

ARBORICULTURAL IMPACT ASSESSMENT

& METHOD STATEMENT

WEST BANK ROAD

SUTTON BRIDGE

NOVEMBER 2023

ARBORICULTURAL SOLUTIONS LLP

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SUMMARY

This report has been commissioned to provide detail on potential impacts on the tree population by a proposed development, and the protection measures required to ensure the long-term health of retained trees. The proposal is the construction of a detached single-storey dwelling with integrated garage, drive and private garden space.

Trees considered to be within the influencing distance of the development have been assessed in accordance with BS5837:2012 "Trees in relation to design, demolition and construction – Recommendations". I have inspected all the trees on and near the site that could potentially be affected by the development and list their details in Appendix A. As a result, 2 individual trees were surveyed. The implications of the proposal are:

1. The proposed development does not require the removal of any trees.

2. There is a negligible encroachment into the RPAs of several trees (T004-T015) from the proposed concrete yard and the use of specialised construction methods and materials is not considered necessary although precautions will be required. There is a more significant encroachment into the RPA of two trees (T018 & T019) from the proposed concrete yard. Within the RPAs of these two trees specialised techniques and materials will be required to ensure the long-term health and retention of these trees.

3. The overall impact on the tree population is considered minimal providing that the construction is undertaken with strict adherence to the recommended tree protection measures.

1. Introduction

1.1. Instructions

1.1.1. We are instructed by Swann Edwards Architecture on behalf their clients, Boud Minerals, to report on trees growing adjacent to the site and potentially impacted by a proposed development. We are to report on the trees that may be implicated in the development proposal and provide guidance to ensure their long-term health and continued contribution to the amenity of the area.

1.2. Drawings and Documents

1.2.1. We confirm sight of the following documents and drawings prior to the commencement of this report:

- Proposed site plan, drawing reference PP1000 by Swann Edwards Architecture.
- Proposed Store Building and Yard, drawing reference PP 1000 Rev A Swann Edwards Architecture.

2. Report on site visit

2.1. General

2.1.1. The site was inspected on the 1st of August 2023, all arboricultural data contained in this report was recorded at that time. Weather conditions were sunny intervals and good visibility with a light breeze.

2.1.2. The relevant data was recorded to assess the condition of the trees, their potential constraints on the proposed development and the protection and construction measures required to ensure their long-term retention.

2.1.3. Information is given on condition, size and indicative positions in accordance with British Standard 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*.

2.2. Inspection

2.2.1. Trees likely to be affected by the development were identified and inspected from ground level only. The trees were inspected based on the Visual Tree Assessment (VTA) method as proposed by Mattheck and Breloer (1994) and were not climbed. No invasive examination technique (such as increment boring, or internal decay detection) was carried out. As the inspection was visual only, no guarantee, either expressed or implied, of the internal condition of the wood of these trees can be given.

2.3. Marking

2.3.1. A digital site plan was converted for use in Arbortrail tree data software. Plotted tree positions were checked manually on site from set points.

2.3.2. Each reference number on the plan refers to a digital survey entry completed on site to show the following data:

- Sequential tree reference number (recorded on tree survey plan)
- Species - Common name followed by the Latin name for the first entry of each distinct species
- Height in metres
- Trunk diameter in millimetres, measured in accordance with Annex C of BS 5837:2012
- Crown radius measured at the four cardinal points – where only one measurement is given, the crown is symmetrical
- First significant branch height and direction of growth
- Crown clearance above ground level
- Life stage (young, semi-mature, early mature, mature, over-mature, veteran)
- General observations, particularly of structural and/or physiological condition, and/or preliminary management recommendations
- Estimated remaining contribution in years (less than 10, 10+, 20+, more than 40)
- Category U or A to C grading, to be recorded on the tree survey plan

2.3.3. Survey sheet entries are shown at Appendix A of this report.

2.4. Tree categorisation

2.4.1. Trees vary in, size, age, and landscape importance. All trees were categorised in accordance with the British Standard Trees in relation to design, demolition and construction - recommendations BS 5837: 2012. BS Categories have been entered in the tree schedule and are as follows:

U – Trees unsuitable for retention. 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.

A - High Category. Trees of high quality with an estimated remaining life expectancy of at least 40 years.

B - Moderate Category. Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

C - Low Category. Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.

2.4.2. The existing proposed site drawing was edited to produce a Tree Constraints Plan (TCP) showing the constraints on the proposed layout (refer to drawing TCP_WESTBANK_1. This information is then used to inform and modify the proposed design if applicable and produce a tree protection plan (TPP_WESTBANK_2).

2.4.3. The root protection areas (RPAs) have been calculated using Trees in Relation to Design, Demolition and Construction - recommendations BS 5837: 2012. The RPAs of trees implicated in the construction process have not been adjusted in shape to consider the existing or past site conditions such as the presence of roads, structures and underground services. The full RPA has been retained to show all areas where care is required.

2.4.4. The trunk diameter circle and crown outline show the BS Category in the following colours:

Category U	**Dark red**
High Quality (A)	**Light green**
Moderate Quality (B)	**Mid-blue**
Low Quality (C)	**Grey**

2.4.5. Trees in Relation to Design, Demolition and Construction - Recommendations BS 5837: 2012 do not include arguments for or against development, or for the removal or retention of trees. Where development is likely to take place, the standard provides guidance on how to decide which trees are appropriate for retention.

2.5. Tree Preservation Orders

2.5.1. The Town and Country Planning (Tree Preservation) (England) Regulations 2012 allows for trees either as groups, or individuals, or as woodlands, to be protected by Tree Preservation Orders (TPO). These have the effect of preventing the cutting down, topping, lopping, uprooting, wilful damage or wilful destruction of trees except in certain circumstances, other than with the consent of the local planning authority.

2.5.2. A Conservation Area (CA) is an area designated by the Local Planning Authority as one of "special architectural or historic interest, the character or appearance of which it is desirable to preserve or enhance". Special controls exist regarding demolition and alteration of buildings; Listed Building Consent must also be obtained for any demolition, even if the building is not itself listed. Similarly, trees are given some protection with the requirement for the local authority to be given six weeks written notice before carrying out any work on trees; this gives the authority time to decide if a TPO is necessary.

2.5.3. It is not known if the trees are covered by a TPO, and this will need confirmation from South Holland District Council; the site is not within a CA.

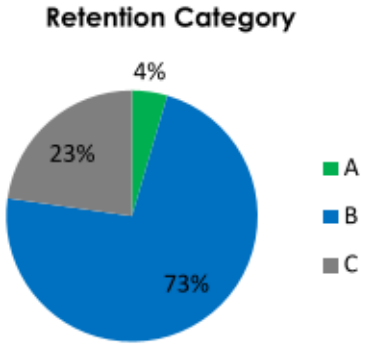
2.6. Brief Site Description

2.6.1. The site was unused and overgrown with scrub in the recent past. At the time of the inspection, the site had been cleared. The area is a rectangular plot aligned north to south with the southern end tapering to a narrow west aligned spur. There is no vegetation on site and the main trees potentially implicated in the proposed development are growing within the adjacent Sutton Bridge Golf Club. There is a belt of trees, mainly Lombardy Poplar, along the west boundary with more diverse tree species toward the southern end of the belt and aligned with the development plot.

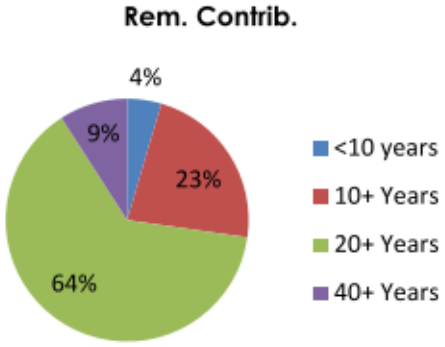
2.7. Tree Survey

2.7.1. The survey included a total of 22 individual trees potentially impacted by the development. Inspection of the trees followed a defined protocol as per BS 5837:2012 to ensure a systematic and consistent approach and assessment of the condition and value of the trees. Refer to comments in Appendix A Tree schedule, , and Appendix B for photographs.

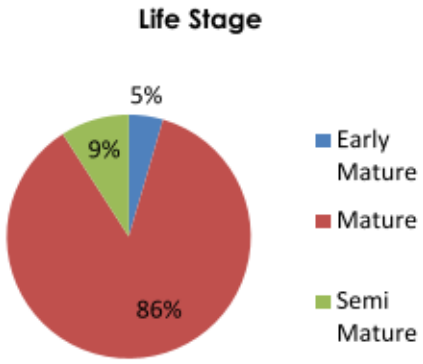
2.7.2. Refer to the figures below for the tree population summary, and Appendix A for individual tree details and Appendix C for tree photographs:



2.7.3. The tree population is weighted to category B trees with a smaller percentage of category A and C trees. The distribution of the categories reflects the prominence of the trees outside the site. Many of the trees within category B are Lombardy Poplar, and whilst they are prominent, they have been topped in the past and this management is very likely to lead to reduced safe useful life due to the tendency for this species to decay at the pruning wounds.



2.7.4. With reference to the figure above, two-thirds of the tree population are considered to be within the 20+ years remaining contribution category mainly a result of the past management to the Poplars as noted above (section 2.7.3.).



2.7.5. The tree ages are weighted heavily to the mature cohort and reflects the dominant species planted at the same time. There are few trees in the younger age groups to provide continuity of tree cover. However, it should be noted that this is a managed site, and it is likely that trees are planted as required.

3. Arboricultural Impact Assessment

3.1. Impact on Trees

3.1.1. Properly managed trees in urban environments make important contributions to the planning, design and management of sustainable, robust landscapes. They can make cities more pleasant, more diverse and more attractive and healthier places. International literature on the positive health impacts of urban trees is extensive and growing all the time and provides data under the following headings:

- Visual Appeal.
- Air Quality.
- Health & Well-Being.
- Cost Savings.
- Managing Stormwater.
- Property Values.
- Crime Reduction.
- Cooling Effects

3.1.2. Research indicates that even moderate increases in canopy cover within cities can aid adaption to the adverse effects predicted under a changing climate. However, anecdotal evidence suggests a decreasing trend in canopy cover over the past decades. The loss is despite the increasingly large pool of evidence on the social, environmental and economic benefits of trees and green infrastructure.

3.1.3. Given the wide-ranging benefits of urban trees, a number of authorities have set targets for total canopy cover (the area of leaves, branches, and stems of trees covering the ground when viewed from above). For example, Greater London has a target to increase

tree canopy cover (TCC) to 25% by 2025 (GLA, 2011).

3.1.4. In view of the importance being placed on not only maintaining trees but increasing the tree canopy cover, large scale developments in the urban environment should place major importance on both ensuring retention of trees but also including significant new planting to ensure both continuity and expansion of tree canopy cover.

3.1.5. As noted above, existing trees are an important factor on construction sites, whether on or near the working areas. BS5837:2012 – "Trees in relation to design, demolition and construction – Recommendations" is intended to assist decision-making with regard to existing and proposed trees in the context of design, demolition and construction. Root systems, stems and canopies, with allowance for future movement and growth, need to be taken into account.

3.1.6. BS5837:2012 - Trees in relation to design, demolition and construction – recommendations have been used to calculate the RPAs. It should be noted that this method is primarily used to calculate the volume of soil required to maintain healthy growth based on the trunk diameter of the tree. In practice, roots may extend beyond this area, and in some cases, the spread may be less. The majority of a tree's root system is generally considered to be in the top 600mm of the soil, extending radially in any direction for distances frequently in excess of the tree's height.

3.1.7. The proposed development is the construction of an open store with concrete yard for the storage of minerals. Refer to Table 3.7.1 below for a summary of impacts.

3.1.8. The development does not require the removal of any trees but there is some impact on the root protection areas of the majority of the trees; there is no impact on the crowns of the trees from future growth.

3.1.9. It is proposed to install a 2.4m palisade fence around the boundary and this requires specific methods to ensure there is no damage to tree roots.

3.2. Tree Protection Plan (TPP)

3.2.1. The TPP illustrates the location of any protective barriers and ground protection and must be displayed on site in a highly visible area so that all staff involved in the works have a point of reference for tree protection issues.

3.3. Construction Exclusion Zone (CEZ)

3.3.1. For the purpose of this report the CEZ can be defined as all the area within the RPAs of retained trees outside the work areas and the areas behind the tree protection fencing.

3.3.2. Site operations are not permitted in the CEZs without reference to the Arboricultural Method Statement in this report (refer to section 4 of this report).

3.4. Post Development Implications

3.4.1. Minor pruning of epicormic growth (basal/trunk shoots) may be required as future growth is likely to pass through the fence.

3.5. Threats to trees during development

3.5.1. The following information provides detail on how trees may be damaged during developments and an understanding of these mechanisms can help contractors avoid contributing to damage. These processes may be listed, in general terms as:

- Compaction of ground
- Covering rooting areas with impervious surfaces
- Excavations for foundations
- Excavation for service runs
- Alterations in ground level
- Access and movement of machinery
- Need for temporary site storage
- Crown damage by passage of high-sided vehicles

3.5.2. British Standard 5837 (1991) 'Trees in relation to construction' provided useful guidance for the assessment and formulation of measures for the mitigation of such threats. Using the experience gained from this Standard, it was revised and upgraded to 'Recommendation' status as British Standard 5837 'Trees in Relation to Construction' (2005). This British Standard was withdrawn on 30th April 2012 and replaced with Trees in Relation to Design, Demolition and Construction - Recommendations BS 5837: 2012. To assist in the prediction of the likely impact of development on retained trees, a model is used. This model is based on the age, vitality and size of individual specimens.

3.5.3. The British Standard relies heavily on the creation of a protected zone (RPA) around each tree. This area should be protected from disturbance "in order to avoid unacceptable damage to the tree as a result of severance or asphyxiation of the root system." The recommended minimum area (m^2) for each tree to avoid potentially harmful disturbance have been calculated for all the trees on site and entered into the tree schedule (Appendix A).

3.5.4. BS 5837: (2012) acknowledges that the shape of the tree root system may be affected by several factors and that the shape of the RPA should reflect this. Any deviation in the RPA from the original circular plot should take account of the following factors whilst still providing adequate protection for the root system:

a) the morphology and disposition of the roots, when influenced by past or present existing site conditions (e.g., the presence of roads, structures and underground apparatus);

b) topography and drainage;

c) likely tolerance of the tree to root disturbance or damage based on factors such as species, age, condition and past management.

3.6. Root Damage

3.6.1. Trees that are growing satisfactorily have achieved equilibrium with their surroundings. Any construction work that affects this equilibrium could be detrimental to health, future growth and the safety of the tree.

3.6.2. The part of the tree most susceptible to damage is the root system, which, because it is not immediately visible, is frequently ignored. Damage or death of the root system will affect the health, growth, life expectancy and safety of the rest of the tree. The effects of such damage may only become evident several years later.

3.6.3. The majority of a tree's root system is considered to be in the top 600mm of the soil, extending radially in any direction for distances frequently in excess of the tree's height. However, roots are adventitious and if conditions suitable for root development exist to a greater depth, the roots may extend to depths of three metres or more. Works within the root spread may damage the root system.

3.6.4. Close to the trunk are the main structural roots that develop in response to the tree's need for structural stability. Beyond these major roots, the root system rapidly subdivides into smaller diameter roots; off this main system a mass of fine roots develops.

3.6.5. Tree root systems can be damaged in a number of ways during construction works:

- **Root severance**. Severing of a root will destroy all parts of the root beyond that point. Even roots less than 10mm diameter may be serving a mass of fine roots over a large area. The larger the root severed, the greater the impact on the tree.

- **Damage to root bark**. The bark protects the root and is essential for further root growth; it is loosely attached and easily damaged. If damage extends around the whole circumference, the root beyond that point will be killed.

- **Compaction of the soil**. Compaction of the ground reduces the space between soil particles, particularly in clay soils. A single passage of heavy equipment or the storage of materials can cause considerable damage. Compaction can restrict or even prevent gaseous diffusion through the soil and thereby asphyxiate the roots. The roots must have oxygen for survival, growth and effective functioning. • Alterations in ground levels. Lowering the level will strip out the mass of roots near to the surface. Raising the ground levels will have the same effect as compaction. • Covering the rooting area with impervious surfaces. This prevents natural diffusion of gases between the soil and the atmosphere and can lead to oxygen depletion in the soil.

- **Direct toxicity of some materials**. For instance, petrol or diesel spillage or lime in cement can kill roots.

- **Wounding**. Minor wounds to root bark can allow pathogens into the tree root system that can lead to a further impairment of water absorption. The general debilitation of trees due to root severance can make them more susceptible to invasion by some decay fungi such as Armillaria spp.

- **Fine roots**. Damage to the fine roots by severance of a main root, or by compaction, or by alteration of levels, will prevent the fine roots absorbing the water and nutrients essential for tree growth. The effects of damage from different causes will be cumulative.

3.6.6. The effects of tree root damage may not be immediately apparent. If the root system is capable of rapid regeneration, the tree may recover without noticeable ill effects, though usually symptoms take several years to develop. The range of symptoms varies from minor branch-dieback to deterioration and ultimate tree death depending on the severity of the damage and the ability of the roots to regenerate.

3.6.7. The default position should be that structures are located outside the RPAs of trees that are to be retained. The cumulative effects of incursions into the RPA e.g., from excavations for utility apparatus are damaging and should be avoided. Where there is evidence that a tree has been previously subjected to damage by construction activity this should be taken into account when considering the acceptability of further activity within the RPA.

3.7. Arboricultural Impact Assessment Summary

3.7.1. Summary of impact

Impact	Reason	Low value (Cat C & U) trees	Moderate value (Cat B) trees	High value (Cat A) trees	Potential design & mitigation techniques
Trees to be removed	Building construction and/or surfacing	N/A	N/A	N/A	N/A
	Arboricultural reasons	N/A	N/A	N/A	N/A
Retained trees to be managed	Enabling works/space for development	N/A	Tree 2	N/A	Trees may require removal of basal and trunk growth to enable the installation of the palisade fence
Retained trees that may be damaged	Removal of existing structures	N/A	N/A	N/A	N/A
	Removal of existing surfacing	N/A	N/A	N/A	Vegetation has been cleared from the site.
	Material storage/washing areas/welfare areas	N/A	N/A	N/A	There is adequate space outside RPAs
	Temporary access to construction areas	N/A	N/A	N/A	There is an existing access to the site.
	Installation of new structures	Tree T004	Trees T005-T010	N/A	There is a very minor encroachment into the RPA of the trees from the storage facility, but it is not considered that there will be a high volume of significant roots present; excavation using hand tools required along the building footprint. New palisade fencing may impact on tree roots and the installation must be flexible to avoid roots.
	Installation of new surfacing	Tree T004	Trees T005-T015, T018	Tree T019	All excavations must be carried out using hand tools within the RPA. Concrete yard must be installed above the height of the highest root. Concrete must be porous within the RPAs
	Excavations or ground level changes	N/A	N/A	N/A	All excavations must be carried out using hand tools within RPAs.
	Installation of services*	N/A	N/A	N/A	Any services to be routed outside the RPAs and likely will be at the front of the dwelling
	Landscaping works	N/A	N/A	N/A	No landscaping proposed as industrial site.,

4. Arboricultural Method Statement

4.1. Phase 1: Undertake Approved Tree Works.

4.1.1. All tree works should be undertaken prior to any site works commencing. Motorised vehicles will be restricted to areas of existing compacted/hard surfaces, or where ground protection is in place, and should not be taken onto un-surfaced areas within the root protection areas (as shown on drawing TPP_WESTBANK_2). Refer to Table 4.1.2 below for tree works.

4.1.2. Tree work specification

Tree No.	Recommended Works
Trees 1-15 inclusive	Remove basal/epicormic growth encroaching over site boundary.

4.2. Phase 2

4.2.1. All materials storage and mixing will be confined to areas outside the RPAs of the retained trees. Where mixing of materials is undertaken close to the RPAs, this should be on an impervious surface with no run-off to prevent chemical contamination of the RPA.

4.2.2. It is recommended that the palisade fence is installed prior to construction of the storage facility as the fencing will provide protection to the tree trunks from machinery. However, ground protection will be required to prevent compaction of the soil within the RPAs of the off-site trees (refer to drawing TPP_WESTBANK_2 for locations of ground protection). All protection measures must be in place before any construction starts and must not be moved/removed during construction unless there is a requirement for access and only when alternative protection is agreed in writing. All protection measures must remain until completion of the scheme and no more construction activity is likely.

4.2.3. The palisade fence will require excavation for the support posts. A trial hole must be excavated using hand tools and if significant roots are found e.g., >25mm diameter, the position of the post must be moved to avoid the root. Post holes within the RPAs must be lined with an impermeable membrane to prevent leachates from poured wet concrete contaminating the plants.

4.3. Demolition

4.3.1. No demolition of existing buildings is required.

4.4. Foundations

4.3.1. Excavation for foundations of the main storage facility are on the periphery of a number of the RPAs. The foundation line of the walls on the west side should be excavated using hand tools to expose any roots that may be present. If roots are found, they should be

leanly cut using sharp tools a minimum of 200mm from the outer face of the excavation. In the event that the foundation is to be constructed using piles, the piling rig must operate on the east side of the building line and not enter the RPAs of the trees unless ground protection is in place. It is important that any ground protection is suitable for the anticipated loading. The proposed location of the piles should be excavated using hand tools to ensure no significant roots are present (>25mm diameter). Should significant roots be found, professional advice should be sought to determine if the roots could be severed without a long-term impact on the trees. In the event that the root has to be retained, the design should be sufficiently flexible that the pile can be relocated a short distance to clear the root.

4.4. Excavations

4.4.1. Any excavation/changes in surface within the RPAs **must** be carried out with care as set out in Appendix B section 1.5. Whilst the volume of roots within the RPA may vary, the indicative RPA must be used to determine where hand tools and supervised excavation are essential. All excavations must be carried out using hand tools (spades, forks and trowels) and taking care not to damage bark and wood of the roots.

4.5. New Surfacing

4.5.1. It is proposed that the site is covered in concrete to provide a stable surface for plant and storage. Conventional surfacing installation by excavating and compacting a sub-base is not acceptable in the RPAs as it can damage roots and compact the soil leading to potential long-term decline of retained trees. To protect the roots and rooting environment the proposed new surface within the RPAs must be load bearing to prevent compaction and provide adequate permeability for water and gases to support living roots. The main systems are:

- a three-dimensional cellular confinement system filled with washed stone laid directly on the soil surface (refer to Appendix B section 1.7 & Figs 4 & 5). The sub-base must be installed at the existing ground level within the RPAs to prevent damage to tree roots.
- Concrete slabs cast directly onto the soil surface; and,
- Surfacing supported above the soil surface on top of piles, pads, or posts.

The design of the chosen method is an engineering issue that will account for the bearing capacity of the soil, the anticipated loading and the frequency of loading. The detail of the chosen product and specification is to be provided by an appropriate professional in the field. However, as the proposed new surface covers up to 50% of the trees RPA, the final wearing surface of the proposed yard must be porous within those RPAs.

4.5.2. The edge retention for the yard surface must be based on a no-dig design and if the edge retention needs to be battered down to lower ground levels, a permeable soil fill can be used.

4.5.3. It should be noted that cement is toxic to plants and an impermeable membrane must be installed to prevent leachate from poured wet concrete contaminating plants.

4.6. Contaminants

4.6.1. The proposed site is for the storage of minerals and if the materials stored have potential to contaminate the soil environment, measure must be in place to ensure drainage is away from the RPAs and any potential flooding can be intercepted.

Other tree related site works

4.6.1. **Site supervision:** Site visits by a competent arboriculturalist may be required by the local planning authority to advise on any tree issues or modifications that may arise. The developer must ensure that all conditions of the arboricultural method statement and any amendments are known and fully understood by all site personnel.

4.7 General

4.7.1. **Limitations of report:** This report is intended to highlight the potential for damage to the retained tree population from the proposed development and provide guidance on how to avoid or minimise that potential. The content will require amending as details of the construction method for the drive becomes available.

4.7.2. **Arboricultural Standards:** Any tree works should be done in accordance with the British Standard Recommendations for Tree work, BS 3998:2010 as modified by later research. Works should be undertaken by properly qualified and experienced tree contracting company as recommended by a local authority or one approved by the Arboricultural Association. A Register of Contractors is available from:

The Arboricultural Association
The Malthouse
Stroud Green
Standish
Stonehouse
Gloucestershire GL10 3DL
UKTel +44 (0) 1242 522152
Fax +44 (0) 1242 577766
Email: admin@trees.org.uk.

4.7.3. Statutory wildlife implications: Wildlife in this country is afforded protection under the Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000. Statutory protection is given to birds, bats and other species that inhabit trees. Tree work is governed by these statutes and advice should be sought from an ecologist before undertaking any works that may constitute an offence.

- If the intention is to complete tree work between the 1st of March and the end of August, a due diligence check for nesting birds must be completed before work starts

in order to comply with the Wildlife & Countryside Act 1981. Arborists should record such checks in their site-specific risk assessment. If active nests are found work should not take place until the young have fledged.

- A due diligence check for bats and likely habitats must be completed before work starts in order to comply with the Wildlife & Countryside Act 1981. Arborists should carry out and record such checks in line with BS8596:2015 Surveying for bats in trees and woodland in their site-specific risk assessment. If bats or potential roosting features are found work must not start until an appropriately licenced bat handler has been engaged.

Report: Graham Causey *B. Sc (Hons), F. Arbor.A. R.F.S Cert Arb. Lantra accredited professional tree Inspector*

Checked by: Fiona *Critchley MICFor*
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APPENDIX A TREE SCHEDULE

Tree No.	Species	Height (m)	DBH (mm)	Crown radius (m)				Lowest Branch & Direction	Lower crown height (m)	Life stage	General observations	Est. Rem'ing contrib'n	BS Cat	RPA-R (m)
				N	E	S	W							
T001	Lombardy Poplar *(Populus nigra italica)*	30.0	Num Stems: 1, Ave Diam: 770mm	3.0	4.0	3.0	3.0	3(E)	2.5	Mature	Moderate ivy Light deadwood Prominent	20+ Years	**B2**	Radius: 9.2m. Area: 266 sq m.
T002	Lombardy Poplar	30.0	Num Stems: 1, Ave Diam: 640mm	3.0	4.0	3.0	3.0	3(S)	2.0	Mature	Epicormics Decay in surface roots Moderate ivy Light deadwood Prominent	20+ Years	**B2**	Radius: 7.7m. Area: 186 sq m.
T003	Hawthorn *(Crataegus sp.)*	7.0	Num Stems: 5, Ave Diam: 658mm	3.5	3.0	3.0	3.0	1.5(NE)	0.5	Mature	Heavy ivy restricting inspection Multi-stemmed Moderate deadwood Crown Suppressed by ivy	10+ Years	**C2**	Radius: 7.9m. Area: 196 sq m.
T004	Lombardy Poplar	18.0	Num Stems: 1, Ave Diam: 800mm	4.0	3.0	2.0	3.0	1(SW)	1.5	Mature	Epicormics Light deadwood Topped Sparse crown Prominent	10+ Years	**C2**	Radius: 9.6m. Area: 290 sq m.
T005	Lombardy Poplar	20.0	Num Stems: 1, Ave Diam: 1000mm	4.0	4.0	3.0	3.0	3(E)	2.0	Mature	Epicormics Topped Heavy ivy Light deadwood Prominent	20+ Years	**B2**	Radius: 12.0m. Area: 452 sq m.
T006	Lombardy Poplar	20.0	Num Stems: 1, Ave Diam: 900mm	5.0	4.0	3.0	5.0	2.5(SE)	3.0	Mature	Extensive surface roots Topped Light ivy Light deadwood Bark wounds on exposed roots Prominent	20+ Years	**B2**	Radius: 10.8m. Area: 366 sq m.
T007	Lombardy Poplar	20.0	Num Stems: 1, Ave Diam: 1000mm	5.0	3.0	2.0	3.0	3(SW)	1.0	Mature	Epicormics Topped Heavy ivy Light deadwood Dbh estimated Prominent	20+ Years	**B2**	Radius: 12.0m. Area: 452 sq m.
T008	Lombardy Poplar	20.0	Num Stems: 1, Ave Diam: 1090mm	2.0	3.0	2.0	3.0	3(SW)	1.0	Mature	Topped Heavy ivy Light deadwood Prominent	20+ Years	**B2**	Radius: 13.1m. Area: 539 sq m.

Tree No.	Species	Height (m)	DBH (mm)	Crown radius (m)				Lowest Branch & Direction	Lower crown height (m)	Life stage	General observations	Est. Rem'ing contrib'n	BS Cat	RPA-R (m)
				N	E	S	W							
T009	Lombardy Poplar	20.0	Num Stems: 1, Ave Diam: 690mm	4.0	3.0	1.0	3.0	4(E)	5.0	Mature	Topped Heavy ivy Light deadwood Prominent	20+ Years	**B2**	Radius: 8.3m. Area: 216 sq m.
T010	Lombardy Poplar	18.0	Num Stems: 1, Ave Diam: 890mm	2.0	3.0	3.0	3.0	4(E)	5.0	Mature	Topped Dbh estimated Heavy ivy Light deadwood Damaged surface roots Prominent	20+ Years	**B2**	Radius: 10.7m. Area: 360 sq m.
T011	Lombardy Poplar	20.0	Num Stems: 1, Ave Diam: 690mm	5.0	4.0	3.0	3.0	1(E)	1.0	Mature	Topped Heavy ivy Light deadwood Bark wounds on exposed roots Prominent	20+ Years	**B2**	Radius: 8.3m. Area: 216 sq m.
T012	Lombardy Poplar	20.0	Num Stems: 1, Ave Diam: 1000mm	4.0	3.0	4.0	3.0	3(SE)	5.0	Mature	Topped Heavy ivy Light deadwood Prominent	20+ Years	**B2**	Radius: 12.0m. Area: 452 sq m.
T013	Lombardy Poplar	17.0	Num Stems: 1, Ave Diam: 830mm	4.0	2.0	1.0	2.0	3(N)	4.0	Mature	Topped Heavy ivy in crown Light deadwood Roots damaged by adjacent ground work Prominent	10+ Years	**B2**	Radius: 10.0m. Area: 314 sq m.
T014	Lombardy Poplar	18.0	Num Stems: 1, Ave Diam: 800mm	1.0	3.0	2.0	2.0	3(S)	5.0	Mature	Topped Moderate ivy in crown Light deadwood Prominent	20+ Years	**B2**	Radius: 9.6m. Area: 290 sq m.
T015	Lombardy Poplar	20.0	Num Stems: 1, Ave Diam: 900mm	1.0	4.0	3.0	3.0	3(SW)	5.0	Mature	Topped Light ivy in crown Light deadwood Decay pockets Prominent	20+ Years	**B2**	Radius: 10.8m. Area: 366 sq m.
T016	Norway Maple *(Acer platanoides)*	14.0	Num Stems: 1, Ave Diam: 590mm	6.0	7.0	7.0	3.0	2(SE)	4.0	Mature	Moderate deadwood Suppressed by adjacent tree Cavity forming at old below main fork Prominent	20+ Years	**B2**	Radius: 7.1m. Area: 158 sq m.

Tree No.	Species	Height (m)	DBH (mm)	Crown radius (m)				Lowest Branch & Direction	Lower crown height (m)	Life stage	General observations	Est. Rem'ing contrib'n	BS Cat	RPA-R (m)
				N	E	S	W							
T017	Fir *(Abies sp.)*	30.0	Num Stems: 1, Ave Diam: 800mm	5.0	3.0	3.0	3.0	3(E)	2.0	Mature	Light ivy Moderate deadwood Crown dieback Upper crown sparse Prominent Peg when needle pulled off, needles flat 2 white stripes	10+ Years	**B2**	Radius: 9.6m. Area: 290 sq m.
T018	Scots Pine *(Pinus sylvestris)*	6.0	Num Stems: 1, Ave Diam: 260mm	3.0	2.5	2.0	3.5	1(S)	1.0	Semi Mature	Light deadwood Bowed leaning trunk	40+ Years	**B2**	Radius: 3.1m. Area: 30 sq m.
T019	Scots Pine	10.0	Num Stems: 1, Ave Diam: 390mm	4.0	4.0	4.0	4.0	2(E)	1.0	Early Mature	Good form Full healthy crown	40+ Years	**A2**	Radius: 4.7m. Area: 69 sq m.
T020	Hawthorn	5.0	Num Stems: 3, Ave Diam: 520mm	3.0	2.0	4.0	2.0		1.0	Mature	Hanging broken branches Heavy ivy dominating crown Light deadwood Low vitality Ivy prevents inspection	<10 years	**C2**	Radius: 6.2m. Area: 121 sq m.
T021	Laurel Cherry *(Prunus laurocerasus)*	5.0	Num Stems: 5, Ave Diam: 225mm	6.0	2.0	3.0	5.0		0.0	Mature	Multi-stemmed at ground level Significant lean on trunks Unbalanced crown	10+ Years	**C2**	Radius: 2.7m. Area: 23 sq m.
T022	Wild Cherry *(Prunus avium)*	4.0	Num Stems: 1, Ave Diam: 10mm	1.0	1.0	1.0	1.0			Semi Mature	Twin-stemmed at ground level No particular amenity value	20+ Years	**C2**	No RPA.

KEY

Y = Young
SM = Semi-mature
EM = Early-mature
M = Mature
OM = Over-mature
V = Veteran

H = Hedge
G = Group
B = Shrubs
K = Small tree
W = Woodland
RPA-R (m) = RPA of radius x metres

TREE QUALITY ASSESSMENT CASCADE CHART

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

APPENDIX B TREE PROTECTION

1.1. Pre-commencement site meeting.

1.1.1. A pre-commencement site meeting is advised prior to any works commencing on site, to agree all the approved processes with the relevant concerned parties.

1.2. Protective fencing and ground protection.

1.2.1. All trees to be retained on site should be protected by barriers and ground protection where applicable. Barriers should be in place before any materials or machinery is brought onto site. Once in place, barriers and ground protection should be considered sacrosanct and should not be altered or removed without prior recommendation by an arboriculturist and approval of the local planning authority. Barriers should be fit for excluding construction activity and appropriate to the degree and proximity of work taking place around the retained tree(s). Barriers should be maintained to ensure that they remain rigid and complete.

1.2.2. The protective fencing is to be erected prior to any site works or demolition works.

1.2.3. The barrier is to comprise of a vertical and horizontal framework (Figure 1 below), well braced to resist impacts, with vertical tubes spaced at a maximum interval of 3m. Weldmesh panels, such as Heras, should be securely fixed with wire or scaffold clamps to this framework. Weldmesh panels on rubber or concrete feet are not resistant to impact and should not be used. Care should be exercised when locating the vertical poles to avoid underground services and, in the case of the bracing poles, also to avoid contact with structural roots. If the presence of underground services precludes the use of driven poles, an alternative specification should be prepared in conjunction with the project arboriculturist that provides an equal level of protection. Such alternatives could include the attachment of the panels to a freestanding scaffold support framework.

1.2.4. Where retained trees are near the existing buildings, a higher specification hoarding will be required to prevent damage from falling rubble. In place of the weldmesh, panels solid hoarding should be used, for example, scaffold boards.

1.2.5. Where the site circumstances and associated risk of damaging incursion into the RPA do not necessitate the default level of protection, an alternative specification should be prepared by the project arboriculturist and, where relevant, agreed with the local planning authority. For example, 2 m tall, welded mesh panels on rubber or concrete feet might provide an adequate level of protection from cars, vans, pedestrians and manually operated plant. In such cases, the fence panels should be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The distance between the fence couplers should be at least 1 m and should be uniform throughout the fence. The panels should be supported on the inner side by stabilizer struts, which should normally be attached to

a base plate secured with ground pins (Figure 2 below). Where the fencing is to be erected on retained hard surfacing or it is otherwise unfeasible to use ground pins, e.g., due to the presence of underground services, the stabilizer struts should be mounted on a block tray

1.2.6. It is advised that a plan be pinned up on site in highly visible areas such as in the site huts, so that all ground staff involved in the demolition and construction works have a point of reference for tree protection issues. All demolition and construction workers should be briefed on the importance of tree protection prior to works commencing. Special attention must be paid to ensure that protective fencing remains rigid and complete during all works.

1.2.7. Where it is agreed that vehicular or pedestrian access for construction purposes is necessary within the RPA, ground protection measure will be required to prevent damage to the soil structure within the RPA.

1.2.8. For pedestrian access within the RPA, the installation of ground protection in the form of a single thickness of scaffold boards over a compressible layer laid onto a geotextile, or supported by scaffold, is likely to be acceptable

1.2.9. For wheeled or tracked vehicle, access within the RPA an engineer should design the ground protection to accommodate the likely loading and may involve the use of proprietary systems or reinforced concrete slabs. The structure must use a no dig design (see methodology described in 1.7 below) to prevent root severance and must prevent localised soil compaction by distributing the load across the track width. Such a system may include the use of three-dimensional cellular confinement systems (CCS) as a component of the sub-base, to act as a load suspension layer

1.2.10. New permanent hard surfacing should not cover more than 20% of the RPA or be wider than 3m within it; it should be constructed to be permeable to moisture and gas.

1.3. Construction exclusion zone

1.3.1. Once the construction exclusion zone (CEZ) has been protected by barriers and/or ground protection, demolition/construction can take place

Inside the Construction Exclusion Zone (CEZ) of the protective fencing, the following prohibitions shall apply:

- No mechanical digging or scraping
- No hand digging
- No storage of plant, equipment or materials
- No vehicular or plant access
- No fire lighting

- No washing down of vehicles or machinery
- No handling, discharge or spillage of any chemical substance, including cement washings
- No action likely to cause localised waterlogging
- No change in ground levels
- No construction of a hard surface
- No earthworks

1.3.3. To inform site personnel of the purpose of the fencing, information notices shall be fixed to the fencing at 5m intervals. These notices shall be of all-weather construction and shall be in the form of the example provided at Figure 4 below and replaced as and when necessary.

1.3.4. In addition to the above, further precautions are necessary adjacent to trees outside the CEZ:

- Materials that will contaminate the soil, e.g., concrete mixing, diesel soil and vehicle washings, should not be discharged within 10 metres of the tree stem. This should take into consideration the topography of the site and slopes to avoid materials such as concrete washings running towards trees.

- Fires should not be lit in a position where their flames can extend to within 5m of foliage, branches or trunk. This will depend on the size of the fire and the wind direction.

- Notice boards, telephone cables or other services should not be attached to any part of the tree.

1.4. New Services

1.4.1. **Service connections:** The location of all new service routes should ideally be outside of the root protection zones of the trees to be retained to avoid damage to tree roots. All proposed service installations should be carried out in accordance with the guidelines set out in NJUG Publication No.10, and Section 11.3.5 and 11.7 of BS5837:2005. Great care should be taken to preserve and work around roots greater than 25mm in diameter, and clusters of smaller roots avoiding damage to bark. Where it is necessary to sever roots greater than 25mm in diameter, arboricultural advice must be sought. Where smaller roots must be severed, they should be cut back cleanly using secateurs or a sharp pruning saw. Where possible, services laid through protected areas need to be installed at a depth preferably not less than 750mm deep in order to preserve the maximum number of roots and avoid conflicts between the tree roots and the utility service run. The trench should be kept as narrow as possible to reduce the potential amount of root severance. Backfilling of trenches should be carried out using the excavated soil, which should be worked in around roots and lightly "tamped" not compacted and preserving the original soil profile. The backfill should be left proud of surrounding levels to allow for settlement. Trenches must not be left open overnight, and arboricultural supervision should be provided during excavation of trenches through protected zones. If the trench is to remain open for any period during the day to prevent

the roots from drying out, it is advised that moist Hessian sacking be wrapped around the exposed roots, and/or trench to prevent desiccation from occurring. All existing site services that are already within the root protection areas that are to be made redundant will still need to comply with the above in order to prevent any damage to roots within these areas.

1.5. Excavating in RPAs

1.5.1. All excavations must be carried out using hand tools (spades, forks and trowels) and taking care not to damage bark and wood of the roots. It is acceptable to use a pneumatic hammer carefully to break up any existing hard surface for removal. Specialist tools (air spade) may be suitable in certain situations to remove soil from around the roots. All soil removal must be undertaken with care to minimise the disturbance of roots beyond the immediate area of the excavation. Where a mass of flexible roots is encountered, it may be possible either to displace the roots to another location temporarily or permanently to avoid areas of excavation. Exposed roots to be removed should be cut cleanly with some sharp saw or secateurs approximately 20cm back from the face of the final excavation. Roots that are exposed temporarily should be protected from drying out, direct sunlight and extremes of temperature by suitable covering. Roots greater than 2.5cm diameter should be retained where possible; roots up to 10cm diameter should only be cut in exceptional circumstances and roots greater than 10cm should only be cut after consultation with the appropriate supervising officer.

1.5.2. Working within RPAs requires a high level of care to ensure the long-term potential of the trees. Qualified supervision is vital to minimise the risk of misinterpretation. Site personnel must be properly briefed before work commences and ongoing work should be regularly inspected by an arboriculturist to confirm compliance by the contractor.

1.6. Removing Surfacing in RPAs

1.6.1. Roots are frequently found beneath or adjacent to existing surfacing or built structures and care is needed. Damage to the roots may be by direct physical damage or compaction of the soil from the weight of plant and machinery or repeated pedestrian movement. This is generally not a problem whilst surfacing is in place as the load is spread and additional protection is not required. However, once the existing surface is removed and the soil below exposed significant damage can occur to the soil structure and directly to the roots in a very short time. The following rules must be followed:

1. No vehicular activity or repeated pedestrian access into the RPAs unless on existing hard surfacing or custom designed ground protection, this must be designed for anticipated loads.
2. Regular vehicle and pedestrian access routes must be protected from compaction by temporary ground protection.

3. RPAs exposed by the works must be protected as set out in BS 5837:2012 until there is no risk of damage from construction activity

1.6.2. Appropriate tools for manually removing debris may include a pneumatic breaker/drill, crow bar, sledgehammer, pick, mattock, shovel, spade, trowel, fork and wheelbarrow. Secateurs and a bow saw must be available to deal with any exposed roots that have to be cut. Machines with a long reach may be used if they can work from outside RPAs or from areas protected by ground protection designed for the loading within the RPA. Debris to be removed from RPAs manually must be moved across existing hard surfacing or temporary ground protection to prevent compaction damage. If possible, leaving below ground structures in place should be considered if their removal may cause excess root disturbance.

1.7. Installation of new Surfacing in RPAs

1.7.1. New surfacing is potentially damaging to trees as it may require changes to existing levels, result in localised soil structure damage and disrupt the exchange of water and gases in and out of the soil. Mature or older trees are more sensitive to this type of damage than younger trees. Potential adverse impacts on the trees can be minimised by limiting the extent of these changes. The most suitable surface will be porous to allow the relatively free movement of gas and water and load spreading to limit compaction damage. The actual specification is an engineering issue that must be considered in the context of the load-bearing capacity of the soil; this element requires specialised input from the appropriate professional.

1.7.2. The actual location and depth of roots is unpredictable and will only become clear once excavation starts and following the guidance in section 1.5 above. Ideally, all new surfacing in the RPAs will be no dig, but this is rarely possible on undulating surfaces. New surfacing generally requires an evenly graded sub-base which can be made up to any high points with granular, permeable fills such as crushed stone or sharp sand; this sub-base must not be compacted as in a normal installation. Some limited excavation is usually necessary to achieve this and need not be damaging to the tree if carried out with care and avoiding cutting large roots. Tree roots generally do not occupy the top 5cm of soil, so the removal of a turf layer need not cause root damage. It may be possible to dig to a greater depth with care and dependant on local conditions. On undulating surfaces, finished levels must be carefully planned and flexible enough to allow on-site adjustment if excavations reveal large roots. Roots of 2.5cm diameter and less can normally be cut without a significant impact on the tree and the minimal 5cm depth can be used. If roots larger than 2.5cm diameter are encountered and it is considered inappropriate to cut them by a suitably qualified professional, the surrounding levels must be adjusted to take into account the high points by infilling with a suitable material.

1.7.3. Generally, the construction of hard surface access within the root protection area is to be that of a 'no-dig' design to avoid root loss due to excavation. In addition, the structure of the hard surface should be designed to avoid localised compaction,

evenly distributing the carried weight over the track width and wheelbase of any vehicles that will use the access. The design will be based on a cellular confinement system as an integral component of the sub-base, to act as a load suspension layer.

1.7.4. The finished surface will be either a granular material, permeable and gas-porous finished surface (wearing course) to allow moisture infiltration and gaseous diffusion. It is essential to maintain adequate supplies of water and oxygen for trees through the soil. Porosity is important particularly where the new hard surface covers an area of previously unmade ground, under which tree roots may have developed preferentially.

1.7.5. No-fines granular materials should be used wherever fill or a sub-base is required to help to ensure adequate gaseous diffusion. Excess water in the root protection area should be avoided, particularly on clay soils where water logging can occur. In these cases, the hard surface should slope away from the tree to avoid ponding. Provided surface water is not liable to be contaminated by salt or toxic run-off from oil or petrol, a permeable surface should be employed.

1.7.6. Washed gravel

Washed gravel retains its porosity unless excessively consolidated, and is particularly useful where changes of level occur, or an irregular shape is needed around the stem of a tree. Gravel is easily renewed or topped up. Although weeds may become established, they can be controlled by chemical or mechanical means. However, gravel is rarely suitable for use where there is vehicle or pedestrian traffic for example, in residential areas. Materials with high fines content, such as binding gravels or hogging, should not be used due to their almost impermeable texture when consolidated

1.7.7. Paving slabs and block pavers

Paving slabs and block pavers are available with built in infiltration spaces between the slabs or blocks. These are ideal, though they should be laid dry-jointed on a sharp sand foundation to allow air and moisture to penetrate to the rooting area.

1.7.8. Graded Soil

Sufficient spoil shall be placed along the edge of the area to receive Geoweb, suitably graded away from the works in order that it may be pulled in later. This eliminates the need to transport soil over the finished surface. The spoil (e.g., Heicom sand) shall be graded into the finished structure at the end of the scheme.

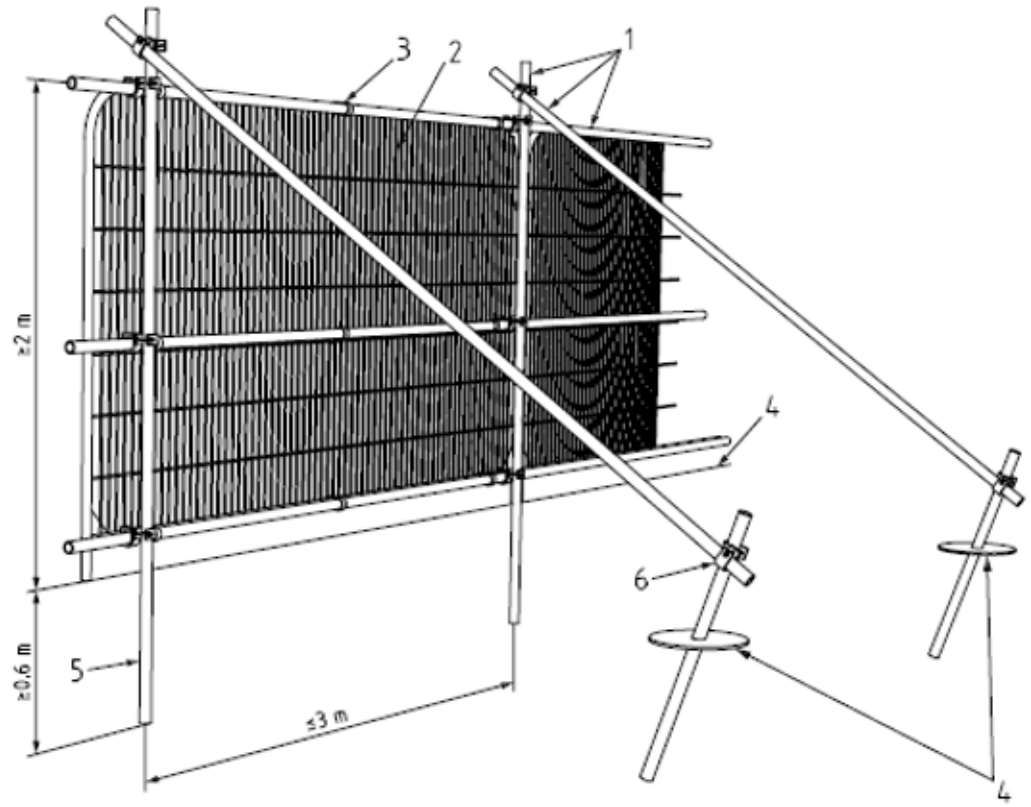
1.7.9. Construction

Refer to Fig 4 for a general overview of a typical installation with porous tarmac (illustration courtesy of Geosynthetics Ltd). The depth of CellWeb will be dependent on the expected loads and should be based on the manufacturer's recommendation.

1.8. Soft Landscaping

1.8.1. Soft landscaping includes the re-profiling of existing soil levels and covering the soil surface with new plants or an organic covering (mulch). It does not include the construction/installation of solid structures or compacted surfacing. No significant excavation or cultivation, especially by rotovators, should be carried out within the RPAs. Where new designs require levels to be increased to tie in with new structures or the removal of an existing structure has left a void below the surrounding ground level, good quality and relatively permeable top soil should be used for the fill. It should be firmed into place but not over compacted in preparation for turfing or careful shrub planting.

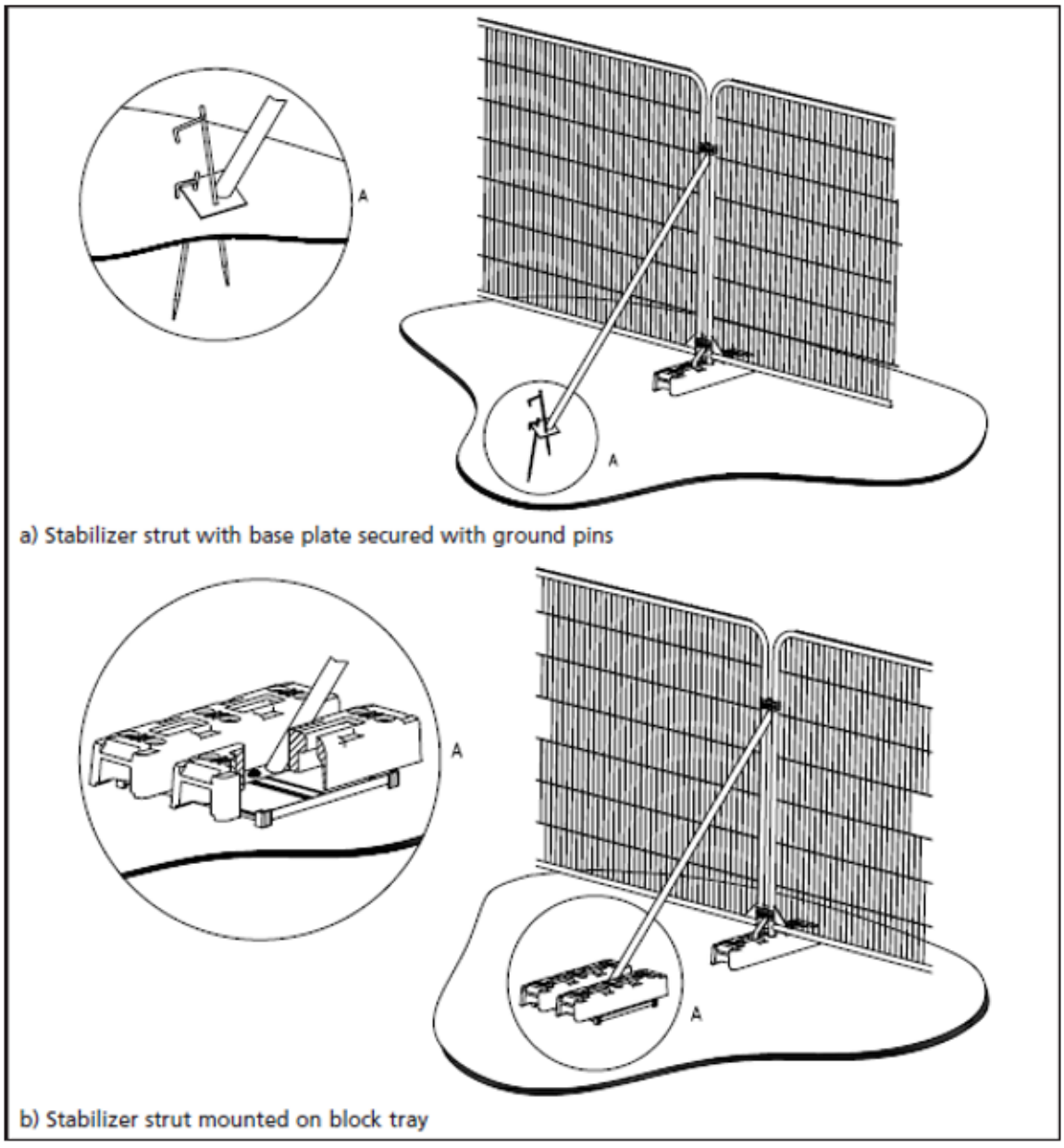
Figure 1: Tree Protective fencing



Key

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

Figure 2: Tree Protective fencing (alternative)



a) Stabilizer strut with base plate secured with ground pins

b) Stabilizer strut mounted on block tray

Figure 3: Example of warning notice



Figure 4: Cellular Confinement System

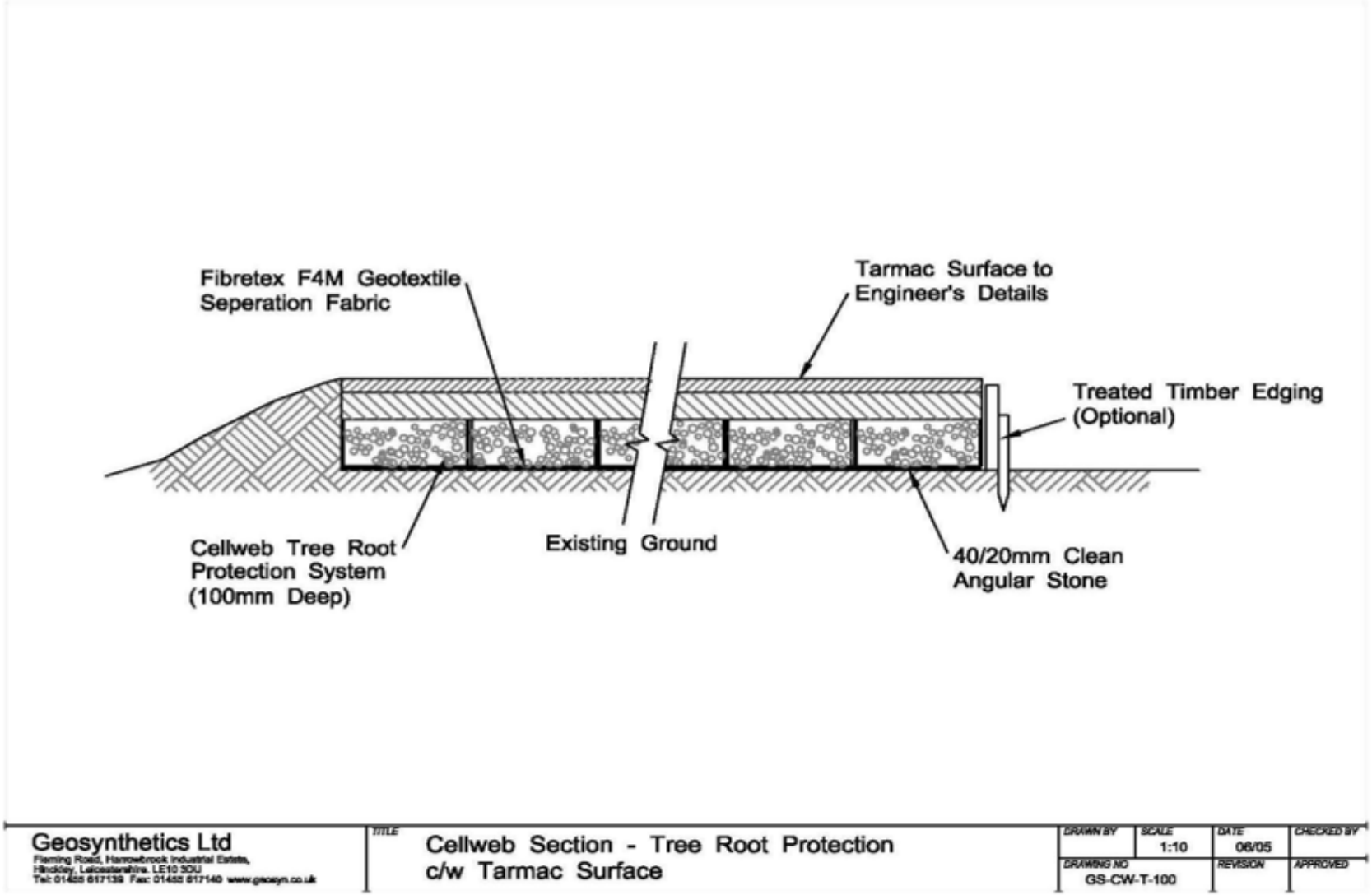




Fig 5: EXAMPLE OF INSTALLATION OF CELLULAR CONFINEMENT SYSTEM

APPENDIX C TREE PHOTOGRAPHS

Ref.	Species	Full Structure	Retention Category	Photo
T001	Lombardy Poplar *(Populus nigra italica)*	Tree	**B2**	
T002	Lombardy Poplar *(Populus nigra italica)*	Tree	**B2**	

Ref.	Species	Full Structure	Retention Category	Photo
T003	Hawthorn *(Crataegus sp.)*	Tree	**C2**	
T004	Lombardy Poplar *(Populus nigra italica)*	Tree	**C2**	

Ref.	Species	Full Structure	Retention Category	Photo
T005	Lombardy Poplar *(Populus nigra italica)*	Tree	**B2**	
T006	Lombardy Poplar *(Populus nigra italica)*	Tree	**B2**	

Ref.	Species	Full Structure	Retention Category	Photo
T007	Lombardy Poplar *(Populus nigra italica)*	Tree	**B2**	
T008	Lombardy Poplar *(Populus nigra italica)*	Tree	**B2**	See below RHS

Ref.	Species	Full Structure	Retention Category	Photo
T009	Lombardy Poplar *(Populus nigra italica)*	Tree	**B2**	
T010	Lombardy Poplar *(Populus nigra italica)*	Tree	**B2**	

Ref.	Species	Full Structure	Retention Category	Photo
T011	Lombardy Poplar *(Populus nigra italica)*	Tree	**B2**	
T012	Lombardy Poplar *(Populus nigra italica)*	Tree	**B2**	

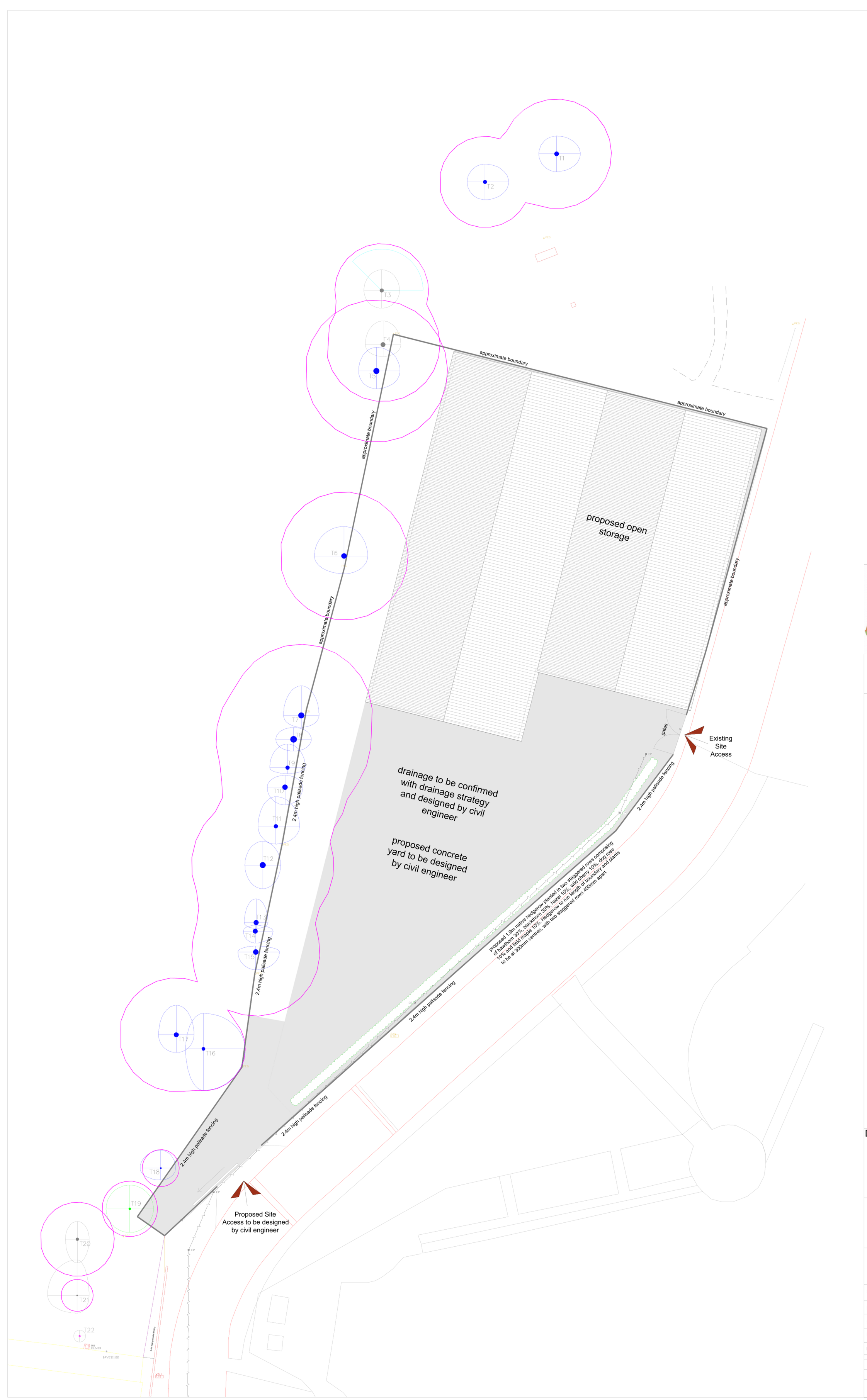
Ref.	Species	Full Structure	Retention Category	Photo
T013	Lombardy Poplar *(Populus nigra italica)*	Tree	**B2**	
T014	Lombardy Poplar *(Populus nigra italica)*	Tree	**B2**	

Ref.	Species	Full Structure	Retention Category	Photo
T015	Lombardy Poplar *(Populus nigra italica)*	Tree	**B2**	
T016	Norway Maple *(Acer platanoides)*	Tree	**B2**	 

Ref.	Species	Full Structure	Retention Category	Photo
T017	Fir *(Abies sp.)*	Tree	**B2**	
T018	Scots Pine *(Pinus sylvestris)*	Tree	**B2**	

Ref.	Species	Full Structure	Retention Category	Photo
T019	Scots Pine *(Pinus sylvestris)*	Tree	**A2**	
T020	Hawthorn *(Crataegus sp.)*	Tree	**C2**	

Ref.	Species	Full Structure	Retention Category	Photo
T021	Laurel Cherry *(Prunus laurocerasus)*	Tree	**C2**	
T022	Wild Cherry *(Prunus avium)*	Tree	**C2**	



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KEY

BS CAT A

BS CAT B

BS CAT C

ROOT PROTECTION AREA (RPA)

SHADE SEGMENT

DRAWING TITLE

TREE CONSTRAINTS PLAN

PROPOSED SITE

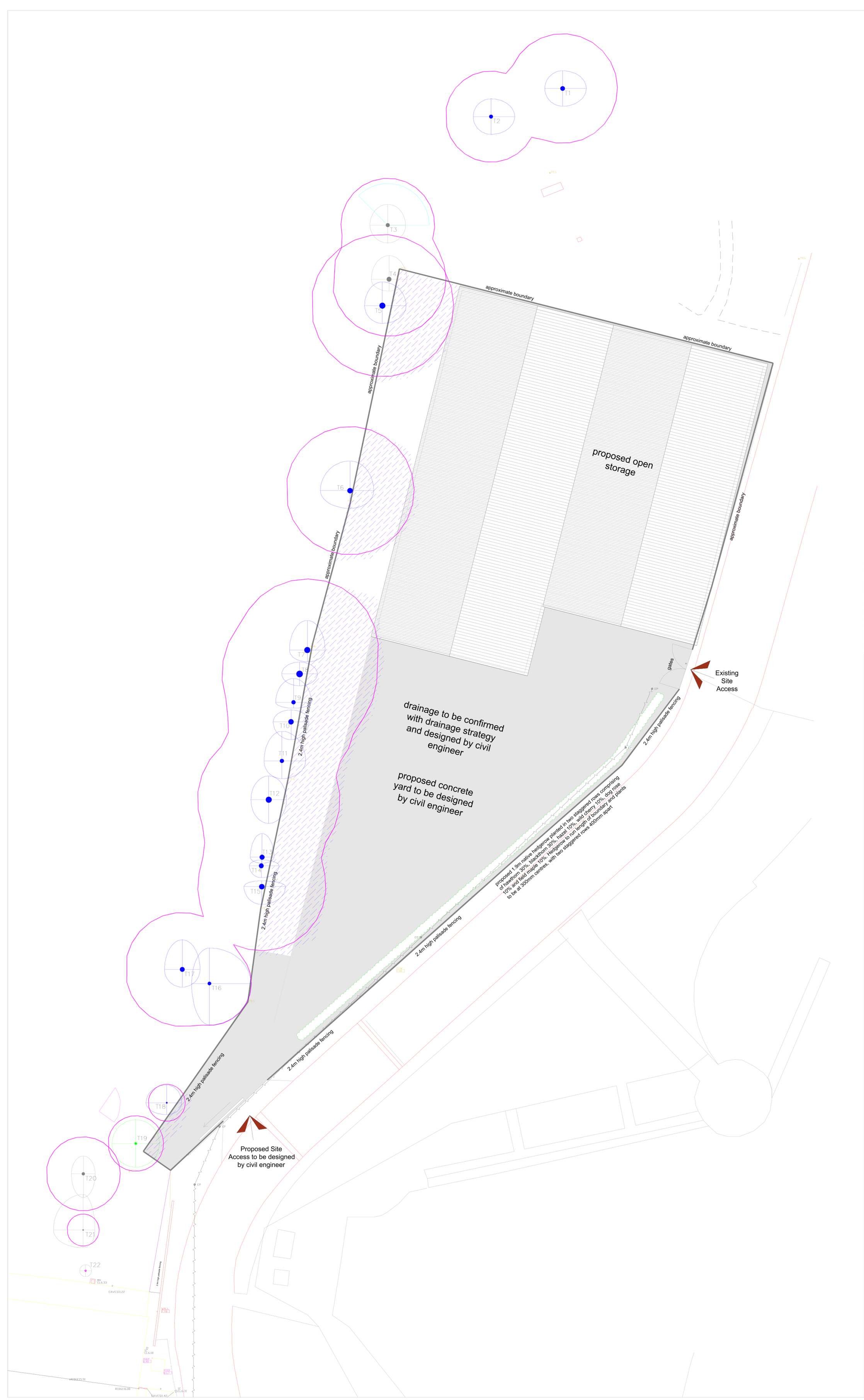
PROJECT

WEST BANK
SUTTON BRIDGE

CLIENT

SCALE	1:200@A0		
DATE OF ISSUE	NOVEMBER 2023		
SURVEYOR	GMC	DATE	SEP' 23
DRAWN BY	GMC		
DRAWING No.	TCP_WESTBANK_1		REV

No.	DATE	REVISION



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KEY

BS CAT A

BS CAT B

BS CAT C

ROOT PROTECTION AREA (RPA)

SHADE SEGMENT

GROUND PROTECTION & SPECIAL PRECAUTIONS

DRAWING TITLE

TREE PROTECTION PLAN
PROPOSED SITE

PROJECT

WEST BANK
SUTTON BRIDGE

CLIENT

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DATE OF ISSUE	NOVEMBER 2023		
SURVEYOR	GMC	DATE	SEP' 23
DRAWN BY	GMC		
DRAWING No.	TPP_WESTBANK_2		REV

No.	DATE	REVISION