed to be most relevant. This is usually the side facing the area of anticipated development.

Tree Diagram: This scaled drawing is computer generated based on measurements taken for stem diameter, crown height and spread, and overall height. It is designed to help the reader rapidly assess the data. It is not an accurate representation of the form of the tree.

Crown Spread: Measured N, E, S & W, taken from the centre of the stem and usually rounded up to the nearest metre.

Observations: If a tree's position is considered to be relevant it will be commented upon (e.g. overhanging a children's play area). Tree form and pruning history are also recorded along with an account of any significant defects. Defects and descriptive terms are dealt with in more detail at the end of this section.

Recommendations: Usually based on any defects observed and intended to ensure that the tree is in an acceptable condition.

Priority Scale: Depending upon the threat posed by the tree, and the likelihood of failure, recommendations should be carried out according to the following priority scale:

- **Urgent** To be carried out as soon as possible.
- **Very High** To be carried out within 1 month.
- **High** To be carried out within 3 months.
- **Moderate** To be carried out within 1 year.
- **Low** To be carried out within 3 years.

Where funds permit, works should be undertaken sooner, though **it is not recommended that the timescales above are extended**.

Inspection Frequency: An interval of 6 months, 1 year, 1.5 years or 3 years is allocated before the next inspection is due. Wherever practical, consideration should be given to seasonal changes so that deciduous trees are not always surveyed in winter when they have no leaves, or in summer when leaves may obscure branches within the upper crown.

Vigour: An indication of growth rate and the tree's ability to cope with stresses:

- **High** Having above average vigour.
- **Moderate** Having average vigour.
- **Low** Having below average vigour.
- **Very Low** Tree is struggling to survive and may be dying.

Physiological Condition:

- **Good** Healthy and with no symptoms of significant disease.
- **Fair** Disease present or vigour is impaired.
- **Poor** Significant disease present or vigour is extremely low.
- **Very Poor** Tree is dying.

Structural Condition:

- **Good** Having no significant structural defects.
- **Fair** Some defects observed though no high priority works are required.
- **Poor** Significant defects found. Tree requires monitoring or remedial works.
- **Very Poor** Major defects which will usually require significant remedial works or tree removal.

Amenity Value:

- **Very High** Exceptional specimen, observable by a large number of people.
- **High** Attractive specimen, observable by a significant number of people.
- **Moderate** One of the above factors is not applicable.
- **Low** Unattractive specimen or largely hidden from view.

Life Expectancy: The estimated number of years before the tree may require removal. Classified as (<10), (10 – 20), (20 – 40), or (40+).

Retention Category: These are explained in detail in Appendix 1.

A2.2 Evaluation of Defects

Cavities, wounds, deadwood etc are all evaluated as follows:

- **Major** Such that structural integrity is, or will become, compromised and the tree is, or will inevitably become, hazardous.
- **Significant** A defect that may over time become a major defect, though not necessarily so. This will depend on the vigour of the tree and its ability to deal with decay etc.
- **Minor** A defect that is unlikely to develop into a major defect.

General Glossary

A general glossary of arboricultural terms may be found on our website at
https://www.crowntrees.co.uk/crown-tree-consultancy/glossary-tree-terms/

Appendix 3: Author's Qualifications

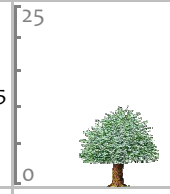
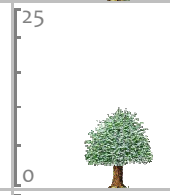
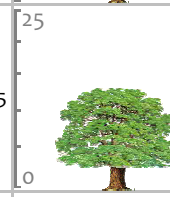
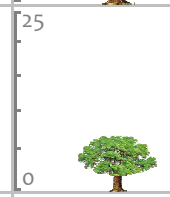
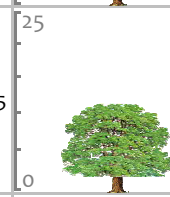
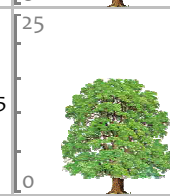
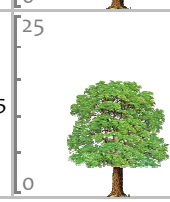
Qualifications & Experience of Emma Hoyle FDSc (Arboriculture), ED (Forestry & Arboriculture), M. Arbor. A.

Emma is a qualified Arboricultural Consultant educated to Level 5 in Arboriculture at Askham Bryan College, is a professional member of the Arboricultural Association and is a LANTRA-accredited *Professional Tree Inspector*. She has worked for Crown Consultants since 2015 and has since written numerous reports relating to all aspects of arboriculture including; planning and development, vegetation-related subsidence, tree preservation orders and tree risk assessment. Emma regularly attends seminars and events in order to keep abreast with current knowledge and best practice in Arboriculture.

Prior to becoming an arboricultural consultant, Emma worked for two reputable tree surgery firms from 2008 and became an NPTC Qualified tree surgeon after completing a Level 3 Extended Diploma in Forestry and Arboriculture at Askham Bryan College. Emma also has experience in other areas of arboriculture such as forest clearance, tree planting, tree maintenance and landscaping.

Appendix 4: Tree Data Schedule and Drawings

The Tree Data Schedule and any drawings accompanying this report follow this page. They are also provided as separate documents for ease of printing and screen viewing.

Reference G = Group H = Hedge	Age & Species	Height (m)	Crown Ht (m)	Diameter (cm)	Crown Spread (m) N W E S	Scaled Tree Diagram (m) 9 0 9	Notes	Recommendations (Independent of any development proposals) Priority / Inspect Freq (yrs)	Vigour Physiological Condition Structural Condition	Amenity Value Life Expectancy (yrs) Retention Category
T001	Early-Mature **Crab Apple** Malus sylvestris.	10	3	30	N 3 W 3 E 3.5 S 2.5		Form: Multiple stemmed with a compact crown. History: Crown lifted. **Defects: Minor Included bark at stem junctions.**	No action required. n/a / 3	Moderate Good Good	Moderate 40+ **B -**
T002	Early-Mature **Crab Apple** Malus sylvestris.	10	3	27	N 3 W 2 E 3 S 2		Form: Multiple stemmed with a compact crown. History: Crown lifted. **Defects: Minor Included bark at stem junctions.**	No action required. n/a / 3	Moderate Good Good	Moderate 40+ **B -**
T003	Early-Mature **Norway Maple** Acer platanoides.	13	3	48	N 5 W 5.5 E 4.5 S 5		Form: Multiple stemmed at 2m. History: No significant pruning. **Defects: No significant defects observed.** Other: Ivy prevented a detailed inspection.	No action required. n/a / 3	Moderate Good Fair	Moderate 40+ **B**
T004	Semi-Mature **Field Maple** Acer campestre.	5.5	1.5	21	N 3 W 1.5 E 4 S 3		Form: Multiple stemmed at ground level. **Defects: Minor deadwood.** Other: Ivy prevented a detailed inspection.	No action required. n/a / 3	Moderate Fair Fair	Low 20-40 **C**
T005	Semi-Mature **Norway Maple** Acer platanoides.	11	2	28	N 5 W 5 E 3.5 S 4		Form: Multiple stemmed at 1.5m. History: Crown lifted. **Defects: No significant defects observed.**	No action required. n/a / 1.5	Moderate Good Good	Moderate 40+ **B**
T006	Early-Mature **Norway Maple** Acer platanoides.	15	2.5	35	N 6 W 4.5 E 3.5 S 4.5		Form: Multiple stemmed at 2m. History: Crown lifted. **Defects: Minor cavities at old pruning wounds.**	No action required. n/a / 1.5	Moderate Good Good	Moderate 40+ **B**
T007	Semi-Mature **Norway Maple** Acer platanoides.	15	3.5	29	N 4 W 3.5 E 3.5 S 3.5		Form: Multiple stemmed at 1.5m. History: Crown lifted. **Defects: No significant defects observed.** Other: Ivy prevented a detailed inspection.	No action required. n/a / 1.5	Moderate Good Fair	Moderate 40+ **B -**

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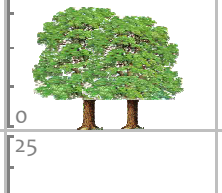
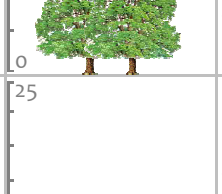
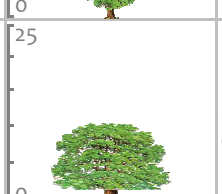
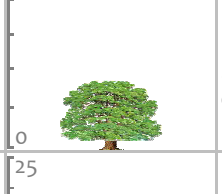
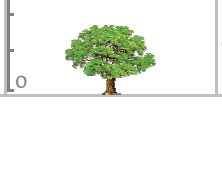
G008	Early-Mature **Field Maple** Acer campestre.	av 15	av 4	av 30	av 5 5 5 5 each		Position: Top of embankment. Form: Group of similar specimens. History: No significant pruning. **Defects: No significant defects observed.** Other: Limited inspection, dimensions estimated. Ivy prevented a detailed inspection.	No action required. n/a / 1.5	Moderate Good Fair	Moderate 40+ **B -**
G009	Early-Mature **Field Maple** Acer campestre.	av 16	av 4	av 35	av 5 4 4 5 each		Position: On top of embankment. Form: Group of four similar specimens. **Defects: Minor deadwood.**	No action required. n/a / 1.5	Moderate Good Good	Moderate 40+ **B**
G010	Semi-Mature **Field Maple** Acer campestre.	av 16	av 1.5	av 18	av 4 4 4 5 each		Position: Situated on third party land. Form: Three close growing specimens, all twin stemmed. **Defects: No significant defects observed.**	No action required. n/a / 3	Moderate Good Good	Moderate 40+ **B**
T011	Semi-Mature **Field Maple** Acer campestre.	6	1	15	2 2 2 2		Form: Balanced crown. **Defects: No significant defects observed.** Other: Vegetation prevented a detailed inspection.	No action required. n/a / 3	Moderate Good Good	Low 40+ **C**
T012	Early-Mature **Sycamore** Acer pseudoplatanus.	10	2	40	4 5 5 5		Position: Ownership unclear. Form: Multiple stemmed. **Defects: No significant defects observed.** Other: Limited inspection, dimensions estimated. Vegetation prevented a detailed inspection.	No action required. n/a / 3	Moderate Good Good	Moderate 40+ **C+**
T013	Early-Mature **Sycamore** Acer pseudoplatanus.	8.5	0.5	35	3.5 4.5 3 5		Position: On canal embankment. Form: Multiple stemmed. **Defects: No significant defects observed.** Other: Access prevented a detailed inspection, some dimensions estimated.	No action required. n/a / 3	Moderate Good Good	Moderate 40+ **C+**
T014	Early-Mature **Sycamore** Acer pseudoplatanus.	8.5	1.5	22	4 2.5 4 4		Position: On canal embankment. Form: Multiple stemmed. **Defects: No significant defects observed.** Other: Access prevented a detailed inspection, some dimensions estimated.	No action required. n/a / 3	Moderate Good Good	Moderate 40+ **C+**

Tree Ref.	Species	Height (m)	Root Protection Area		
			Radius (m)	m²	Square (m)
T001	Crab Apple	10	3.6	41	6.4
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T003	Norway Maple	13	5.8	104	10.2
T004	Field Maple	5.5	2.5	20	4.4
T005	Norway Maple	11	3.4	35	6.0
T006	Norway Maple	15	4.2	55	7.4
T007	Norway Maple	15	3.5	38	6.2
G008	Field Maple	15	3.6	41	6.4
G009	Field Maple	16	4.2	55	7.4
G010	Field Maple	16	2.1	14	3.8
T011	Field Maple	6	1.8	10	3.2
T012	Sycamore	10	4.8	72	8.5
T013	Sycamore	8.5	4.2	55	7.4
T014	Sycamore	8.5	2.7	23	4.8

Drawing No: CCL 12357 / TCP Rev: 1

Title: Tree Constraints Plan (Existing Layout)

Site: Salamander Quay, UB9 6NZ

Scale: 1:300 Paper Size: A1

CROWN Tree Consultancy 08000 14 13 30

Tree Retention Categories
Stems & canopies shown

- Category A tree — Trees of high quality with an estimated life expectancy of 40+ years. Usually large trees with significant presence or smaller trees with excellent form. Retention of these trees is highly desirable.
- Category B tree — Trees of moderate quality with a life expectancy of 20+ years. Usually maturing trees, or younger trees with good form. Retention of these trees is desirable though less than Category A trees
- Category C tree — Unremarkable trees of low quality and merit. Individual specimens are not considered to be a material planning consideration.
- Category U tree — Trees unsuitable for retention due to their very poor condition.

Tree Constraints Plan

Status: Final

BS 5837 Root Protection Area (radius = 12xstem diameter)

Root Protection Area needing amendment due to site conditions, e.g. presence of exising road or building.

Root Protection Area having been amended to account for for site conditions

T1 = Tree No 1 G2 = Group No 2 H3 = Hedge No 3

1 Photo 1

MN = Measured North:

Canopy spreads are sometimes measured to an approximate N defined by site features. Often more accurate, especially where rows of trees are not aligned N-S or E-W.

Drawing No:	CCL 12357 / IAP	Rev: 1
Title:	Impact Assessment Plan	
Site:	Salamander Quay UB9 6NZ	
Scale:	1:300	Paper Size: A1

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Tree Consultancy
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Status: Final - for submission

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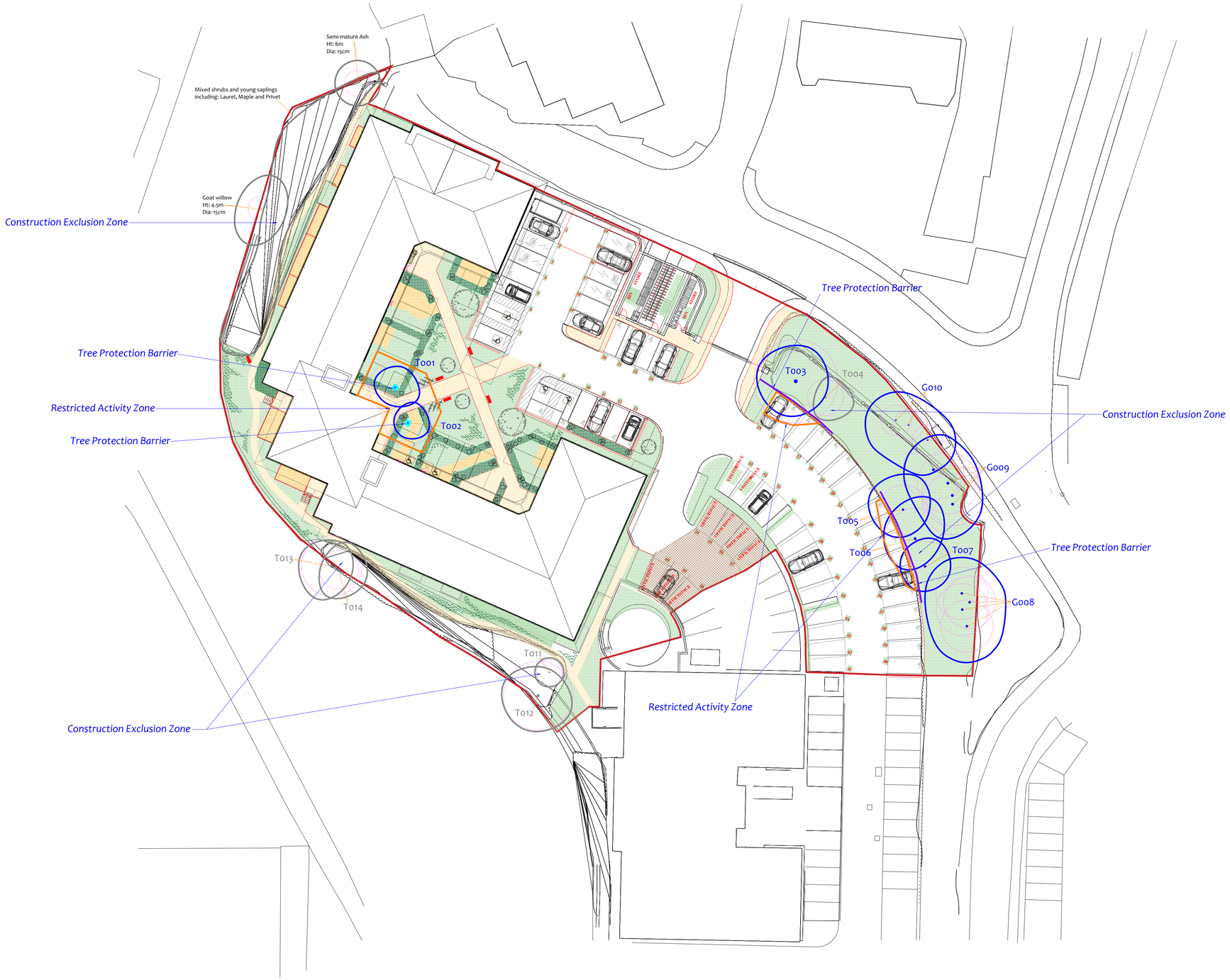


Tree Protection Plan

Tree Protection Barriers:

- Fixed protective barrier: The 'In-Ground System' or the 'Backstay System'. To remain in place for all construction activity
- Moveable protective barrier: The 'Backstay System'. To remain in place except when approved works are being undertaken in the Restricted Zone
- Ground Protection Measures Required
- Stem protected to a height of 2.5m with thick cloth & wire
- Tree Protection Boxing 1.2 x 1.2 x 2.4m high 25mm plywood
- Orange Barrier Mesh Fencing. Ht 1m, on steel fencing pins and wooden posts. To remain in place throughout all construction activity

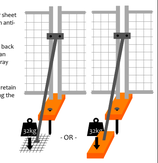
The 'Back Stay System'

2m X 3.5m weldmesh (or sheet metal) panels linked with anti-tamper couplings

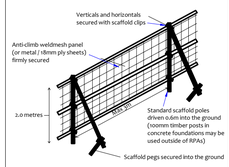
Each panel attached to a back stay which is founded in an additional foot or mesh tray as illustrated

Minimum 30kg ballast to retain rear foot or tray (including the weight of the foot/tray)

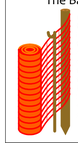
Alternate front feet to be secured with ground pins or additional ballast



The 'In-Ground' System

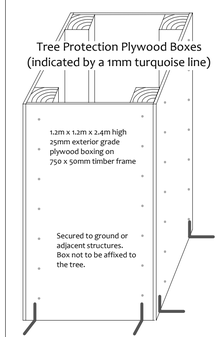


The Barrier Mesh System

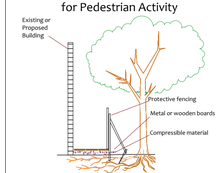


In this system, high visibility plastic safety fencing, 1m high, minimum grade 140g/m2, is secured onto alternate wooden posts and fencing pins. Wooden posts to be located at 5m intervals, minimum dimensions 75mm diameter or 75mm square, and driven into the ground with a fence-post-hammer so that they are not easily removed.
Fencing to be stapled to the posts at top and bottom. At midpoint between each wooden post shall be a 1.3 steel fencing pin, driven into the ground (or another wooden fencing post).

Tree Protection Plywood Boxes (indicated by a 11mm turquoise line)



Ground Protection suitable for Pedestrian Activity



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Drawing No:	CCL 12357 / TPP Rev: 1
Title:	Tree Protection Plan (Existing Layout with Proposals Overlaid)
Site:	Salamander Quay UB9 6NZ
Scale:	1:300
Paper Size:	A1

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