Peveril Securities Ltd

Napier Court, Reading

Arboricultural Assessment & Method Statement

June 2024

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1.0 INTRODUCTION

1.1 This report has been prepared by FPCR Environment and Design Limited on behalf of Peveril Securities Ltd to present the findings of an Arboricultural Assessment and survey of trees located at Napier Court, Reading (hereafter referred to as the site), OS Grid Ref SU 71998 73864

1.2 The survey was carried out on 21.04.2022.

Scope of Assessment

1.3 The tree survey and assessment of existing trees has been carried out in accordance with guidance contained within British Standard 5837:2012 *'Trees in Relation to Design, Demolition and Construction - Recommendations'* (hereafter referred to as BS5837). The guidelines set out a structured assessment methodology to assist in determining which trees would be deemed either as being suitable or unsuitable for retention.

1.4 The guidance also provides recommendations for considering the relationship between existing trees and how those trees may integrate into designs for development; demolition operations and future construction processes so that a harmonious and sustainable relationship between any retained trees and built structures can be achieved.

1.5 The purpose of the report is therefore to firstly, present the results of an assessment of the existing trees' arboricultural value, based on their current condition and quality and to secondly, provide an assessment of impact arising from the proposed development of the site.

1.6 This report has been produced to accompany a full planning application for:

Full planning application for demolition of the existing three office buildings, and construction of new 11 storey buildings, with amenity space at roof level (part indoor and set back), to provide 576 residential dwellings consisting of 1, 2 and 3-bedroom apartments. The development will include ancillary facilities for residents, such as a residents' lounge, gym and communal workspace. The buildings will be set in landscaping to the front and between the buildings together with roof terraces. Parking is proposed for 39 cars and 6 motorbikes. Three internal storage spaces are proposed at ground floor for 289 bicycles and an additional 20 cycle spaces are provided externally for visitors. The site is 1.26 ha in size and stretches east to west along Napier Road, bound by the railway line to the south, Napier Road and Kings Meadow to the north, Thames Quarter to the west and a Network Rail site to the east. The site is located within the administrative boundary of Reading Borough Council and is very well connected to the train station, bus services and town centre facilities.

1.7 The site is 1.26 ha in size and stretches east to west along Napier Road, bound by the railway line to the south, Napier Road and Kings Meadow to the north, Thames Quarter to the west and a Network Rail site to the east. The site is located within the administrative boundary of Reading Borough Council and is very well connected to the train station, bus services and town centre facilities. This report has included an assessment of any impact of the proposed development to the tree cover. The survey has therefore focused on any trees present within or bordering the site that may potentially be affected by the future proposals or will pose a constraint to any proposed development.

Site description

1.8 The site is located in central Reading, along Napier Road. It sits between the railway line to the south and Kings Meadow car park to the north. Currently, the site is a set of three separate office buildings with car parking around them. The tree stock on site was of moderate or low arboricultural value and was planted within the verges along the road and within the car parking area.

2.0 PLANNING POLICY

National Planning Policy Framework December 2023

2.1 National Planning Policy is defined by the National Planning Policy Framework (NPPF). This sets out the Government's most current and up to date planning policies for England and how these should be applied. The current NPPF is dated December 2023.

2.2 Paragraphs 10 and 11 of the NPPF state that there is a presumption in favour of sustainable development and states that for decision making, the LPA should be '*c) approving development proposals that accord with an up-to-date development plan without delay'.* In the absence of a development plan or the development plan is out of date, the acting LPA should grant planning consent so far as the development proposals do not breach the policies and guidance outlined in the NPPF.

2.3 In relation to arboriculture, the NPPF also states that:

- *136 'Trees make an important contribution to the character and quality of urban environments, and can also help mitigate and adapt to climate change. Planning policies and decisions should ensure that new streets are tree-lined (footnote 50), that opportunities are taken to incorporate trees elsewhere in developments (such as parks and community orchards), that appropriate measures are in place to secure the long-term maintenance of newly-planted trees, and that existing trees are retained wherever possible. Applicants and local planning authorities should work with highways officers and tree officers to ensure that the right trees are planted in the right places, and solutions are found that are compatible with highways standards and the needs of different users' (footnote 50: unless, in specific cases, there are clear, justifiable and compelling reasons why this would be inappropriate)*
- *186 (c) 'development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons (footnote 67) and a suitable compensation strategy exists';*

  and provides specific guidance that:

- *186 (d) 'development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate'.*

2.4 With reference to paragraph 186 (c), examples of what is deemed to be *'wholly exceptional'* are included within Footnote 67 and provides the examples of '*infrastructure projects (including nationally significant infrastructure projects, orders under the Transport and Works Act and hybrid bills), where the public benefit would clearly outweigh the loss or deterioration of habitat'.*

Statutory Considerations

2.5 Local authorities have a Duty under the Town and Country Planning Act to create Tree Preservation Orders (TPO) in order to protect and preserve specific trees and woodlands that bring significant amenity benefit to a particular site or location. Under a TPO it is a criminal offence to cut down, top, lop, uproot or wilfully destroy a tree protected by that Order, or to cause or permit such actions, if carried out without the prior written consent of the acting LPA. Anyone found guilty of such an offence is liable and in serious cases, may result in prosecution and incur an unlimited fine.

2.6 No direct consultation with the Local Planning Authority has taken place, however, it is understood having used the online search facility on the website for the Local Planning Authority, Reading Borough Council that there is a Tree Preservation Order, namely TPO 13/10, which applies to a number of trees present within the assessment site and therefore statutory constraints apply to the development in respect of trees. A plan detailing trees covered by the TPO has been included within the report as Appendix D and further details are given in Chapter 4.18.

2.7 Information provided on Tree Preservation Orders and Conservation Areas is accurate to the date of this assessment and cannot be assumed to remain unchanged. The last check was carried out on the 06.10.2023.

3.0 SURVEY METHODOLOGY

BS5837 Categories

3.1 Trees have been divided into one of four categories based on Table 1 of BS5837, *'Cascade chart for tree quality assessment'*. For a tree to qualify under any given category it should fall within the scope of that category's definition (see below).

3.2 Category U trees are those which would be lost in the short term for reasons connected with their physiology or structural condition. They are, for this reason not considered in the planning process on arboricultural grounds. Categories A, B and C are applied to trees that should be of material considerations in the development process. Each category also having one of three further sub-categories (i, ii, iii) which are intended to reflect arboricultural, landscape and cultural or conservation values accordingly.

3.3 **Category (U) – (Red):** Trees which are unsuitable for retention and are 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 within this category are:

- Trees that have a serious irremediable structural defect such that their early loss is expected due to collapse and includes trees 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.

- Trees that are infected with pathogens of significance to the health and/ or safety of other nearby trees or are very low-quality trees suppressing adjacent trees of better quality.
- Certain category U trees can have existing or potential conservation value which may make it desirable to preserve.

3.4 **Category (A) – (Green):** Trees that are considered for retention and are of high quality with an estimated remaining life expectancy of at least 40 years with potential to make a lasting contribution. Such trees may comprise:

- Sub category (i) trees that are particularly good examples of their species, especially if rare or unusual, or are essential components of groups such as formal or semi-formal arboricultural features for example the dominant and/or principal trees within an avenue.
- Sub category (ii) trees, groups or woodlands of particular visual importance as arboricultural and / or landscape features.
- Sub category (iii) trees, groups or woodlands of significant conservation, historical, commemorative or other value for example veteran or wood pasture.

3.5 **Category (B) – (Blue):** Trees that are considered for retention and are of moderate quality with an estimated remaining life expectancy of at least 20 years with potential to make a significant contribution. Such trees may comprise:

- Sub category (i) trees that might be included in category A but are downgraded because of impaired condition for example the presence of significant though remediable defects, including unsympathetic past management and storm damage.
- Sub category (ii) 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.
- Sub category (iii) trees with material conservation or other cultural value.

3.6 **Category (C) – (Grey):** Trees that are considered for retention and are of low quality with an estimated remaining life expectancy of at least 10 years or young trees with a stem diameter below 150mm. Such trees may comprise:

- Sub category (i) unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories.
- Sub category (ii) trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value or trees offering low or only temporary / transient screening benefits.
- Sub category (iii) trees with no material conservation or other cultural value.

Site Plans

3.7 The individual positions of trees and groups have been shown on the Tree Survey Plans. The positions of trees are based on a topographical / land survey, as far as possible, supplied by the client. Where topographical information has not identified the position of trees these have been plotted using a global positioning system and aerial photography to provide approximate locations. The crown spread, root protection area and shade pattern (where appropriate) are also indicated on these plans.

3.8 As part of this assessment, Tree Retention Plans have been prepared and appended to show the proposed layout in relation to the existing tree cover allowing an assessment of any potential conflicts. The plans also identifies which trees would be required to be removed or retained as part of the proposed development.

Tree Constraints and Root Protection Areas

3.9 Below ground constraints to future development are represented by tree roots and the soil environment in which they grow which needs to be protected if the tree is to be retained. Tree rooting systems are essential for the uptake of water and nutrients, serving the storage of carbohydrates for the future growth and function of the tree, and form structural anchorage and support for the stem and crown. The perceived rooting area of the tree; referred to as the root protection area (RPA) needs to be protected if the tree is to be retained.

3.10 The RPA is a notional area considered to be the minimum zone that must be protected to avoid any adverse impacts on retained trees. The RPA has been calculated in accordance with Annex C, D and Section 4.6 of BS5837:2012 and requires suitable protection in order for the tree to be successfully incorporated into any future scheme. As such, the RPA of existing trees is an important material consideration when considering site constraints and planning development activities.

3.11 Where applicable the shape of the Root Protection Area has been modified to consider the presence of any nearby obstacles (existing or past) which may have restricted root growth and the likely root distribution i.e., the presence of hard standing, structures and underground apparatus. Where groups of trees have been assessed, the Root Protection Area has been shown based on the maximum sized tree in any one group and so may exceed the Root Protection Area required for some of the individual specimens within the group. Further detailed inspection of the individual trees forming a group may be required where development impacts upon the group.

3.12 Whilst it is generally accepted that a tree's roots may extend far greater distances than the notional RPA, with the distribution of the root system relating directly to the availability of suitable conditions for growth (namely oxygen, water and nutrients), with roots predominantly located in the upper 1,000 mm of the soil horizon; the RPA offers an accepted protective buffer from development.

3.13 Above ground constraints such as the current crown spread of the trees and an illustration of the shade pattern (where appropriate) have been considered and identified within the Tree Survey Plans, Tree Retention Plans and Tree Protection Plans indicate the potential area of shading influence.

Considerations and Limitations of the Tree Survey

3.14 The survey was completed from ground level only and from within the boundary of the site. Aerial tree inspections or an assessment of the internal condition of the stem/s or branches were not undertaken at this stage as this level of survey is beyond the scope of the initial assessment.

3.15 The statements made in this report regarding the assessed trees does not take into account the effects of extreme / adverse weather conditions, changes in land use prior to the site's development, unforeseen accidents or anti-social behaviours, such as vandalism, which occur since the date of the survey. As such, the assessment of tree condition given within applies to the date of survey and cannot be assumed to remain unchanged.

3.16 It will be necessary to review all comments and observations made within this report, in accordance with sound arboricultural practice, within two years of the date of survey (unless explicitly stated elsewhere within this report). Further review may also be necessary where site conditions change or works to trees are carried out which have not been specified in detail within this report.

3.17 Hedgerows are identified as a Habitat of Principal Importance (HPI) as listed within Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. The tree survey conducted, in accordance with BS5837, does not assess hedgerows against the Hedgerow Regulations 1997 or specifically from an ecological perspective, and is outside the scope of this assessment.

3.18 It may be necessary during detailed design to undertake further assessment and accurate positioning of woody species within tree groups and hedgerows to assist structural calculations for foundation design of structures in accordance with current building regulations. The exact position of individual trees or species included as part of a tree group should be checked and verified on site prior to any decisions for foundation design, tree operations or construction activity being undertaken. Further survey work would be required for calculating foundation depths in accordance with NHBC Chapter 4.2 Building near Trees.

3.19 The survey of trees has been carried out in accordance with the criteria set out in Chapter 4 of BS5837. The survey has been undertaken by a suitably qualified and experienced arboriculturist and has recorded information relating to all those trees within the site and those adjacent to the site which may be of influence to any proposals. Trees were assessed for their arboricultural quality and benefits within the context of the proposed development in a transparent, understandable and systematic way.

3.20 Trees have been assessed as groups or hedgerows where it has been determined appropriate.

- The term group has been applied where trees form cohesive arboricultural features either aerodynamically, visually or culturally including biodiversity or habitat potential for example parkland or wood pasture.
- For the purposes of this assessment, a hedgerow is described as any boundary line of trees or shrubs less than 5m wide at the base and are managed under a regular pruning regime.

3.21 An assessment of individual trees within groups or hedgerows has been made where a clear need to differentiate between them, for example, in order to highlight significant variation between attributes including physiological or structural condition or where a potential conflict may arise.

Appendices

3.22 Where appropriate appendices have been produced to accompany specific methods of tree protection. These appendices have been produced in chronological order to accompany each stage of tree protection as it may be enacted.

3.23 These appendices have been provided in the form of separate Task Specific Method Statements. These and the accompanying Tree Protection Plans should be reproduced in their entirety in colour and copies should be kept on file in the site office for reference.

3.24 The relevant contractors should be provided any Task Specific Method Statements appended as part of this report, where relevant to their work.

3.25 The Site Manager will read this report. It will be the responsibility of the Site Manager to ensure its compliance throughout the construction processes.

3.26 All operations will be monitored by the Site Manager, and they will be responsible for ensuring that any sub-contractors do not carry out any process or operation which is likely to impact adversely upon any retained tree or hedge.

3.27 The contractor carrying out each task specific to their work shall be responsible for ensuring the report is adhered to at all times, The Site Manager is to ensure there is a monitoring regime for the maintenance of tree protection adopted on site.

3.28 The details provided within the appendices and in the body of this report have been set out according to the information available at the time of writing. The measures identified are therefore intended to describe the principles of tree protection and how they will be delivered, to form the basis for a future Arboricultural Method Statement based on the approved proposals which may need to be produced to satsify any conditions of the Planning Permision.

3.29 Any deviation from the methods prescribed as per this report will be discussed with the project Arboricultural Clerk of Works (ACoW) and subsequtly agreed with the Local Authority prior to commencing.

4.0 RESULTS

4.1 A total of seventeen individual trees, five groups of trees and two hedgerows were surveyed as part of the Arboricultural Assessment. Trees were surveyed as individual trees and groups of trees where examples are clearly present as per the description. Refer to the Tree Survey Plans and Appendix A – Tree Schedule for full details of the trees included in this assessment. The table below summarises the trees assessed.

Tree Schedule

4.2 Appendix A presents details of any individual trees, groups, hedgerows and woodlands found during the assessment including heights, diameters at 1.5m from ground level, crown spread (given as a radial measurement from the stem), age class, comments as to the overall condition at the time of inspection, BS5837 category of quality and suitability for retention and the root protection area.

4.3 General observations particularly of structural and physiological condition for example the presence of any decay and physical defect and preliminary management recommendations have also been recorded where appropriate.

4.4 Several of the trees have been discussed in more detail following the table, owing to their physical condition or arboricultural significance.

Results Summary

The tree stock on site is a mix of Category B and C, moderate to low quality and value trees. There are five category B Norway Maples (*Acer platanoides*) located in the west of the site that are protected by a tree preservation order (TPO). Table 1 below shows the trees based on the retention category.

Table 1: Summary of Trees by Retention Category

	Individual Trees	Total	Groups of Trees	Total
Category U - Unsuitable				
Category A (High Quality / Value)				
Category B (Moderate Quality / Value	T1, T2, T3, T4, T5, T6, T7, T8, T12, T14, T15, T17	12	G1, G3, G4	3
Category C (Low Quality / Value)	T9, T10, T11, T13, T16	5	G2, G5, H1, H2	4

Category B

4.5 There is a total of twelve individual and three tree groups that merit category B on site.

4.6 T1, T2, T3, T5 and T6 are all Norway Maples located in the west of the site and are the trees protected by the TPO. These trees have stem diameters between 280mm-510mm, they stand at around 10-12m tall and are largely in fair condition. These trees are located near to each other and have interlocking crowns, the crowns have been managed so they don't extend over the road and pavement so that there is 5m of height clearance. These trees merit category B due to their size, age and overall quality.

4.7 Tree T4 is located within the group of TPO'd trees but is not protected by the TPO. T4 is a beech (*Fagus sylvatica*) tree that is slightly limited in its growing area due to the surrounding trees and its location close to brick walls. This has led to an uneven crown developing and due to its location set further back away from the road this tree is not as prominent as the other TPO trees nearby.

4.8 Trees T7, T8, T12, T14, T15 and T17 are located within the verges around the car parking area or within the roadside verge to the north. These trees are a mix of alder (*Alnus glutinosa*), silver birch (*Betula pendula*), silver maple (*Acer saccharinum*) and rowan (*Sorbus aucuparia*). These trees stand at between 7-14m tall and have stem diameters within the range of 280-440mm. Overall these trees are of moderate arboricultural quality and value due to the limited defects present and potential life expectancy. Thought was given as to whether a classification of Category A should be applied some of these trees, particularly T14, but due to crown structure and pruning wounds, category B has been given.

4.9 Tree groups G1 and G3 are both groups of alder trees (*Alnus sp*.), they both stand at around 12m. The stem diameters average 400mm for tree group G1 and 240mm for G3. The tree group G1 is comprised of three trees located within a verge within the parking area of the site and historically the crowns had been topped at C.10m tall. G3's trees are located off site to the south of the boundary fence, they are located within the railway line verge. Their crowns overhang the site at 4m above the car parking and road beneath.

4.10 G4 is comprised of one beech, five Norway maples and one alder tree, these trees are located to the east of the site within the roadside verge. The trees are growing in a line with one Norway maple tree just off set into the car parking area. The four Norway maples that are located within the road verge all have dieback within the crown, thought was given to whether the trees should be classified as Category A due to their landscape value along the road but due to the wounds and sparse crowns category B is merited.

Category C

4.11 In total there are five individuals, two groups and two hedgerows that merit this category.

4.12 T9, T10, T11, T13, and T16 are all category C trees planted in the car parking area except for T16 that is located to the east of the site within the access road verge. They are a mix of rowan, Norway maple, and English oak (*Quercus robur*). Their stem diameters range from 100 to 200mm, and they are no taller than 8 m. All of these trees have many pruning wounds, primarily to lift their crowns 2m above the car parking area or pavements. Overall, these trees are of low arboricultural quality due to their size, potential life expectancy, and defects.

4.13 Tree group G2 is a group of alder trees located off site in the verge along the trainline to the south of the site. These trees have an average stem diameter of 150 mm and stand 8 m tall. Due to their location near the southern boundary fence, their stems are damaged by rubbing against the fence.

4.14 G5 is a group of ornamental shrubs and laurel along the road verge to the north of the site. All of these plants have limited arboricultural value, with most having stem diameters less than 75 mm.

4.15 Hedgerows H1 and H2 are both planted and managed hedgerows in the car parking area and to the north of the site along the road. These small hedgerows, 1-2 m tall and 1 m across, have limited arboricultural value, hence their category C rating.

Statutory Constraints

4.16 The following table details which trees are included in the Reading Borough Council Tree Preservation Order (TPO), TPO 13/10. The trees identified within the TPO are protected by law from felling or uprooting, pruning including 'topping/lopping' and wilful damage or destruction.

Table 2: Tree Preservation Order / Conservation Area details

Tree No. taken from FPCR	TPO reference no.	Conservation Area
T1, T2, T3	G2	
T5, T6	G1	

4.17 Prior to any tree surgery outside of the recommendations within this report of protected trees it will be necessary to apply to the relevant local planning authority to gain consent for the works. For more information regarding Conservation Areas and Tree Preservation Orders it is advised that contact is made with the Local Planning Authority's arboricultural officer, or other such relevant person.

5.0 ARBORICULTURAL IMPACT ASSESSMENT

5.1 The following paragraphs present a summary of the tree survey and discussion of particular trees and groups recorded in the context of any proposed development in the form of an Arboricultural Impact Assessment in accordance with section 5.4 of BS5837. Any final tree retentions will need to be reconciled with the advice contained within this report.

5.2 The AIA has been based upon the proposed development and seeks to outline the relationship between the proposals and the existing trees and hedgerows. The proposals comprise of an 11-storey residential redevelopment and associated parking. An overlay of the layout has been incorporated in the Tree Retention Plans to assist in identifying the relationship and any potential conflicts between the proposals and the existing trees and hedgerows.

Table 3: Summary of Impact on Tree Stock

	Trees to be Retained	Total	Trees to be Removed in full or part	Total
Category U - Unsuitable				
Category A (High Quality / Value)				
Category B (Moderate Quality / Value	T1, T2, T3, T5, T6, T7, G3	7	T4, T8, T12, T14, T15, T17, G1, G4	8
Category C (Low Quality / Value)	T16, G2	2	T9, T10, T11, T13, G5, H1, H2	7

5.3 The proposed development will retain all the TPO'd trees, as well as T7, T16, G2 and G3. A small section of H1 can also be retained under trees T5 and T6. Due to the redevelopment of all the office buildings and the full extent of the car parking area, hard standing structures are proposed where the rest of the trees currently exist, so their removal is necessary to facilitate the development.

5.4 The TPO'd trees T1, T2, T3, T5, and T6 have been incorporated into the design, therefore their retention is appropriate. There are proposed works within their root protection areas and these will need to be supervised by an arboricultural clerk of works. Tree-friendly path construction will be required for the installation of footpaths that pass through these RPAs. This is suitable as there is currently hard standing and stone gabions located in the RPAs, and the majority of the proposed footpaths will fall within the areas where these gabions and hard standing are already located. Therefore, the impact on roots in these areas should be lower than normal.

5.5 Facilitation pruning will be required on T1, T2, T3, T5 and T6 to allow sufficient room for construction purposes. These works will also aid in reducing any potential impacts from above ground works around the trees. Recommendations for pruning works have been provided within Appendix C1.

5.6 Trees T7, T16 and G3 are all located either offsite or are not affected by the new proposals, so their retention is possible. Suitable tree protection will be given to these retained trees to ensure they are not impacted during the construction phase of the development.

Tree Management

5.7 All retained trees should be subjected to sound arboricultural management as recommended within section 8.8.3 of BS5837 *Post Development Management of Existing Trees,* where there is a potential for public access in order to satisfy the landowner's duty of care. Additionally, inspections annually and following major storms should be carried out by an experienced arboriculturist or arborist to identify any potential public safety risks and to agree remedial works as required.

5.8 All tree works undertaken should comply with British Standard 3998:2010 and should therefore be carried out by skilled tree surgeons. It would be recommended that quotations for such work be obtained from Arboricultural Association Approved Contractors as this is the recognised authority for certification of tree work contractors.

5.9 All vegetation and, particularly, woody vegetation proposed for clearance should be removed outside of the bird-breeding season (March - September inclusive) as all birds are protected under the Wildlife and Countryside Act, 1981 (as amended) whilst on the nest. Where this is not possible, vegetation should be checked for the presence of nesting birds prior to removal by an experienced ecologist.

6.0 TREE PROTECTION MEASURES

6.1 The key stages where tree protection would be implemented along with the requirements for site supervision have been outlined in the following Table 4.

6.2 The timing of these stages may be subject to alteration in line with any future amendments of the construction program and as such, it is important to emphasise that the timeframe is designed to be flexible to accommodate these alterations whilst ensuring the protection of the trees on site.

Table 4: Timeline of Tree Protection

Timetable	Actions	Arboricultural Clerk of Works (ACoW) requirements	Task Specific Method Statement / Appendix reference
Pre-commencement site meeting	Pre-commencement site meeting prior to the start of construction works on site. Timeline of construction processes to be shared with ACoW and changes made to the AMS as required. Any changes to be agreed with the LPA.	Site meeting / Tool box talk by ACoW to ensure that the AMS has been read by the relevant person, including the Site Manager and Tree Surgeon. Site Manager to provide working Gantt Chart or Timetable of construction processes and to ensure that Tree Protection measures have been included. ACoW to make Site Manager and relevant contractors familiar with tree safe working practices ACoW to check that copies of Task Specific Arboricultural Method Statements are present, and that Tree Protection Induction Record has been completed by required personnel.	Tree Protection Plans (10859-T-07 to 09) AMS Appendices C1 - 5
Pre-commencement site meeting	Mark up trees to be felled and specify trees requiring facilitation pruning (where relevant).	ACoW to check that copies of Induction pack and Task Specific Arboricultural Method Statements are present. Trees to be marked up in, accordance with the approved Tree Retention Plan, using fluorescent marker spray for ease of identification. Tree Surgeon to be present where possible.	Tree Protection Plans (10859-T-07 to 09) AMS Appendix C1

Timetable	Actions	Arboricultural Clerk of Works (ACoW) requirements	Task Specific Method Statement / Appendix reference
Immediately following tree removals	Tree Protection Fencing positions to be marked out and pegged (where applicable) by the Arboricultural Consultant to ensure that all fencing is erected in the correct positions.	ACoW to assist with measuring out distances from trees in accordance with the Tree Protection Plans. ACoW to check that all Tree Protective Fencing has been erected and is of the required type and specification (as per Appendix C2. Any contingencies or action points required shall be outlined. Record of visit to be completed by ACoW and a copy is to be handed to Site Manager and LPA.	Tree Protection Plans (10859-T-07 to 09) AMS Appendix C2
Commence construction			
To be determined	Supervised hardstanding uplift within the RPA of T1, T2, T3, T5 and T6.	ACoW to be present where necessary in accordance with Appendix C4 when removing the existing hardstanding. Photos of evidence to be taken for auditing purposes and will be submitted to the LPA.	Tree Protection Plans (10859-T-07 to 09) AMS Appendix C4
To be determined	Supervised excavation within the RPA of T1, T2, T3, T5 and T6.	ACoW to be present where necessary to advise on excavation method. Document stages excavation. Photos of evidence to be taken for auditing purposes and will be submitted to the LPA.	Tree Protection Plans (10859-T-07 to 09) AMS Appendix C3
To be determined	Supervised installation of no-dig footpaths within RPA of tree T7	ACoW to be present to supervise works in accordance with Appendices C6 Record of visit to be completed by ACoW and a copy is to be handed to Site Manager and LPA.	Tree Protection Plans (10859-T- 07 to 09) AMS Appendix C6 Appendix F Appendix G

Timetable	Actions	Arboricultural Clerk of Works (ACoW) requirements	Task Specific Method Statement / Appendix reference
To be determined **(frequency of no less than 10 working days between visits)**	Periodic compliance inspections accompanied by robust auditing of visits by client. Tree Protective Fencing position and suitability checked by ACoW. Compliance with AMS checked and recorded.	Record of visit to be completed by ACoW and a copy is to be handed to Site Manager and LPA upon request.	Appendix C2 Tablet based Auditing App (Arboricultural Clerk of Works use only) Tree Protection Plans (10859-T-07 to 09)
Post Construction			
To be determined	Removal of Tree Protective Fencing	ACoW to check if all Tree Protective Fencing has been removed and in doing so no damage has occurred to retained trees and hedgerows.	

Arboricultural Supervision

Appointment of Arboricultural Clerk of Works (ACoW)

6.3 The Site Manager will be responsible for contacting the appointed ACoW in advance of any operations detailed in this Method Statement and in any instance where full compliance cannot be guaranteed i.e. where construction works within areas fenced off to protect trees may be required.

6.4 Retained trees will be adequately protected during works ensuring that the calculated root protection area for all retained trees can be appropriately protected through the erection of the requisite tree protection barriers. Measures to protect trees should follow the guidance in BS5837 and will be applied where necessary for the purpose of protecting trees within the site whilst allowing sufficient access for the implementation of the proposed layout. These have been broadly summarised below.

Site Visits and Monitoring

6.5 An initial site meeting prior to starting any construction works, implementing tree surgery and erection of tree protection fencing, shall be a requirement of this AIA. At the meeting the Site Manager and Arboricultural Consultant will discuss the methodology and various tree protection measures to be implemented subject to approval by the LPA.

6.6 A toolbox talk will also be given to the Site Manager and any on site operatives on the day of the meeting. The purpose of this toolbox talk will be to inform the Site Manager and Operatives of how to protect all retained trees. The toolbox talk shall then be repeated by the Site Manager when new external trades / Contractors commence work on site.

6.7 An inspection of protective barriers will be made by an Arboricultural Consultant once they have been erected. The inspection will seek to confirm that all barriers have been installed to the correct specification as per Appendix C and that all barriers have been positioned correctly, as per Tree Protection Plans. Evidence will be provided to the LPA and the Site Manager. Following this initial visit, the client/Site Manager will be responsible for conducting monitoring of the tree protection fencing – frequency of no less than ten working days between visits.

6.8 The toolbox talk shall focus on informing Contractors on the following topics:

- The protection of trees is a requirement of planning approval and failure to comply could result in stop notices being applied or fines;
- How trees can be harmed on development sites;
- How the trees on this site will be protected by tree protection fencing and ground protection;
- Discussion on particular methods of working near the trees as outlined in this Method Statement;
- How to report an issue before it becomes a problem;

6.9 Evidence of the toolbox being carried out shall be collected through completing Appendix E - *'What you need to know about working near trees'* factsheet which will be issued to the Site Manager and should form part of any future site inductions for contractors.

6.10 All contractors shall be required to complete the Tree Protection Induction and Compliance Form which is to be accessed via a link and/or QR Code at the bottom of the *'What you need to know about working near trees'* factsheet using a Smartphone, Tablet or computer. This online form can be viewed at any time by the Arboricultural Consultant and shared with both the client and the LPA upon request. A periodic review of its use shall be conducted to ensure continued compliance.

6.11 The Arboricultural Consultant will periodically verify compliance with this AMS and sign-off elements of the work as various stages of the development commence. This shall be recorded using an online form which the Arboricultural Consultant will share with the client and LPA.

6.12 The project Arboricultural Consultant will be responsible for specifying any tree work requirements and shall assist in, where required, the appointment of a suitably qualified Arboricultural Contractor to undertake the removal and pruning of trees. Any recommended pruning works will be specified in agreement with the LPA.

Key Appointment, Supervision and Monitoring Stages of the Project Arboricultural Consultant

6.13 The following stages of supervision set out the intended timeline of tree protection site monitoring and compliance. The exact schedule of works is unknown at the time of writing. The following key stages therefore identify where input from the Arboricultural Consultant will be required. Exact dates and timings to be fixed in accordance with construction schedule.

6.14 The following stages of supervision shall be required:

- Pre-commencement site meeting and Tool box talk to be carried out.
- Marking trees to be removed and to be pruned with the appointed tree contractor where relevant **(pre-commencement meeting)**
- Walking the site with the Site Manager / Fencing Contractor to measure out the locations of the fencing **(pre-commencement meeting)**
- Arboricultural Consultant to visit site and confirm protecting fencing has been set out as specified. **(to follow pre-commencement meeting)**
- Project Arboricultural Consultant to be present to supervise areas of existing hardstanding uplift **(to follow pre-commencement meeting)**
- Project Arboricultural Consultant to be present to supervise areas of excavation **(to follow pre-commencement meeting)**
- Project Arboricultural Consultant to be present to supervise installation of no-dig footpaths **(to follow pre-commencement meeting)**
- Full auditing of these visits / supervision requirements to be carried out **(ongoing)**
- Ongoing visits are required to inspect the tree protection fencing and compliance with the AIA. Any other arboricultural matters arising which are unforeseen will need to be discussed with the Arboricultural Consultant during these visits to decide the most appropriate course of action. Any and all proposed changes are to be in agreement with the LPA.
- After each site visit a short report/record will be compiled which will be sent to the client and local authority as a record of evidence.

Protection outside the exclusion zone

6.15 Once the areas around trees have been protected by the barriers, any works on the remaining site area may be commenced providing activities do not impinge on protected areas.

6.16 All weather notices should be attached to the protective fencing to indicate that construction activities are not permitted within the fenced area. The area within the protective barriers will then remain a construction exclusion zone throughout the duration of the construction phase of the proposed development. Protection fencing signs can be provided upon request.

6.17 Wide or tall loads etc should not come into contact with retained trees. Banksman should supervise transit of vehicles where they are in close proximity to retained trees.

6.18 Oil, bitumen, cement or other material that is potentially injurious to trees should not be stacked or discharged within 10m of a tree stem. No concrete should be mixed within 10m of a tree. Allowance should be made for the slope of ground to prevent materials running towards the tree.

6.19 Fires on sites should be avoided if possible. Where they are unavoidable, they should not be lit in a position where heat could affect foliage or branches. The potential size of a fire and the wind direction should be taken into account when determining its location, and it should be attended at all times until safe enough to leave.

6.20 Notice boards, telephone cables or other services should not be attached to any part of a retained tree.

6.21 Any trees which need to be felled adjacent to or are present within a continuous canopy of retained trees, must be removed with due care (it may be necessary to remove such trees in sections).

Protection of Trees Close to the Site

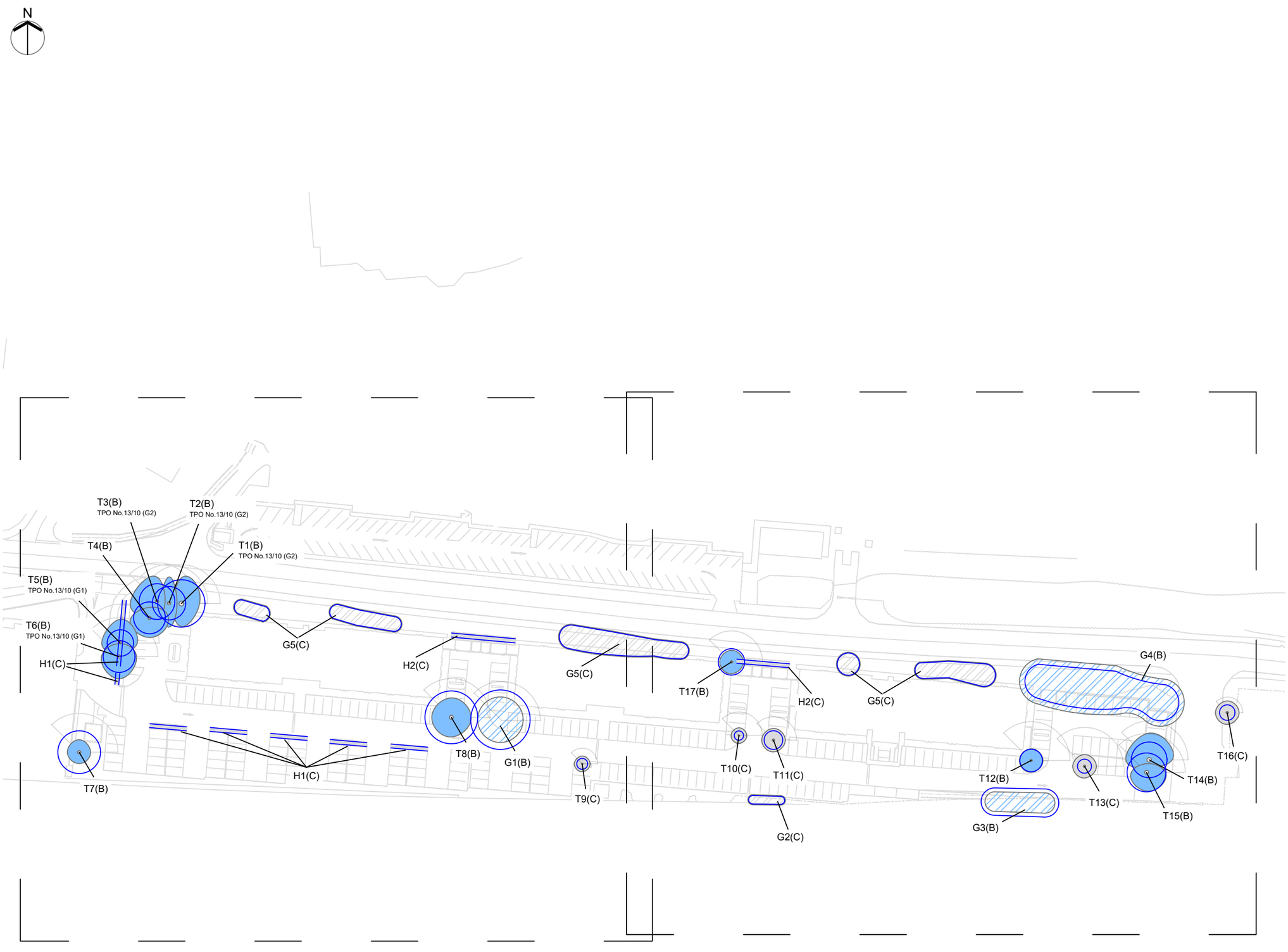
6.22 A number of trees were located on the boundaries of the site and therefore the root protection area and crown spread of these trees will need to be protected in the same way as all the retained trees within the site. All trees located outside the boundaries of the assessment site yet within close proximity to works should be adequately protected during the course of the development by barriers or ground protection around the calculated root protection area.

6.23 Any trees which are to be retained and whose Root Protection Areas may be affected by the development should be monitored, during and after construction, to identify any alterations in quality with time and to assess and undertake any remedial works required as a result.

7.0 CONCLUSION

7.1 The site is located in central Reading, along Napier Road. It sits between the railway line to the south and Kings Meadow car park to the north. Currently, the site is a set of three separate office buildings with car parking around them. The tree stock on site is a mix of Category B and C, moderate to low quality and value trees. There are five category B Norway Maples (*Acer platanoides*) located in the west of the site that are protected by a tree preservation order (TPO).

7.2 The proposed development will retain all the TPO'd trees, as well as T7, T16, G2 and G3. A small section of H1 can also be retained under trees T5 and T6. Due to the redevelopment of all the office buildings and the full extent of the car parking area, hard standing structures are proposed where the rest of the trees currently exist, so their removal is necessary to facilitate the development. While the development will necessitate the removal of a large number of trees, the landscape proposals demonstrate that a significant number of trees will be replanted.



For details see: 10859-T-02

For details see: 10859-T-03

KEY

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Scale 1:1000 @ A3

0 25 50m

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-	26.04.2022	First Issue	TEP
A	03.05.2022	Updated Site Boundary	TEP
B	10.05.2022	TPO Information Added	TEP
C	22.01.2024	Client Comments	TEP

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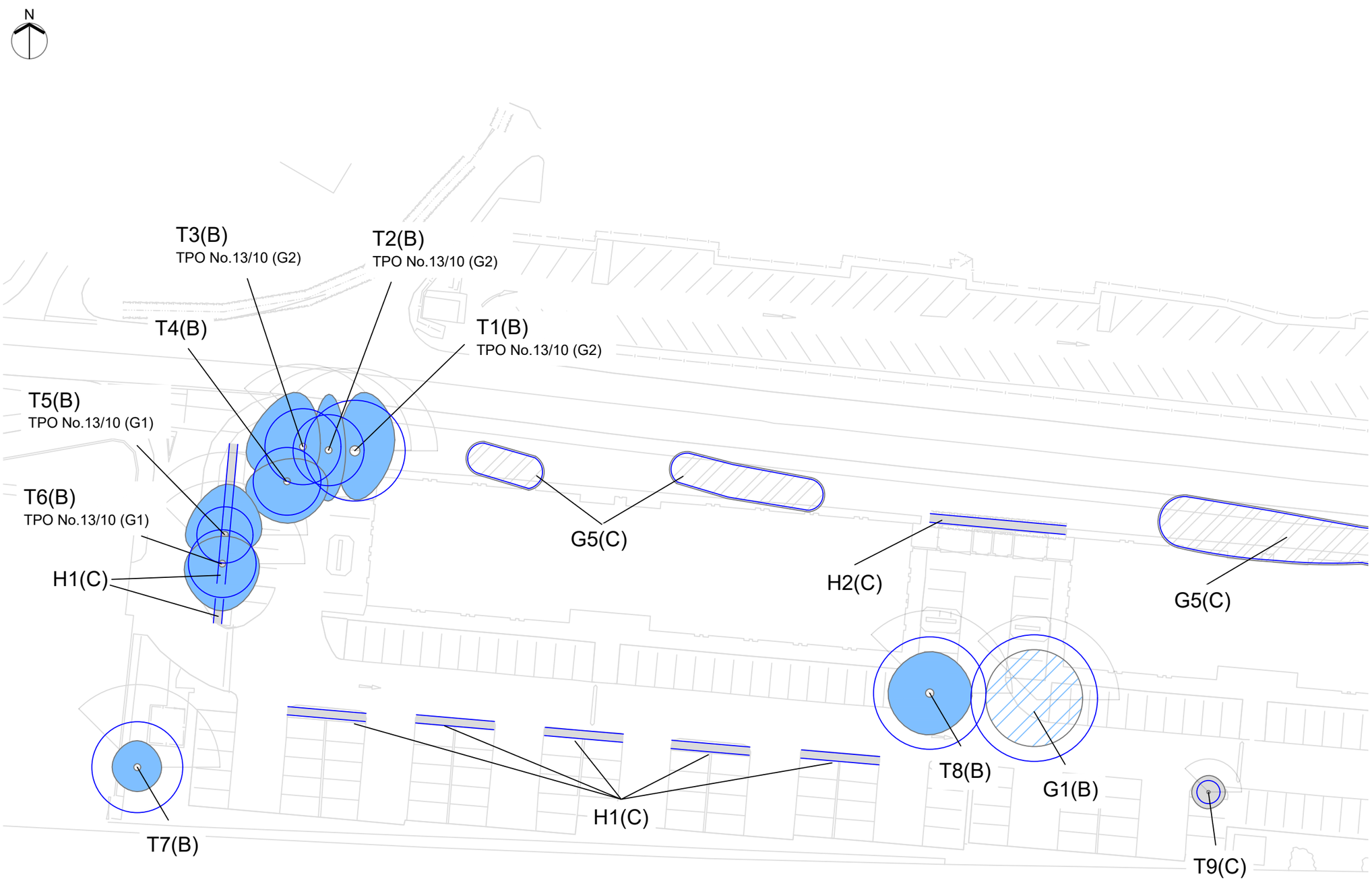
drawing title
TREE SURVEY PLAN

scale	drawn/checked	date
1:1000 @ A3	TEP/TCB	26.04.2022

drawing number **10859-T-01** rev **C**

CAD file: L:\10800\10859\ARB\Plans\10859-T-01-03 Tree Survey Plan Rev C.dwg



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Scale 1:500 @ A3

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-	26.04.2022	First Issue	TEP
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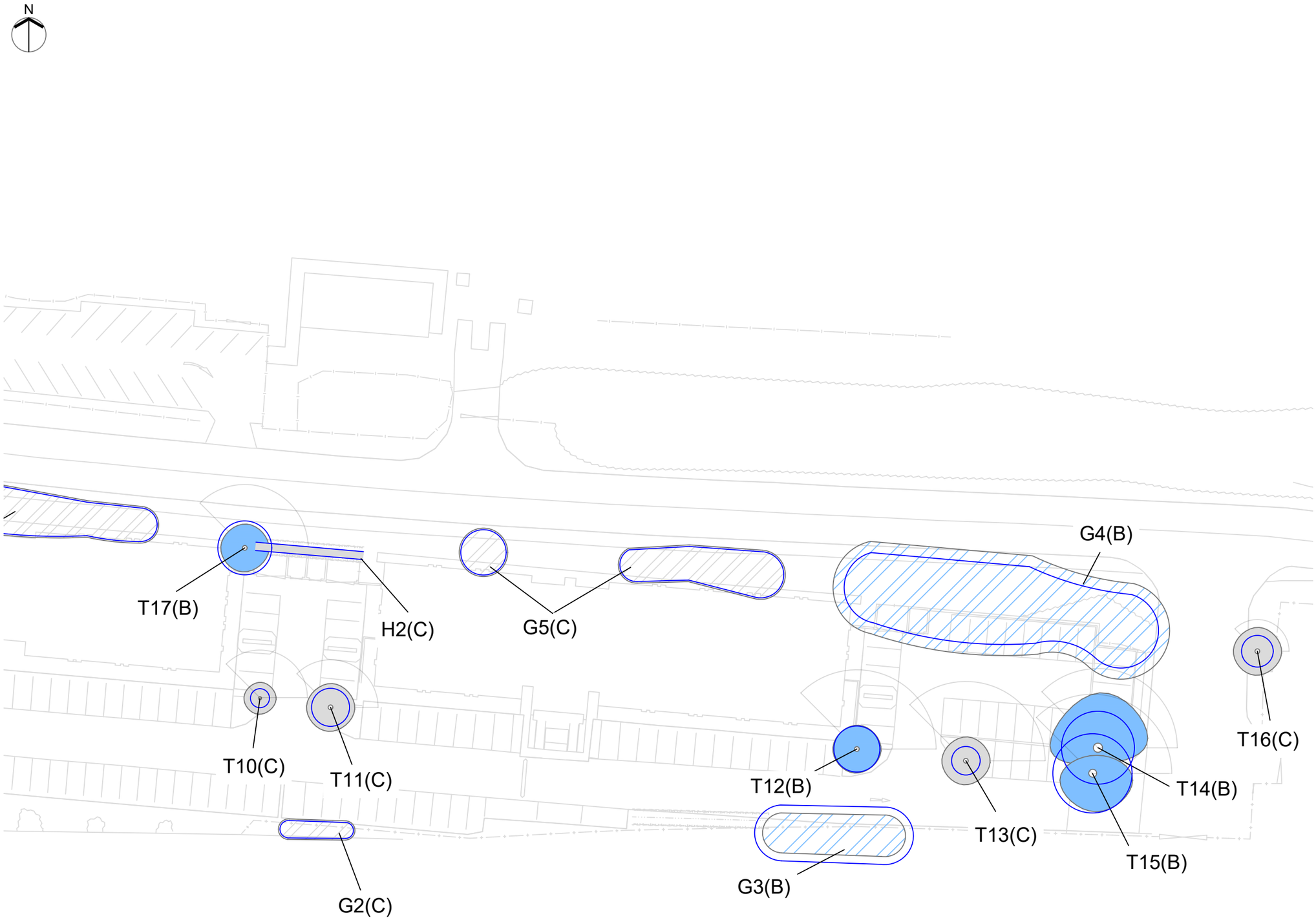
drawing title
TREE SURVEY PLAN

scale	drawn/checked	date
1:500 @ A3	TEP/TCB	26.04.2022

drawing number **10859-T-02** rev **C**

CAD file: L:\10800\10859\ARB\Plans\10859-T-01-03 Tree Survey Plan Rev C.dwg



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0 10 20 30m

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drawing number **10859-T-03** rev **C**

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KEY

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-	04.10.23	First Issue	TEP
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C	28.03.24	Layout Update	TEP
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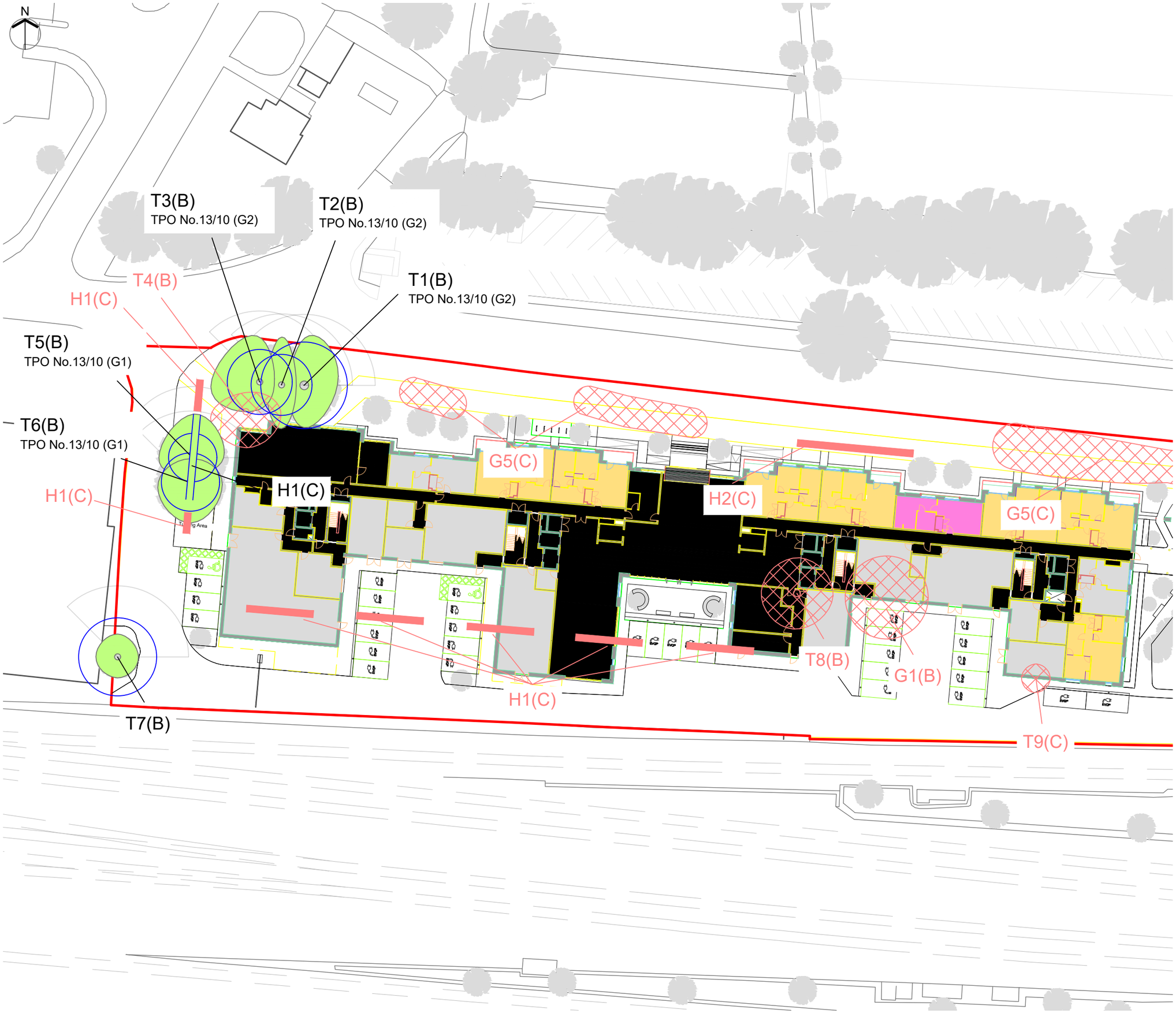
drawing title
TREE RETENTION PLAN

scale	drawn/checked	date
1:1000 @ A3	TEP/TCB	June 2024

drawing number **10859-T-04** rev **D**

CAD file: L:\10800\10859\ARB\Plans\10859-T-04-06 Tree Retention Plan Rev D.dwg



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0 10 20 30m

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B	21.03.24	Layout Update	TEP
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D	13.06.24	Layout Update	TCB

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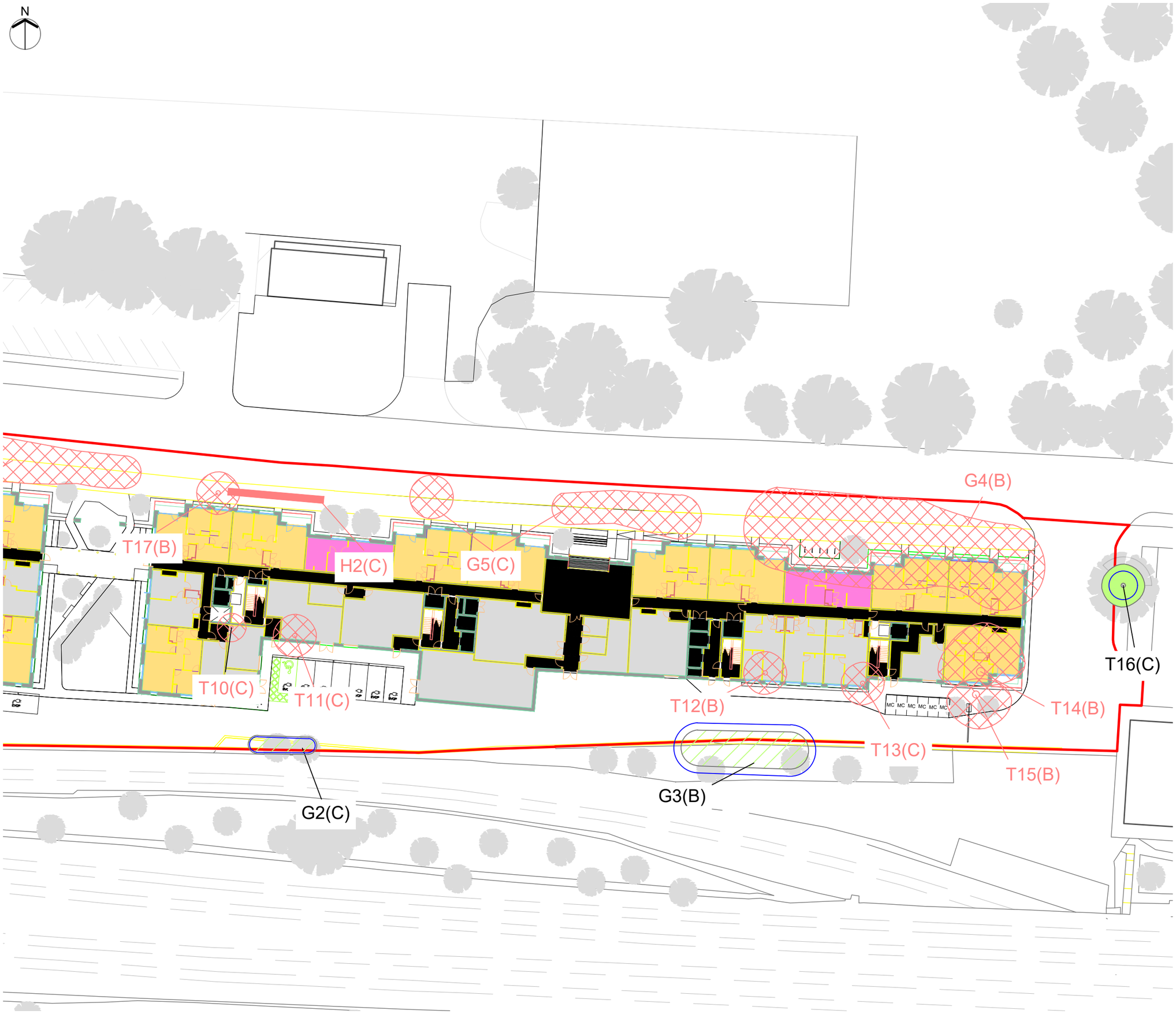
drawing title
TREE RETENTION PLAN

scale	drawn/checked	date
1:500 @ A3	TEP/TCB	June 2024

drawing number **10859-T-05** rev **D**

CAD file: L:\10800\10859\ARB\Plans\10859-T-04-06 Tree Retention Plan Rev D.dwg



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client
Peveril Securities Ltd

project
Napier Court
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drawing title
TREE RETENTION PLAN

scale	drawn/checked	date
1:500 @ A3	TEP/TCB	June 2024

drawing number **10859-T-06** rev **D**

CAD file: L:\10800\10859\ARB\Plans\10859-T-04-06 Tree Retention Plan Rev D.dwg

KEY

- Tree/Group to be Retained
- Hedgerow Proposed to be Retained and Incorporated into the New Development
- 6.0m — Line of Protective Barriers (and distance from tree or retained structure)
- Area of arboricultural supervision of uplift and excavation
- Root Protection Area (The RPA has been altered where appropriate to reflect underground constraints)
- T1 (A) G1 (A) — Individual / Group Number and BS5837:2012 Category Tree Preservation Order Information
- Indicative Shade Pattern (in accordance with BS5837:2012 where appropriate)
- Area of Permanent No-Dig Highway, Footpath or Driveway Porous Construction

Scale 1:1000 @ A3

0 25 50m

NOTES

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scale	drawn/checked	date
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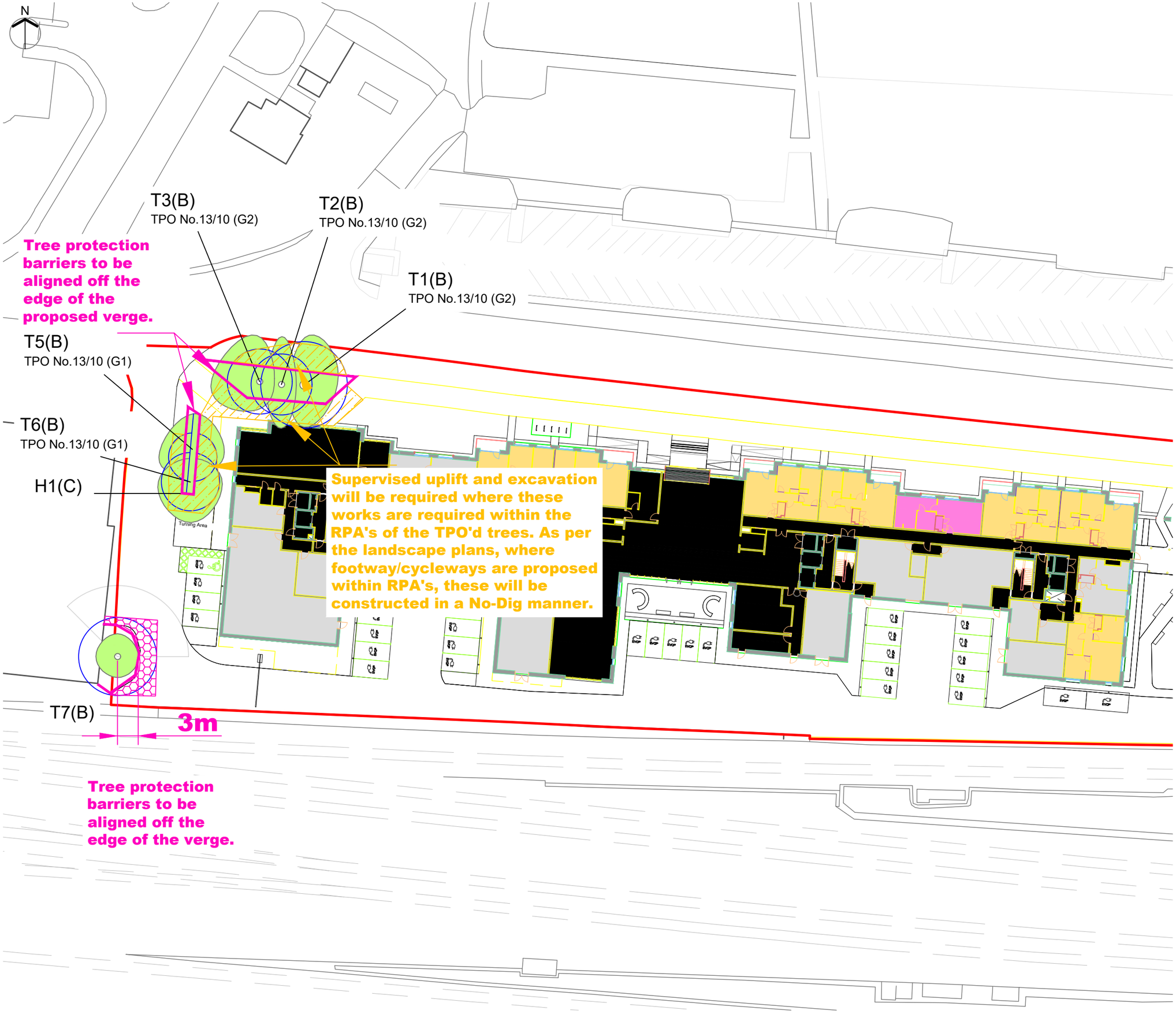
drawing number **10859-T-07** rev **D**

CAD file: L:\10800\10859\ARB\Plans\10859-T-07-09 Tree Protection Plan Rev D.dwg



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Scale 1:500 @ A3

0 10 20 30m

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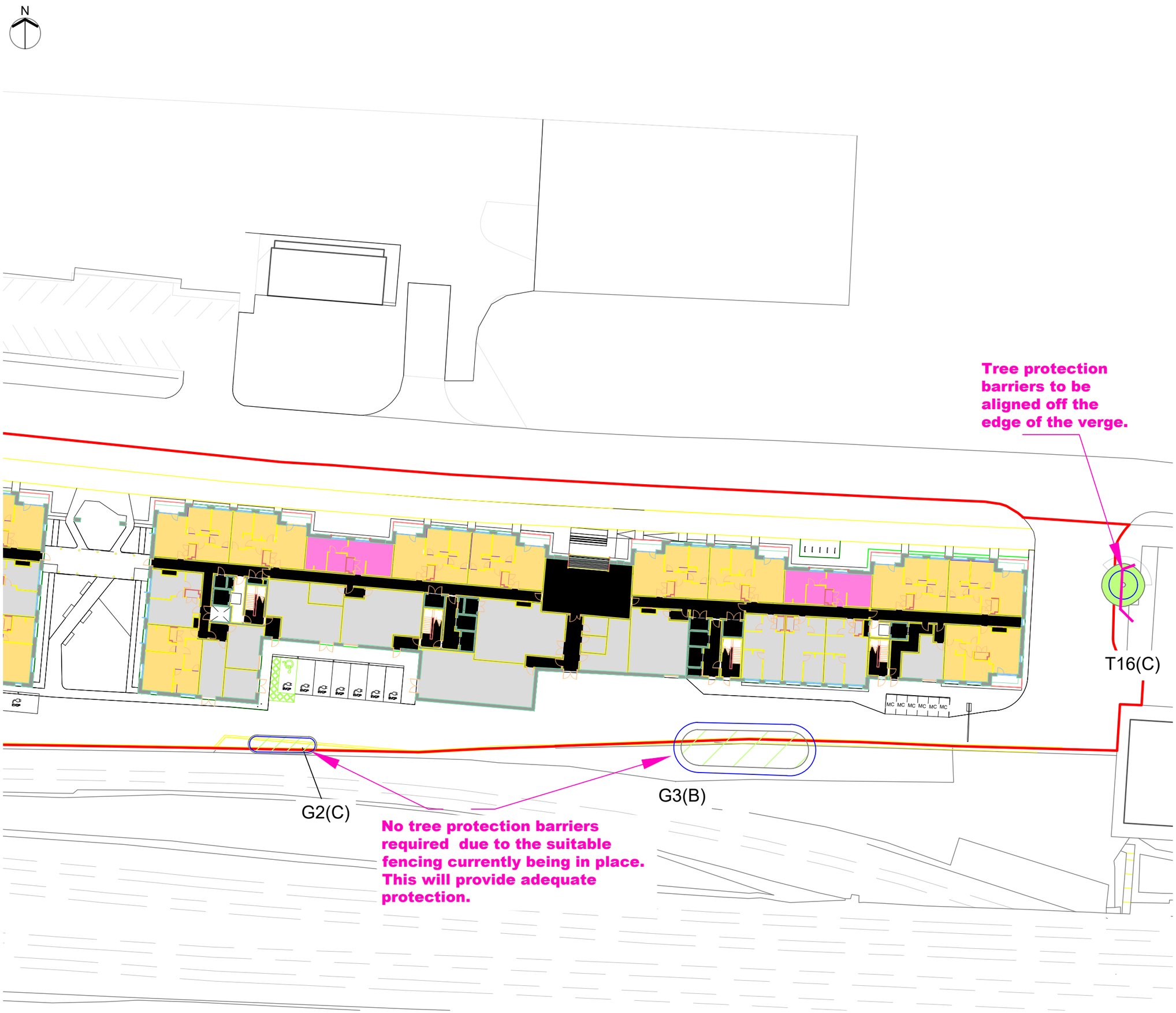
TREE PROTECTION PLAN

scale	drawn/checked	date
1:500 @ A3	TEP/TCB	June 2024

drawing number **10859-T-08** rev **D**

CAD file: L:\10800\10859\ARB\Plans\10859-T-07-09 Tree Protection Plan Rev D.dwg



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Scale 1:500 @ A3

0 10 20 30m

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drawing title
TREE PROTECTION PLAN

scale	drawn/checked	date
1:500 @ A3	TEP/TCB	June 2024

drawing number **10859-T-09** rev **D**

CAD file: L:\10800\10859\ARB\Plans\10859-T-07-09 Tree Protection Plan Rev D.dwg

Appendix A - Tree Schedule

Measurements	Age Classes	Quality Assessment of BS Category	ULE (relates to BS Category)
Height - Measured using a digital laser clinometer (m)	**YNG**: Establishing, typically with good vigour and fast growth rates and strong apical dominance; c. less than 1/3 life expectancy	**Category U -** Trees 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.	<10 years
Stem Dia. - Diameter measured (mm) in accordance with Annex C of the BS5837	**SM:** Semi-mature trees less than 1/3 life expectancy	**Category A -** Trees of high quality with an estimated remaining life expectancy of at least 40 years.	40+ years
Crown Radius - Measured using a digital laser clinometer radially from the main stem (m)	**EM:** Established, typically vigorous and increasing in apical height and lateral spread; 1/3 - 2/3 life expectancy. Offers landscape significance	**Category B -** Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.	20-40 years
Abbreviations est - Estimated stem diameter avg - Average stem diameter for multiple stems upto - Maximum stem diameter of a group	**M:** Fully established over 2/3 life expectancy, generally good vigour and achieving full height potential with crown still spreading	**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 150mm.	10-20 years
	OM: Fully mature, at the extremes of expected life expectancy, vigour decreasing, declining or moribund	Sub-categories: (i) - Mainly arboricultural value (ii) - Mainly landscape value (iii) - Mainly cultural or conservation value	
	V: biological, cultural or aesthetic value comprising niche saproxylic habitat. Individuals of large proportions (stem girth) in comparison to trees of the same species/surviving beyond the typical age range for their species.	**The BS category particular consideration has been given to the following:** • The presence of any structural defects in each tree/group and its future life expectancy • The size and form of each tree/group and its suitability within the context of a proposed development • The location of each tree relative to existing site features e.g. its screening value or landscape features • Age class and life expectancy	

Structural Condition	Physiological Condition
Good - No significant structural defects	**Good -** No significant health problems
Fair - Structural defects that can be remediated	**Fair -** Symptoms of ill-health that can be remediated
Poor - Significant defects beyond remediation, present a risk of failure in the foreseeable future	**Poor -** Significant ill-health. Unlikely the tree will recover in the long term
Dead - Dead tree with structural integrity of tree severely compromised	**Advanced Decline / Dead -** Advanced state of decline and unlikely to recover or Dead

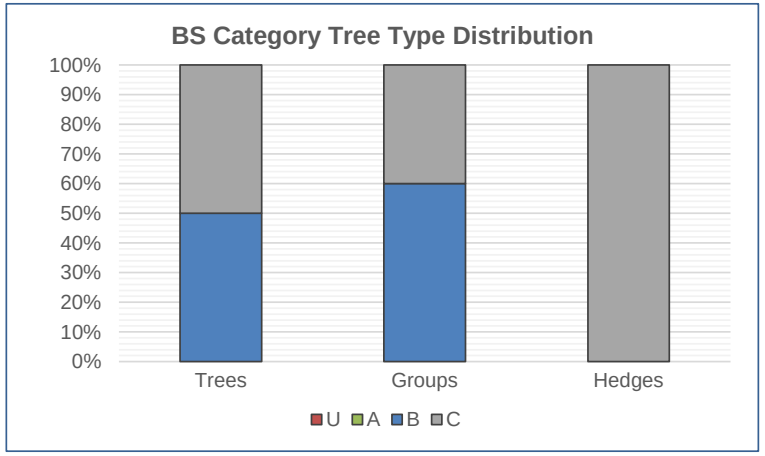
Root Protection Area (RPA)
• The RPA Radius column provides the extent of an equivalent circle from the centre of the stem (m). • The RPA is calculated using the formulae described in paragraph 4.6.1 of British Standard 5837: 2012 and is indicative of the rooting area required for a tree to be successfully retained. Tree roots extend beyond the calculated RPA in many cases and where possible a greater distance should be protected. • Where veteran trees have been identified the RPA has been calculated in accordance with Natural England guidance i.e. 15x the stem diameter, uncapped.

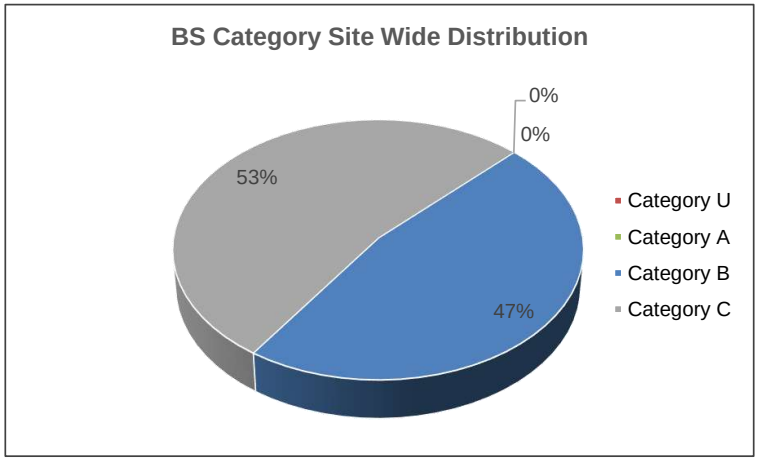
Appendix Summary

	Individual Trees	Totals	Tree Groups and Hedgerows	Totals
Category U		0		0
Category A		0		0
Category B	T1, T2, T3, T4, T5, T6, T7, T8, T12, T14, T15, T17	12	G1, G3, G4	3
Category C	T9, T10, T11, T13, T16	5	G2, G5, H1, H2	4
	Total	17	Total	7

BS Category Tree Type Distribution displays the proportion of trees assessed in each type to enable a better understanding of the category distribution.

BS Category Site Wide Distribution shows the proportion of trees assessed in each category across the whole site which allows an interpretation of the site's overall quality.





Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
INDIVIDUAL TREES										
T1	Norway Maple Acer platanoides	12	upto 510	N - 7 S - 6 E - 4 W - 2	M	F	Interlocking crowns Minor dead wood evident in the crown (<75mm) Pruning wounds noted Crown overhangs foot path and road at a height of 5m. Eastern aspect of the tree has been sided up to stop branches rubbing the building. Growing in a line on three trees Mower damage to some roots TPO Number 13/10 (G2)	118	6.1	B (i)
T2	Norway Maple Acer platanoides	12	upto 360	N - 6 S - 4 E - 2 W - 2	EM	F	Interlocking crowns Minor dead wood evident in the crown (<75mm) Pruning wounds noted Crown overhangs foot path and road at a height of 5m. Middle tree within group so crown is interlocking Growing in a line on three trees TPO Number 13/10 (G2)	59	4.3	B (ii)
T3	Norway Maple Acer platanoides	12	upto 380	N - 7 S - 4 E - 2 W - 7	M	F	Interlocking crowns Minor dead wood evident in the crown (<75mm) Pruning wounds noted Crown overhangs foot path and road at a height of 5m. Growing in a line on three trees Mower damage to the roots TPO Number 13/10 (G2)	65	4.6	B (i)
T4	Beech Fagus sylvatica	10	upto 340	N - 2 S - 5 E - 5 W - 5	EM	F	Interlocking crowns Minor dead wood evident in the crown (<75mm) Pruning wounds noted Set back from the line of trees by 4m No major defects Not as prominent as neighbouring trees.	52	4.1	B (ii)
T5	Norway Maple Acer platanoides	10	upto 280	N - 7 S - 2 E - 4 W - 4	EM	F	Interlocking crowns Minor dead wood evident in the crown (<75mm) Pruning wounds noted Crown overhangs foot path at a height of 5m. Growing in a line of two trees Growing within verge TPO Number 13/10 (G1)	35	3.4	B (i)

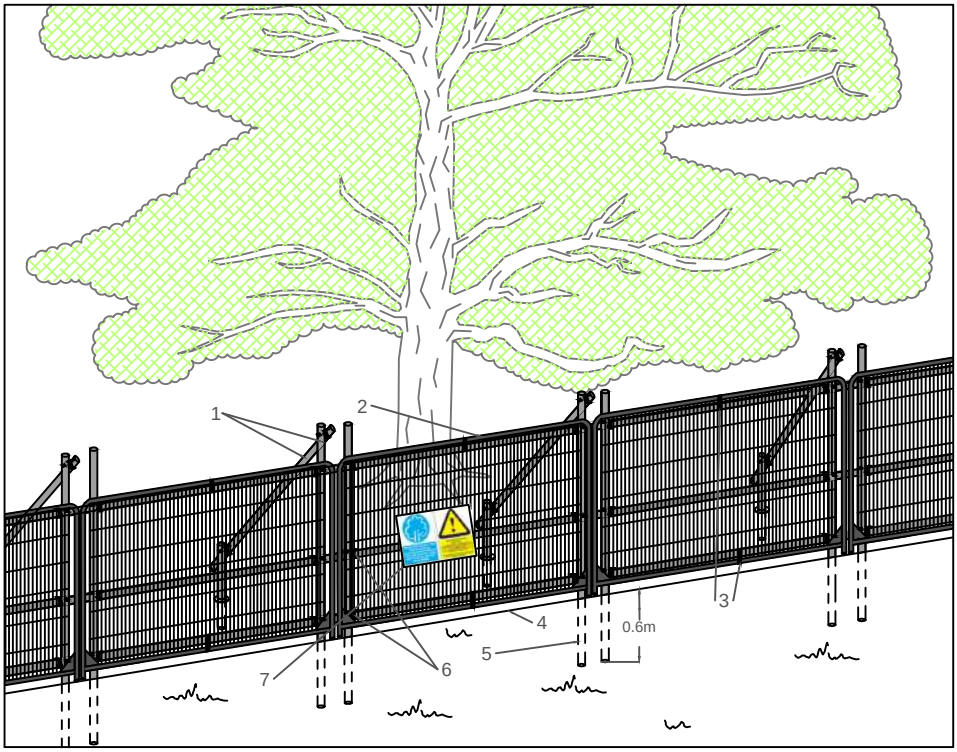
Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T6	Norway Maple Acer platanoides	10	upto 340	N - 3 S - 6 E - 4 W - 4	EM	F	Interlocking crowns Minor dead wood evident in the crown (<75mm) Pruning wounds noted Crown overhangs foot path at a height of 5m. Growing in a line of two trees Growing within verge TPO Number 13/10 (G1)	52	4.1	B (ii)
T7	Alder Alnus glutinosa	10	upto 460	3	M	F	Minor dead wood evident in the crown (<75mm) Pruning wounds noted Stem leans to East by 5 degrees Crown has been sided up along western edge to stop rubbing against the building	96	5.5	B (i)
T8	Alder Alnus glutinosa	14	upto 360 440	5	M	G	Epicormic growth evident within the crown Minor dead wood evident in the crown (<75mm) Multi leadered form Pruning wounds noted Multileadered from 1m Thought given to category A but given B due to life expectancy. Located within verge.	146	6.8	B (i)
T9	Norway Maple Acer platanoides	5	upto 120	2	SM	F	Pruning wounds noted Located within verge. Crown lifted to 2m	7	1.4	C (i)
T10	Rowan Sorbus aucuparia	4	upto 100	2	SM	F	Pruning wounds noted Located within verge. Crown lifted to 2m Large lump of mistletoe in crown	5	1.2	C (i)
T11	Rowan Sorbus aucuparia	5	upto 200	3	EM	F	Pruning wounds noted Located within verge. Crown lifted to 2m	18	2.4	C (i)
T12	Rowan Sorbus aucuparia	7	upto 240	3	M	G	Pruning wounds noted Located within verge. Crown lifted to 2m	26	2.9	B (i)

Tree No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
T13	Rowan Sorbus aucuparia	6	upto 150	3	EM	P	Minor dead wood evident in the crown (<75mm) Pruning wounds noted Sparse / thinning crown Located within verge. Epicormic growth present at the base of the tree Crown lifted to 2m	10	1.8	C (i)
T14	Silver Maple Acer saccharinum	12	upto 380	N - 7 S - 2 E - 6 W - 6	M	F	Epicormic growth evident within the crown Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) Located within verge. Thought given to category A but due to crown structure and pruning wounds category B given	65	4.6	B (ii)
T15	Alder Alnus glutinosa	6	upto 330 250	N - 2 S - 5 E - 4 W - 4	M	F	Minor dead wood evident in the crown (<75mm) Pruning wounds noted Located within verge. Epicormic growth present at the base of the tree Crown lifted to 2m Natural bracing of the two stems has occurred at 2m	78	5.0	B (ii)
T16	English Oak Quercus robur	8	upto 170	3	EM	F	Dense ivy cover on main stem Minor dead wood evident in the crown (<75mm) Pruning wounds noted Located within verge. Unremarkable individual Crown height at 4m	13	2.0	C (i)
T17	Silver Birch Betula pendula	12	upto 280	3	EM	F	Minor dead wood evident in the crown (<75mm) Pruning wounds noted	35	3.4	B (i)

Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
GROUPS OF TREES										
G1	Alder Alnus glutinosa	13	avg 400	3	M	F	Epicormic growth evident within the crown Interlocking crowns Minor dead wood evident in the crown (<75mm) Pruning wounds noted Three trees located within verge. Historically the crown has been topped at C.10m	72	4.8	B (ii)
G2	Alder Alnus glutinosa	8	avg 150	2	EM	P	Bark wounds noted Branch socket cavities observed Epicormic growth evident within the crown Interlocking crowns Minor dead wood evident in the crown (<75mm) Pruning wounds noted Three trees located within verge. Next to fence and train line so damage from rubbing against the fence present	10	1.8	C (ii)
G3	Alder Alnus glutinosa	13	avg 250	2	M	F	Bark wounds noted Branch socket cavities observed Epicormic growth evident within the crown Interlocking crowns Minor dead wood evident in the crown (<75mm) Pruning wounds noted Located offside to the south of the fence. Crown hight at 4m above the road	28	3.0	B (ii)
G4	Beech Fagus sylvatica Norway Maple Acer platanoides Alder Alnus glutinosa	16	avg 380	6	M	F	Branch stubs evident Interlocking crowns Major dead wood evident in the crown (>75mm) Minor dead wood evident in the crown (<75mm) Pruning wounds noted Line of 7 trees all in fair condition all have large pruning wounds to keep crown height above 5m over the road. The 4 Norway maples all have dieback within the crown Thought given to category A but due to the wounds and sparse crowns category B given	65	4.6	B (ii)

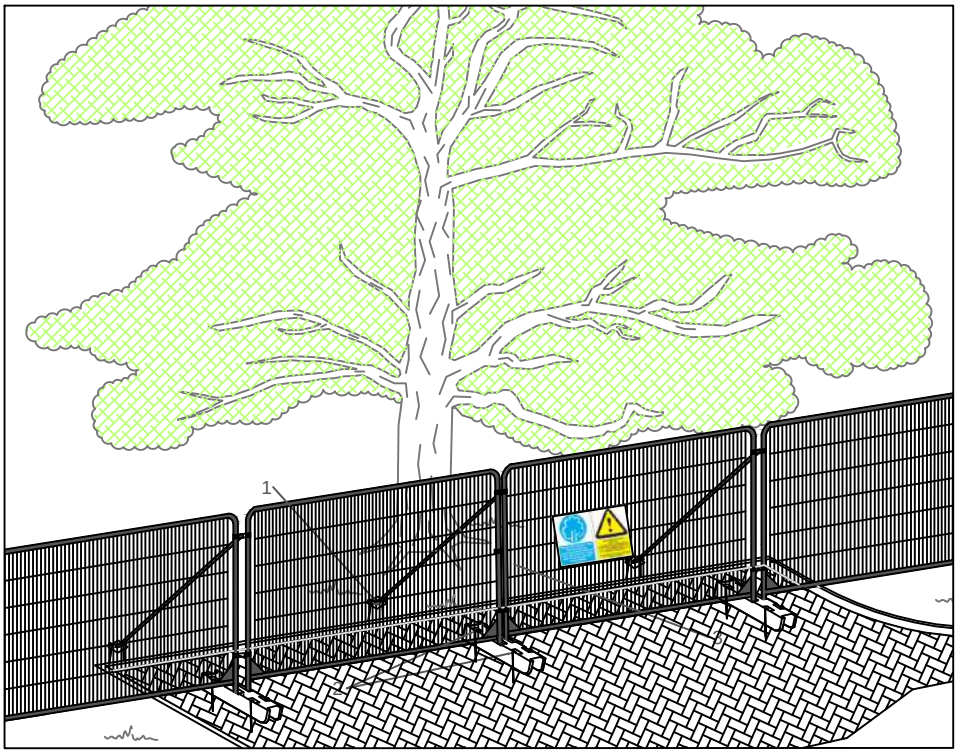
Group No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
G5	Laurel Prunus Laurocerasus Acer spp	2	avg 70	1	SM	F	A group of planted ornamental shrubs. Most have a stem of 75mm or less Planted for ornamental reasons so unremarkable fir arboricultural reasons	2	0.8	C (ii)

Hedge No	Species	Height	Stem Dia.	Crown Radius	Age Class	Overall Condition	Structural Condition	RPA	RPA Radius	BS5837 Cat
HEDGEROWS										
H1	Laurel Prunus Laurocerasus Privet Ligustrum ovalifolium	1	avg 6x 40	0.5	SM	F	Maintained hedgerow Small and unremarkable	4	1.2	C (ii)
H2	Beech Fagus sylvatica	2	avg 6x 60	0.5	SM	F	Maintained hedgerow	10	1.8	C (ii)



Standard specification for protective barrier

1. Standard scaffold poles
2. Heavy gauge 2m tall galvanized tube and welded mesh infill panels
3. Panels secured to scaffold frame with wire ties
4. Ground level
5. Uprights driven into the ground until secure (min depth of 0.6m)
6. Standard scaffold clamps
7. Construction Exclusion Zone signs



Above ground stabilising systems

1. Stabiliser strut with base plate secured with ground pins
2. Feet blocks secured with ground pins
3. Construction Exclusion Zone signs

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APPENDIX B
PROTECTIVE FENCING SPECIFICATIONS

CAD file: S:\Arb resources\Basic Templates\Tree Protection\Appendix B - Protective Fencing A4.dwg

Appendix C1: Tree Surgery Contractors – Tree Work Methodology

Table 1: Related Reference Material

Plan Name	Drawing Number
Tree Survey Plans	10859-T-01-03
Tree Retention Plans	10859-T-04-06
Tree Protection Plans	10859-T-07-09
Appendices	**Appendix Title**
Appendix A	Tree Schedule

The Site Manager and tree surgery contractor must ensure that any necessary consent has been received from the local authority and that no protected species are harmed whilst carrying out site clearance or tree surgery works.

The trees to be removed to facilitate the development will be marked up by the Arboricultural Clerk of Works during the pre-commencement site meeting and, where required, with the tree surgeon present. Highly visible fluorescent paint will be used to assist in identification. A pre-commencement tool box talk will be given and the works will only be carried out once the project ecologist is satisfied that there are no ecological constraints.

The trees to be removed are shown on the Tree Retention Plans (referenced above) as red circles hatched with red criss-crossing lines. A key has been provided on each of the plans to assist with identification.

Works on all trees cannot commence until all pre-commencement conditions have been discharged.

GENERAL TREE PRUNING RECOMMENDATIONS

All works shall be in accordance with BS 3998:2010 '*Tree work. Recommendations'*. Any competent arboriculturist will be aware of this publication and will be able to carry out work to the required standard. Therefore, the use of a competent tree surgery contractor is necessary to comply with this.

Prior to any pruning operations occurring, the tree and its surroundings should be assessed for the presence of any protected species and the timing of works should best avoid the potential for any adverse impact on wildlife. Consideration should be made for the seasonal cycles of species of fauna and flora e.g. nesting birds.

Minor pruning can be carried out at any time of the year however, it is recommended that pruning is avoided when deciduous trees, particularly maples, lime and birch are coming into leaf (Spring). Equally, pruning should be avoided in the autumn months when the trees ability to seal wounds is reduced and thus vulnerability to pathogenic decay fungi is much higher. Pruning in the Autumn depletes valuable energy reserves. This is particularly important if it is necessary to carry out heavy pruning or work on older trees. Pruning should also be avoided during or soon after drought.

Before any tree work operations commence, the method of disposal, utilization or retention of arisings should be prior agreed. Disposal of arising should not involve burning unless other options of disposal are impracticable or, as in the case of Ash Dieback, the material is affected by a diseases or pest for which industry guidance on sanitation dictates.

Crown Reduction

Trees T1, T2, T3, T5 and T6 shall require crown reductions.

A crown reduction is the reduction in height and/or lateral spread of the crown (crown being the foliage bearing portions of a tree). The final result should retain the main framework of the crown and a proportion of the leaf bearing structure to leave a similar, although smaller crown outline. Crown reduction cuts should be as small as possible and in general not exceed 100mm diameter unless there is an overriding need to do so. All cuts should be made at an appropriate branch union / growth point. A crown reduction should not be confused with 'topping'.

- T1 – reduce overall crown extent by no more than 2.0m in length / lateral spread north, east and west, in the south, reduce canopy extent to create a 2.0m clearance from the proposed building edge. Reduce the overall height of up to 4m. Crown raise on southern side to 3m.

- T2 – reduce overall crown extent by no more than 2.0m in length / lateral spread north, east and west, in the south, reduce canopy extent to create a 2.0m clearance from the proposed building edge. Reduce the overall height of up to 4m. Crown raise on southern side to 3m.

- T3 – reduce overall crown extent by no more than 2.0m in length / lateral spread north, east and west, in the south, reduce canopy extent to create a 2.0m clearance from the proposed building edge. Reduce the overall height of up to 4m. Crown raise on southern side to 3m.

- T5 – reduce overall crown extent by no more than 1.0m in length / lateral spread. Crown raise on southern side to 3m.

- T6 – reduce overall crown extent by no more than 1.0m in length / lateral spread. Crown raise on southern side to 3m.

Appendix C2: Fencing Contractors – Working Methodology

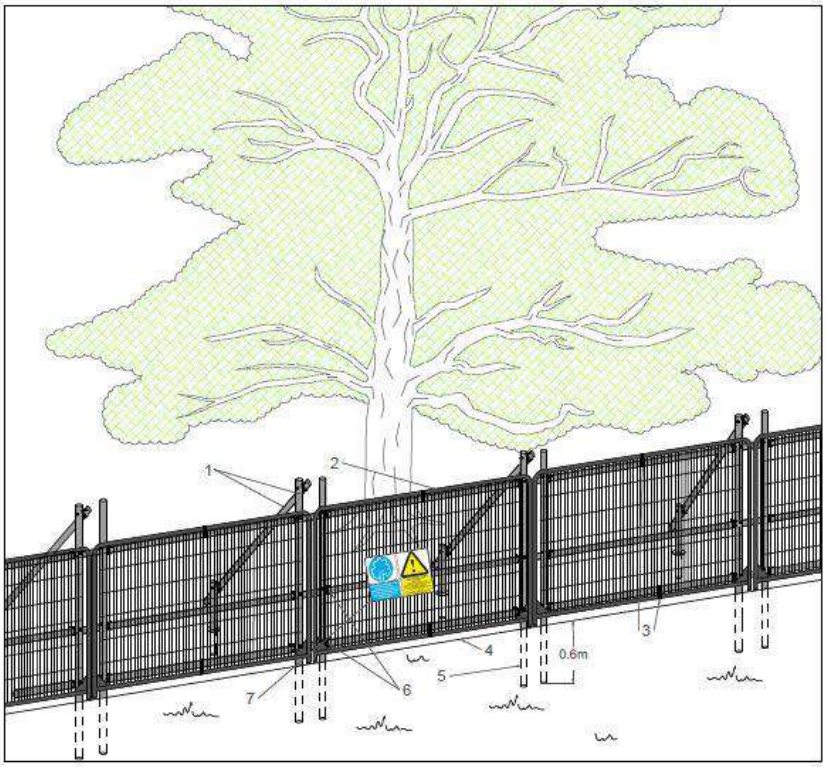
Table 1: Related Reference Material

Plan Name	Drawing Number
Tree Protection Plans	10859-T-07-09
Appendices	**Appendix Title**
Appendix A	Tree Schedule
Appendix B	Protective Fencing Signage

Tree Protection Fencing will be installed as detailed in Tree Protection Plans (referenced above) at, where possible, the extent of the root protection areas of retained trees using the dimensions indicated on the relevant plans. The positioning of the Tree Protective Fencing shall be measured out with assistance from the Arboricultural Clerk of Works and, where deemed necessary, with the Site Manager present. Highly visible fluorescent paint and / or marker pegs / stakes will be used to assist in identification.

STANDARD FENCING SPECIFICATION

Protective Fencing will comprise a Heras HSG151 panel framework supported by scaffold poles driven into the ground. An example of this has been illustrated below.



Standard specification for High Intensity Protective Barrier

1. Standard scaffold poles
2. Heavy gauge 2m tall galvanized tube and welded mesh infill panels
3. Panels secured to scaffold frame with wire ties
4. Ground level
5. Uprights driven into the ground until secure (min depth of 0.6m)
6. Standard scaffold clamps
7. Construction Exclusion Zone signs

Installation Guide

- The scaffold framework shall comprise of upright poles of at least 3.0 metres in length driven no less than 0.6 metres into the ground at maximum 3.0 metre centres with horizontal and diagonal poles fixed to the uprights.
- The two horizontal rail poles shall be attached to the uprights at heights of 0.6 and 1.8 metres with clamps to each joint.
- The diagonal scaffold pole struts shall be clamped to the top rail of the scaffold framework at a 45º angle and extend back into the root protection area and clamped to a 0.7 metre length of scaffold tube that shall be driven no less than 0.5m into the ground.
- No fixing shall be made to any tree and all possible precautions shall be taken to prevent damage to tree roots when locating posts.

GENERAL TREE PROTECTIVE FENCING METHODOLOGY

The fencing will be strong and suitable for the location, type and proximity of construction activity and prevent access of machinery, plant or operative beyond the area required to construct the development.

Tree Protection Fencing and work exclusion zones will be clearly marked using appropriate signage, an example of which has been included as Appendix B. These signs shall be laminated to ensure they last the duration of the construction works and shall be fixed to the fencing panels every 10 metres along its length.

All Tree Protective Fencing will remain rigid, in place and locking clamps will be used to attach the heras fencing together. The Tree Protective Fencing and the locking clamps will not be removed for the duration of the development. These will be inspected weekly by the Site Manager and at regular intervals by the Arboricultural Clerk of Works. This will from the regular inspection of the tree protection.

Following the completion of construction works and in agreement with the Arboricultural Clerk of Works, the Tree Protection Fencing will be removed carefully as to avoid causing root disturbance or leaving in situ any lengths of scaffold framework. This operation can be carried out prior to soft landscaping works such as new planting, mulching grass sowing etc.

Appendix C3: Excavation Under Supervision – Working Methodology

Table 1: Related Reference Material

Plan Name	Drawing Number
Tree Protection Plans	10859-T-07-09

The purpose of the Method Statement is to ensure that damage to the rooting area of all retained trees is protected from unnecessary damage. Due to the requirement for excavation within the root protection areas of T1, T2, T3, T5 and T6 it is not possible to use “no-dig” construction for all proposed works.

The cutting of roots shall not entirely be avoidable during the removal of existing ground material to construct the certain parts of access road and residential plots. As such the excavation of this material is to be carried out under the supervision of the project Arboriculturalist. Any roots located / identified during these works shall be pruned back to the face of the trench as they became exposed. Roots shall be wrapped with hessian material, which is to be kept damp, until the area can be back filled.

The excavation will be completed with the use of an air spade, this will allow for excavation with minimal damaged caused to any roots. To this end, all works encountering roots will be conducted in accordance with specifications given in Section 7.2 of BS5837(2012) and in accordance with the following points:

- Roots smaller than 25 mm diameter may be pruned if considered necessary, making a clean cut with a suitable sharp tool (e.g. bypass secateurs or handsaw).
- In the first instance, any roots located / identified during these works that cannot be safely incorporated into the footpath shall be pruned to a suitable growth point, if this requires further excavation to access a growth point, then this excavation will need to be conducted by hand and overseen by the ACoW.
- Any exposed roots to be retained during excavation will be wrapped with wet hessian material, which is to be kept damp until re-covered. Roots will not be left exposed for more than 48 hours.

All works shall be in accordance with BS 3998:2010 ‘*Tree work. Recommendations’* and in accordance with approved contractors methodology and risk assessment. The use of a competent tree surgery contractor is necessary to comply with this.

Tree Protection Fencing positioned as shown on the Tree Protection Plans is not to be removed or moved back. No heavy machinery is to be positioned within the RPA of the trees

Appendix C4: Supervision of Uplift of Existing Hard-standing – Working Methodology

Table 1: Related Reference Material

Plan Name	Drawing Number
Tree Protection Plans	10859-T-07-09
Appendices	
Appendix A	Tree Schedule

The purpose of the Working Methodology is to ensure that the rooting area of retained trees is protected from unnecessary damage.

UPLIFT METHODOLOGY

The removal of all existing hardstanding will be undertaken with care and under supervision of the appointed Arboricultural Clerk of Works using the methodology set out.

The process of removing the existing hardstanding from within the Root Protection Areas of retained trees is potentially harmful to the tree's root systems. Therefore, it is of paramount importance that care is taken with this operation.

In these areas hand tools only, including the use of powered hand-tools, will be employed. To avoid any accidental damage to roots that may be present, it is proposed that works within root protection areas are supervised at all times by the appointed Arboricultural Clerk of Works.

In some areas it may be possible to utilise any existing compacted subbase beneath the hardstanding, which should be devoid of any significant rooting material but at this stage it is not possible to determine if this is feasible.

If the existing subbase is to be removed, no excavation below this subbase will occur to ensure that any roots present below the subbase are not damaged.

Decisions will be made on an individual basis in conjunction with the appointed Arboricultural Clerk of Works and site contractor, depending on the final use and treatment of the ground i.e. soft landscaping.

NB. At all stages, it will be necessary to apply appropriate damping-down to avoid dust from damaging long-term tree health. If seeding, all ground preparation also to be undertaken by hand using hand-operated tools only.

Following further review, it may be necessary to undertake ground decompaction to provide the tree with more aeration for the future use of the area around the tree as public open space. Decisions will be made on site following removal of the existing surfaces.

Supervision of Hardstanding Uplift Works within RPA's of Retained Trees

- **Step 1** – Erect Tree Protection measures. Tree Protection Measures are not to be moved unless approved and supervised by the Arboricultural Clerk of Works.
- **Step 2** – In the presence of the Arboricultural Clerk of Works, commence the uplift of hardstanding within the RPA of retained trees.

  NB at all stages, it will be necessary to apply appropriate damping-down to avoid dust from damaging long-term tree health.
- **Step 3** – Begin to gradually break up the areas of hardstanding. Any exposed roots shall be wrapped in Hessian which is to be kept damp until new topsoil is laid.
- **Step 4 –** Begin excavation under supervision as per appendix C3 if further excavation is required.
- **Step 5** – Following further review, it may be necessary to undertake ground decompaction to provide the trees with more aeration for the future use of the area around the tree as public open space. Decisions will be made on site following removal of the existing hard standing.

Appendix C5: General Tree Protection Working Methodology

Table 1: Related Reference Material

Plan Name	Drawing Number
Tree Protection Plans	10859-T-07-09
Appendices	
Appendix A	Tree Schedule

The purpose of the Working Methodology is to ensure that retained trees are protected from unnecessary damage. These methods will be adhered to at all times for the duration of the construction phase.

All the retained trees will need to be adequately protected during works. Measures to protect these trees will follow the best practice principles set out in BS5837: Trees in Relation to Construction Recommendations (2012). These have been broadly summarised below.

WORKING METHODOLOGY

No trees will be removed or pruned during construction other than those agreed as part of planning consent or subsequent approval from the Local Authority Tree Officer. Any proposed deviation from the tree removal and retention presented in this document must be discussed with the project Arboricultural Consultant prior to implementation.

No Root Protection Areas will be affected by excavation works, storage of materials, plant or machine access. Where practicable, ground protection boards will be used for all pedestrian movements within the RPA of retained trees.

All proposed utilities will be installed outside of the RPA of retained trees. All utilities will be installed in accordance with the latest NJUG guidelines.

Site compounds, Portakabins, Containers and other temporary buildings can in some cases be used in root protection area if prior consent is agreed by the acting local planning authority. The method for installing the buildings and an assessment of whether temporary ground protection is required is to be agreed with the project Arboriculturist and specified prior to installation.

No materials or soils are to be stored within the Root Protection Area of the retained trees.

Oil, bitumen, cement or other material that is potentially injurious to trees will not be stacked or discharged no closer than 5m from the edge of the trees canopy. Concrete mixing will be done no closer than 5m from the edge of the trees canopy. Allowance will be made for the slope of ground to prevent materials running towards the tree.

Wide or tall loads etc. should not come into contact with retained trees. Banksmen will supervise transit of vehicles where they are in close proximity to retained trees.

No fires will be allowed on site.

Notice boards, telephone cables or other services will not be attached to any part of a retained tree. If unexpected large roots (>25mm diameter) are encountered during excavation for construction works the arboricultural consultant should be contacted immediately. No exposed roots will be left uncovered. They will be covered over as soon as possible to minimise the risk of drying out and dying.

As recommended within section 8.8.3 of BS5837 Post Development Management of Existing Trees, all retained trees should be subjected to sound arboricultural management where there is public access in order to satisfy the landowner's duty of care. To this end, a programme of inspections to advise on any necessary work to retained trees should be drawn up in conjunction with an arboriculturist. An application to conduct any such work will be made to the LPA prior to completion. The only exception to this would be in the case of a tree considered an immediate and unacceptable risk to health and safety. In such a case urgent works may proceed, however the LPA must be informed following completion.

In **all** cases, any such pruning would only be recommended on Health and Safety grounds as part of landowner's duty of care. This approach is in accordance with sound arboricultural practice for trees in the public realm.

Appendix C6: Installation of No-dig Cellular Confinement – Working Methodology

Table 1: Related Reference Material

Plan Name	Drawing Number
Tree Protection Plans	10859-T-07-09
Appendices	**Appendix Title**
Appendix F	Cellweb TRP Installation Guide
Appendix G	Green Grid System Specification

The purpose of the Method Statement is to ensure that the rooting area of all retained trees is protected from unnecessary damage. Therefore, the digging down, compacting the soil and creating an impermeable surface will be minimised.

A method to spread and support the load of the hard surface and anticipated usage without causing compaction of the soil structure beneath will be used. The use of “no-dig” industry led specialist engineering solutions i.e. three dimensional load bearing cellular confinement systems shall be used to construct the footpath within the RPA of trees T1, T2, T3, T5, T6 and T7.

Figures 1 and 2 demonstrate the specification for No-dig Footpath Construction and No-dig Permanent Road Construction (further details and product specifications are available upon request).

Figure 3 and Appendix E provides information from a reputable supplier (Geosynthetics Ltd).

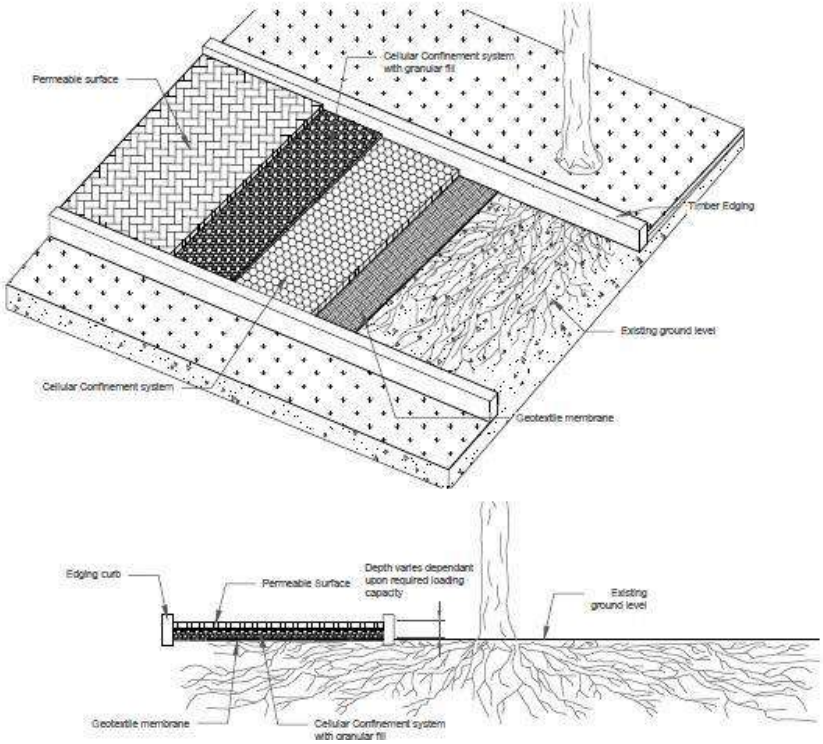


Figure 1: No-dig Footpath Construction

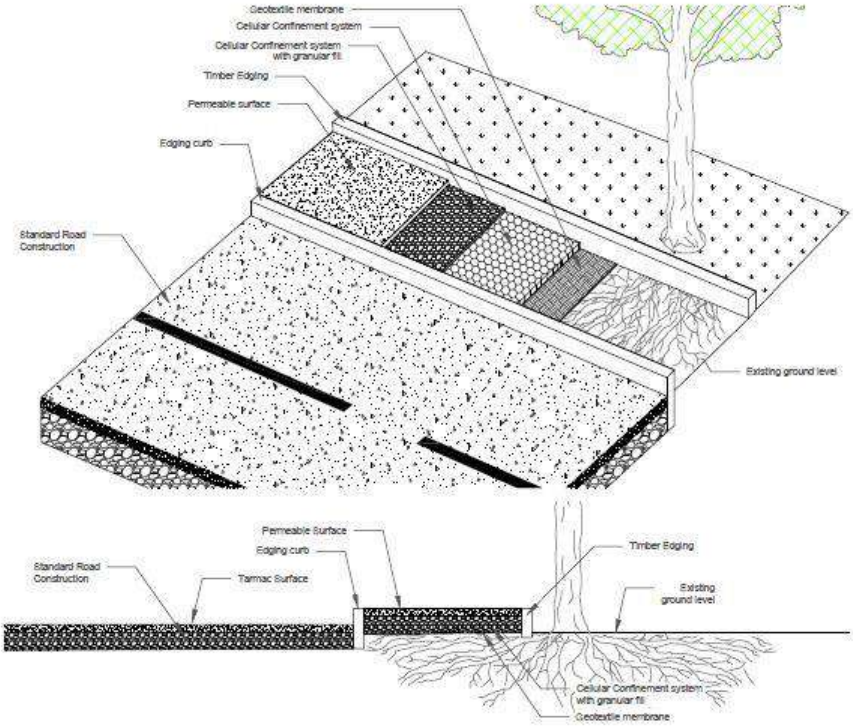


Figure 2: No-dig Permanent Road Construction

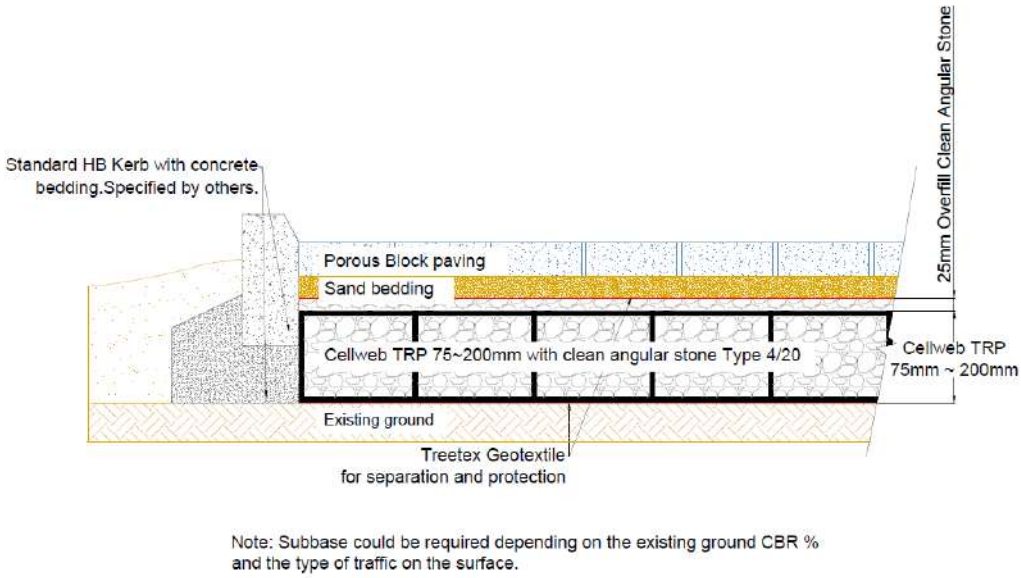


Figure 3: Geosynthetics Cellweb 75-200mm Block Paving Standard Detail

The principal rules to apply when constructing such a system as described above are as follows:

- Roots must not be severed, cut or broken;
- Original ground levels must not be changed;
- Soils must not be compacted;
- Oxygen and water must be able to diffuse into the soil beneath the engineered surface.

The initial task will include the removal of the existing vegetative surface. It is of paramount importance that particular care is taken when removing the top surface layer. This operation will need to be supervised by the Arboricultural Clerk of Works.

The use of a geotextile membrane will help support the sub-base and form a partial filter (a last line of defence) for contaminants such as oil and road salt. The sub-base will be porous to enable gaseous exchange and water infiltration. A suitable material is washed angular stone with a diameter between 20 – 40mm with no fine aggregates. Aggregates or stones must have a near neutral PH.

The surface material will be permeable paving. The exact specification of the hard surface is a matter for the Structural Engineer.

The following methodology should be used as a guideline for the installation of cellular confinement systems:

Under **arboricultural supervision** remove the upper surface layer vegetation / turf. The depth of the excavation will be determined by the arboriculturist and shall commence until the shallowest root with a diameter greater than 25mm, or a matt of fine fibrous tree roots, is encountered. Holes shall be filled with clean angular stone and sharp sand. Do not level off high spots or compact the soil through rolling.

Immediately after an even soil surface layer has been prepared, a geo textile membrane will be laid. The geo-textile membrane sheets should overlap by a minimum of 300mm.

The sub-base will be laid to a depth and specification prescribed by the Structural Engineer.

Lay out the collapsed cellular confinement system on-top of the membrane. Use a J pin (usually supplied) into the centre cell at the end of the panel and secure into the ground.

Pull the cellular confinement sheet out to its full length and secure its length with another J pin. Measure its width to 2.56m and secure in each of the corners with the J pins. Use 10 pins per panel to create a panel measuring 8.1m x 2.56m. **Each cell must be fully extended and under tension.**

Staple adjacent panels together at each cell (200mm: 5 staples. 150mm: 4 staples. 100mm: 3 staples. 75mm: 3 staples).

If a curved path or shape is required, this should be cut when the cellular confinement panel is pinned out to 8.1 x 2.56m, ensuring complete cells remain. **Do not try to curve or bend the panels into place.**

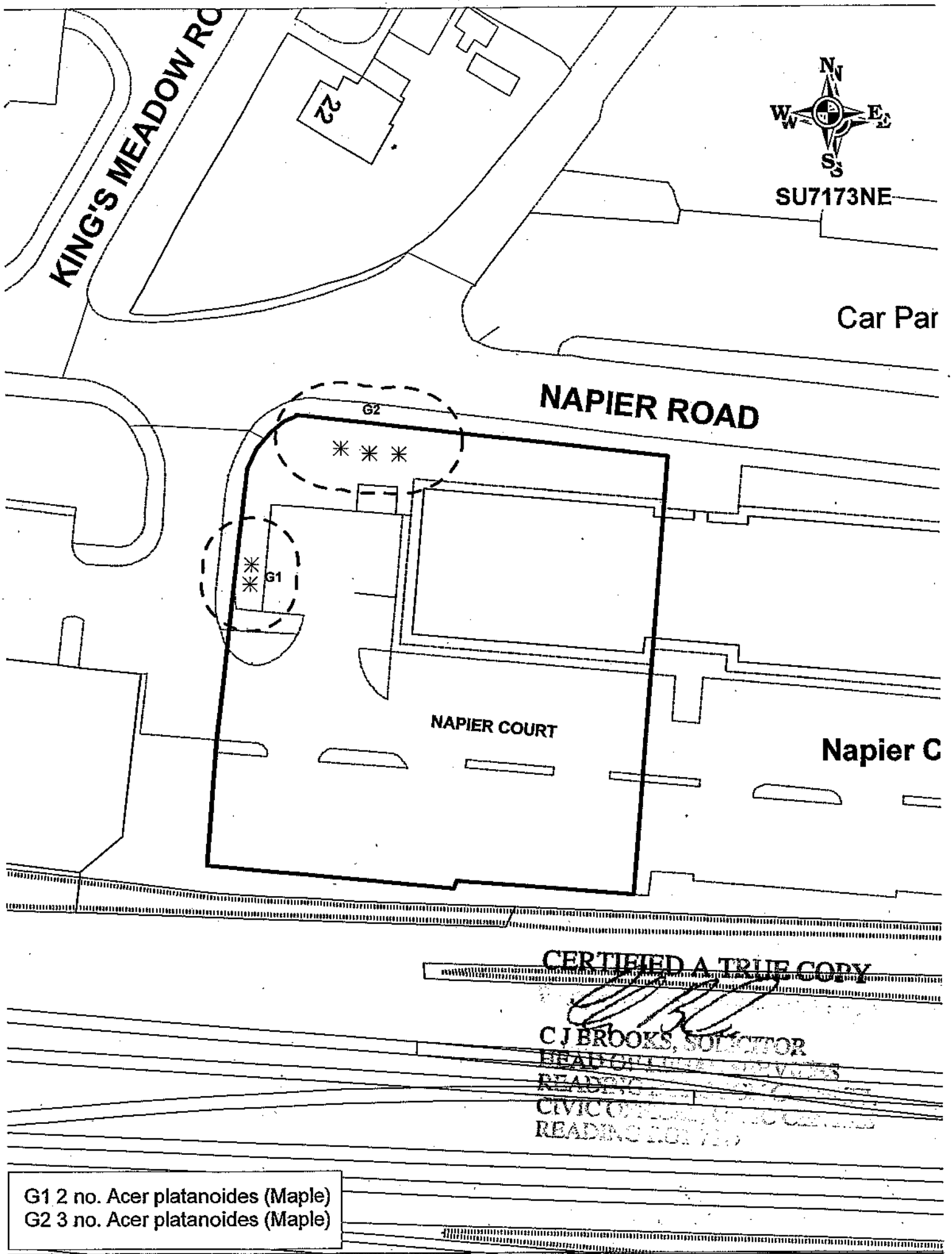
Infill the Clean Angular Stone. The infill material must be a clean angular stone, Type 4/20mm or Type 20/40mm. **Do not use M.O.T type 1 or crushed stone with fines for tree root protection.**

Infill the cells with the clean angular stone, working towards the tree and using the infilled panels as a platform – working from one end to the other. Minimum 25mm overfill of clean angular stone when used in conjunction with a hard surface. **No compaction is required of the infill. Do not use a whacker plate or other means of compaction.**

Encourage settlement of the stone with the use of a light roller or with 2-3 passes of the construction plant used for installation.

Where edging is required for footpath and light structures, the edge will comprise treated timber boards pegged every 500mm with a wooden peg on the outside. The top of the peg will be flush with the top of the board.

All surfaces in Root Protection Areas must be porous. Surfaces can include porous block paving, porous asphalt, loose gravel, grass and gravel retention systems (e.g Golpla), resin bound gravel, concrete and Astro turf.



CERTIFIED A TRUE COPY

C J BROOKS, SOLICITOR
HEAD OF LEGAL SERVICES
READING BOROUGH COUNCIL
CIVIC OFFICES
READING RG1 7TD

G1 2 no. Acer platanoides (Maple)
G2 3 no. Acer platanoides (Maple)

TITLE TREE PRESERVATION ORDER: NAPIER COURT, NAPIER ROAD, READING	
DRG NO E2757	DATE MAY 2010
DRAWN BY KR	SCALE 1:500

Reading BOROUGH COUNCIL PLANNING SUPPORT TEAM

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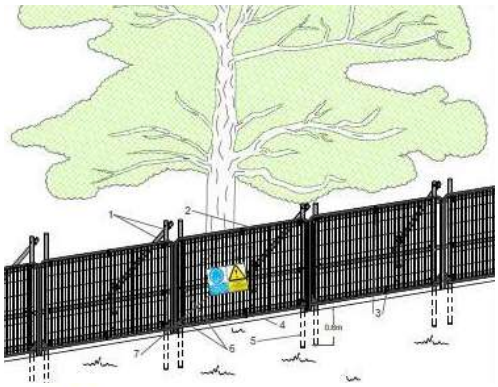
WHAT YOU NEED TO KNOW ABOUT WORKING NEAR TREES

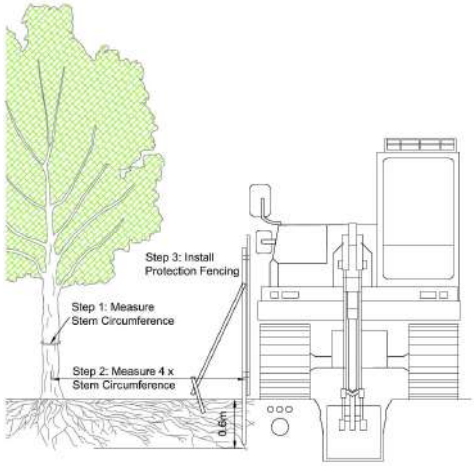
This advice note provides a brief overview of the methods of protection for trees located across the site. Compliance with these guidelines will be a requirement of all contractors working near retained trees.

Any construction works which are to be carried out near to or within the fenced off areas should be carried out in accordance with the Arboricultural Method Statement and as explained by the Site Manager during the site induction. Failure to adhere to the correct sequence, manner and timing of operations detailed in the Arboricultural Method Statement may result in irremediable damage to trees or disturbance to retained tree cover.

Retained trees are protected by planning law and reckless damage or non consented tree removal could result in the serving of a stop notice or prosecution by the LPA.

Trees make a significant contribution to the landscape character of the development and they are to be treated as important assets. To protect these assets, tree protective fencing has been installed where required across the site.





The following points are to be considered at all times.

1. Protective fencing has been installed at the extent of the calculated root protection area (RPA) - **Do not use or access** the ground within the fenced area. This is particularly the case for placement of site offices, stockpiles of soil or fuel and material storage, storing machinery or parking of vehicles, debris or building materials or fires.
2. **Avoid** excavations, changes in ground levels or tracking of machinery within the fenced area at **all times.** These activities can seriously compromise the long term survival of trees due to the impact on a trees roots.
3. **Report** any instances where the fencing has been removed, repositioned, damaged or is not fit for purpose (see images below) to the Site Manager. This shall help the Site Manager to ensure that the fencing is maintained throughout the construction process. It will also reduce the risk of any staff and contractors accidently and inadvertently causing damage to trees as a result.

Unacceptable example of tree protection due to a lack of adequate fencing and poor site management. Note mounds of soil have been placed within the Root Protection Area.

Tree Protection Fencing which has been erected prior to the commencement of any site works and the correct signage has been provided to clearly highlight that this is a protected zone.

Please acknowledge you have read and understand this document by visiting the website http://bit.ly/2EprKu8 or scanning the QR Code on a Smartphone or Tablet.

fpcr

Geosynthetics Limited Tel: 01455 617 139 Fax: 01455 617 140 Email: sales@geosyn.co.uk

Cellweb® TRP Installation Guide

Step 1: Prepare Surface

Step 2: Lay out Treetex™

Step 3: Lay out Cellweb® TRP

- Cellweb® TRP is a NO DIG tree root protection measure and it is recommended that no excavation be performed without prior approval and guidance from the Local Authority Arboricultural Officer.
- Soil compaction from vehicles, machinery and materials is to be strictly prohibited during construction within Root Protection Areas (RPAs).
- Approval must be obtained from the Local Authority that the design and the method of construction is acceptable.
- Further information is available from the following two documents;
  - British Standard BS5837: 'Trees in Relation to Design, Demolition and Construction' (2012).
  - Arboricultural Advisory and Information Service: Practice note 12 – 'Through the Trees to Development' (APN12).

Installation Method

1. Prepare the Surface

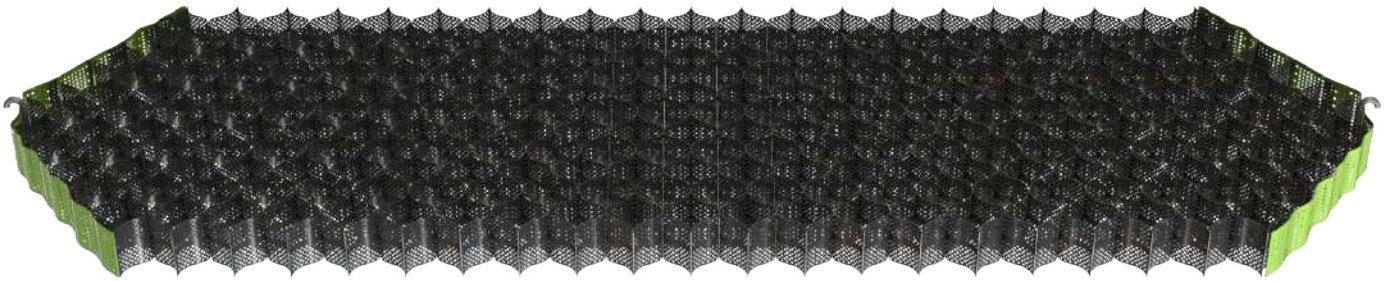
- Remove the surface vegetation using appropriate hand held tools or herbicide (see Note 1).
- Remove any surface rocks, debris and organic material.
- Create a level surface by filling any hollows with clean angular stone or sharp sand.
- Do not level off high spots or compact the soil through rolling.

2. Lay out the Treetex™ Non-Woven Geotextile

- Lay out the Treetex™ over the prepared area, overlaying the edges of the required area by 300mm.
- Overlap any joins by 300mm minimum or more, depending on soil structure (see Note 2).

3. Lay out the Cellweb® TRP Cellular Confinement System

- Lay out the collapsed Cellweb® TRP on-top of the Treetex™.
- Place one of the supplied J pins into the centre cell at the end of the panel and secure into the ground.

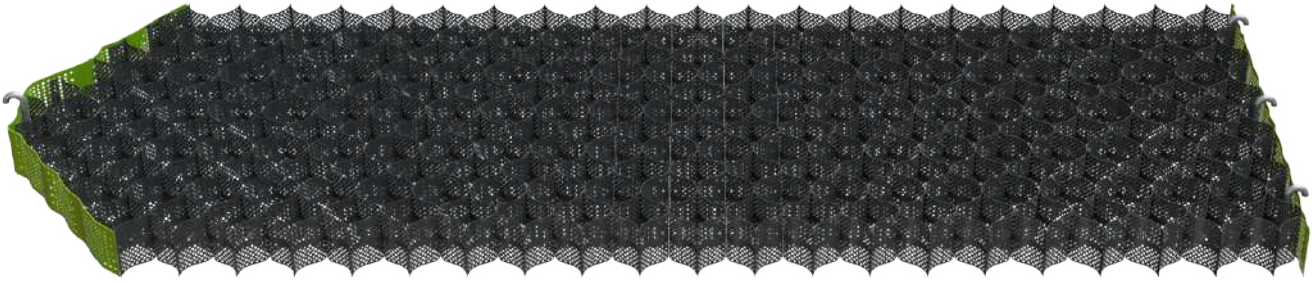


Cellweb® TRP - Installation Guide

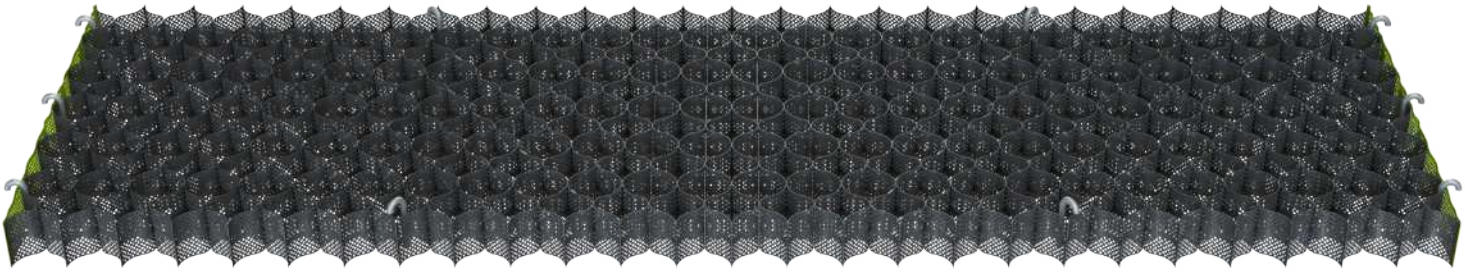
Step 3: Pinning Cellweb ® TRP

Step 3: Stapling Cellweb ® TRP

- Pull out the Cellweb® TRP to its full 8.1m length and secure its length with another J pin.



- Now measure its width to 2.56m and secure in each of the corners with the J pins.
- Use 10 pins per panel to create a panel measuring 8.1m x 2.56m.



- This will produce a cell size of 259mm x 224mm which is the required cell aperture. Each cell must be fully extended and under tension.
- Staple adjacent panels together at each cell (see Note 3).
- If a curved path or shape is required, this should be cut when the Cellweb® TRP panel is pinned out to 8.1 x 2.56m, ensuring complete cells remain. Do not try to curve or bend the Cellweb® TRP panels into place.
- When cutting Cellweb® TRP, please bear in mind that you will lose two internal cells per cut. Across a 8.1m long panel, this equates to a loss of 0.224m x 2 along the length or 0.259m x 2 across the width.

Cellweb® TRP - Installation Guide

Step 4: Clean Angular Stone

Step 5: Edge Restraints

Step 6: Surface Options

4. Infill the Clean Angular Stone

- The infill material must be a clean angular stone, Type 4/20mm or Type 20/40mm (see Note 4).
- Do not use M.O.T type 1 or crushed stone with fines for tree root protection.
- Infill the Cellweb® TRP cells with the clean angular stone, working towards the tree and using the infilled panels as a platform.
- Minimum 25mm overfill of clean angular stone when used in conjunction with a hard surface.
- No compaction is required of the infill. Do not use a whacker plate or other means of compaction**.**
- Encourage settlement of the stone with the use of a light roller or with 2-3 passes of the construction plant used for installation.
- If the clean angular stone is being used as the final surface; regular maintenance will be required to ensure a minimum overfill of 50mm.

5. Edge restraints

- Excavations for kerbs and edgings should be avoided within the RPAs.
- Where edging is required for footpath and light structures, a peg and treated timber board edging is acceptable
- Other options include wooden sleepers, kerb edging constructed on-top of the Cellweb® TRP system, plastic and metal edging etc.

6. Surface options

- All surfaces in Root Protection Areas must be porous. Surfaces can include porous block paving, porous asphalt, loose gravel, grass and gravel retention systems (e.g Golpla), resin bound gravel, concrete and astro turf.

NOTES

1. **Herbicide:** According to BS5837:2012 "The use of herbicides in the vicinity of existing trees should be appropriate for the type of vegetation to be killed, and all instructions, warnings and other relevant information from the manufacturers should be strictly observed and followed. Care should be taken to avoid any damaging effects upon existing plants and trees to be retained, species to be introduced, and existing sensitive habitats, particularly those associated with aquatic or drainage features."
2. **Geotextile:** We recommend the installation of a Treetex™ under the Cellweb® TRP, or under the sub-base, if installed. The overlapping between adjacent rolls of Geotextile should be: CBR > 3%: 300mm minimum, CBR between 1% and 3%: 500mm minimum. CBR ≤ 1%: 750mm minimum.
3. **Staples:** Number of staples per join: 200mm: 5 staples. 150mm: 4 staples. 100mm: 3 staples. 75mm: 3 staples.
4. **Granular Fill:** Open graded sub-base, clean angular stone Type 4/20 or Type 20/40. Please refer to BS7533-13:2009 and to the Design Manual for Roads and Bridges (DMRB), Volume 4 Geotechnics and Drainage, Section 1 Earthworks, HA44/91, Volume 7 – IAN 73/06 Design Guidance for road pavement foundations and Manual of Contract Documents for Highway Works (MCHW), Volume 1 Specification for Highway Works for the construction and maintenance of the fill material.

This information corresponds to our current knowledge on the subject. It is offered solely to provide possible suggestions for your own experimentation. It is not intended, however, to substitute for any testing you may need to conduct to determine for yourself the suitability of our products for your particular purposes. This information may be subject to revision as new knowledge becomes available. Since we cannot anticipate all variations in actual end use conditions, Geosynthetics Limited makes no warranties and assumes no liabilities in connection with this information. Nothing in this publication is to be considered as a licence to operate under or a recommendation to infringe any patent right.