



ARBORICULTURAL IMPACT ASSESSMENT & METHOD STATEMENT

SITE LOCATION

Woodside Conference Centre,
Kenilworth

ISSUE DATE

29th June 2023

SEED REF

1400-AMS-V1-D

CLIENT

Bovis Homes

ARBORICULTURAL CONSULTANCY

SEED-ARB.CO.UK

DOCUMENT CONTROL

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Any alteration to the application site or development proposals could change the current circumstances and may invalidate this report and any recommendations made.

The tree survey was a preliminary assessment from ground level and observations were made solely from visual inspection for the purposes of an assessment relevant to planning and development. This report is not a tree risk assessment and should not be construed as such. While every attempt has been made to provide a realistic and accurate assessment of the trees' condition at the time of inspection, it may have not been appropriate, or possible, to view all parts or all sides of every tree to fulfil the assessment criteria of a tree risk assessment.

This is not an ecological report. The Wildlife and Countryside Act 1981 (as amended) and the Conservation of Species and Habitat Regulations 2017 make it an offence to disturb nesting birds or recklessly endanger a bat or its roost. Where the presence of birds or bats is suspected, a qualified ecologist or Natural England should be contacted for advice.



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1. Introduction

Background & Instruction

- 1.1.1. This report has been prepared by George Pickering *BSc (Hons). TechArborA*, Arboricultural Consultant at SEED Arboriculture Ltd. George is a Technician member of the Arboricultural Association (AA) and is therefore required to uphold the professional and ethical standards within the AA Codes of Conduct.
- 1.1.2. This Arboricultural Impact Assessment & Method Statement (AMS) has been prepared by Seed Arboriculture Ltd to fulfil the requirements of Warwick District Council (WDC) support of a planning application for a development of 55 dwellings with associated access and landscaping at Woodside Conference Centre, Kenilworth (hereafter referred to as the 'site').

Purpose

- 1.1.3. The updated tree survey and AMS has been carried out in accordance with the recommendations outlined within British Standard BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'.
- 1.1.4. This AMS report includes:
- Updated baseline survey data of existing trees, including a Tree Schedule and Tree Constraints Plan (TCP).
 - Arboricultural Impact Assessment.
 - Arboricultural Method Statement specifically in relation to the physical protection of trees, to reduce the impact on retained trees, and those located adjacent to the Site; and
 - Tree Protection Plan

Site Description

- 1.1.5. The site is centred at UK National Grid Reference (SP 30753 71939) and comprises an existing building complex. The site surrounded by fields to all sides, however there is current construction around the site at time of writing. The application boundary is illustrated on the Site Location Plan (**Appendix 1**).



Reference Documents

1.1.6. **Table 1** provides a summary of documents which provide the basis for this tree survey and AIA.

Table 1 - Reference Documents

Document	Reference Number	Prepared By	Date
Topographical & Utility Survey	4192_Rev1	Mapmatic Measured Surveys	April 2021
Site Layout	BVA04 PL002	Ophir Architecture	June 2023

2. Planning Policy and Legislation

National Planning Policy Framework (NPPF)

2.1.1. The following paragraphs within the NPPF set out policies which guide the planning policy and decision-making process of Local Planning Authorities in relation to trees. These are:

2.1.2. **Paragraph 131**

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, 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.

2.1.3. **Paragraph 174 (b & d)**

Planning policies and decisions should contribute to and enhance the natural and local environment by:

Recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;

minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;

2.1.4. **Paragraph 180**

When determining planning applications, Local Planning Authority's (LPA) should apply the following principles:

If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternate site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

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 and a suitable compensation strategy exists.

Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

Statutory Tree Protection & Designations

- 2.1.5. A search for Tree Preservation Orders (TPOs) was carried out using the interactive map provided by WDC. No trees were found to be the subject of a TPO
- 2.1.6. The site is not located within a Conservation Area.
- 2.1.7. No Ancient Woodland¹ designations are present upon or adjacent to the Site.

Felling Licence

- 2.1.8. Tree felling is restricted under the Forestry Act 1967. Under this act, there is an exemption from the need for a felling licence for “Felling trees immediately required for the purpose of carrying out development authorised by planning permission (granted under the Town and Country Planning Act 1990)”
- 2.1.9. If full planning permission is granted, then any trees which require felling to implement the approved plans are exempt from this statutory protection. Outline planning permission does not provide an exemption to the regulations that control tree felling in the Forestry Act 1967.

¹ Ancient woods are areas of woodland that have persisted since 1600 in England and Wales, and 1750 in Scotland. The Magic Maps website (<https://magic.defra.gov.uk/MagicMap.aspx>) has been used to search for ancient woodland on or adjacent to a site.

3. Baseline Tree Survey

- 3.1.1. The tree survey was undertaken on 4th May 2022, by Sam Hobson *BSc (Hons), MICFor, MArborA*, Director at Seed Arboriculture Ltd.
- 3.1.2. The tree survey was undertaken in accordance with the methodology outlined within BS5837:2012.
- 3.1.3. The locations of the trees surveyed are illustrated on the Tree Constraints Plan (TCP) (**Appendix 3**) together with details of the constraints to new development in accordance with BS5837, including:
- Tree Retention Category
 - Root Protection Areas (RPAs)
 - Tree Canopy Spreads
- 3.1.4. Details for each of the trees surveyed are provided in the Tree Schedule (**Appendix 2**), including; reference numbers, species, tree dimensions, life stage, physiological and structural condition, and retention category.

Tree Survey Summary

Trees

- 3.1.5. The survey recorded 41no. individual trees, comprising of 8no. category A, 18no. category B, 9no. category C and 6no. category U retention value.

Groups

- 3.1.6. The survey recorded 14no. groups of trees, comprising of 2no. category B and 12no. category C retention value.

4. Arboricultural Impact Assessment

- 4.1.1. The impact of the proposed development upon existing trees is illustrated on the Arboricultural Impact Plans (**Appendix 3**).
- 4.1.2. All tree removal is internal to the site and will not have an impact on the amenity of the wider area.
- 4.1.3. Table 2 details the tree and group removals required to implement the Proposed Development.

Table 2 – Tree Removal for Proposed Development

	Retention Category				Total
	A	B	C	U	
Trees / Groups to be removed for Proposed Development	T23	T24, T25, T26, T27, T30, T31, T32, T34 G10, G11	T2, T9, T10, T19, T20, T36, T37, T39, T40 G1, G2 (part-removal), G3, G4, G5, G6, G7, G8, G9, G12, G13, G14	-	31 (+ 1 part-removal)
Category U trees (removal required regardless of development)	-	-	-	T11, T28, T33, T35, T38, T41	6
Total	1	10	20 (+ 1 part-removal)	6	37 (+ 1 part-removal)

- 4.1.4. None of the trees proposed for removal are considered aged or veteran and therefore the principles for refusal within the NPPF would not be considered applicable.

Root Protection Areas (RPAs)

- 4.1.5. The RPA is an area equivalent to a circle with a radius 12 times the diameter of the trees measured at 1.5 metres for single stemmed trees. For trees with more than one stem, one of two calculation methods should be used. In all cases, the stem diameter(s) should be measured in accordance with Annex C, and the RPA should be guided from Annex D of BS5837:2012.
- 4.1.6. The RPA is an area in which no ground works should be undertaken without due care in relation to the retained tree(s), to avoid soil compaction, changes in levels or soil contamination which could alter the trees condition and/or stability. The shape of the RPA and its exact location will depend upon arboricultural considerations and ground conditions.
- 4.1.7. The RPA for the trees has been calculated as prescribed by BS5837:2012 and are shown in relation to the Proposed Development on the Arboricultural Impact Plan at **Appendix 3**.

New RPA Incursions

4.1.8. The proposed development will result in several new RPA incursions. These are outlined below:

- **T12 (Wellingtonia)** – New RPA incursion of 76m² out of a total RPA of 707m² = New RPA incursion of 10% for cyclepath

Mitigation – New hard surface installed using no-dig cellular tree root protection.

- **T15 (Wellingtonia)** – New RPA incursion of 77m² out of a total RPA of 707m² = New RPA incursion of 10% for cyclepath

Mitigation – New hard surface installed using no-dig cellular tree root protection.

- **T16 (coastal redwood)** – New RPA incursion of 70m² out of a total RPA of 707m² = New RPA incursion of 10% for cyclepath

Mitigation – New hard surface installed using no-dig cellular tree root protection.

- **T18 (Wellingtonia)** – New RPA incursion of 115m² out of a total RPA of 707m² = New RPA incursion of 16% for road

New RPA incursion of 75m² out of a total RPA of 707m² = New RPA incursion of 10% for cyclepath

Mitigation – New hard surface installed using no-dig cellular tree root protection.

- **T21 (Sycamore)** – New RPA incursion of 39m² out of a total RPA of 452m² = New RPA incursion of 8%

Mitigation – Minor incursion, no specific mitigation required

- **T22 (Corsican pine)** – New RPA incursion of 45m² out of a total RPA of 238m² = New RPA incursion of 19%

Mitigation – New hard surface installed using no-dig cellular tree root protection.

Tree Canopies & Shade

4.1.9. The distribution of tree canopy cover on and within influencing distance of the site is illustrated on the TCP (**Appendix 3**). The Tree Schedule lists the vertical clearance from site ground level to significant tree branching of individual trees. This measurement informs the impacts of accessibility and development beneath tree canopies.

4.1.10. If considered appropriate the principal tree shadow constraints can be shown on the TCP and are plotted in accordance with BS5837 using the current height of surveyed trees.

4.1.11. Where shading is unavoidable, the potential adverse impact of shadowing should also be reviewed on balance with the positive aspects of retaining a degree of canopy shade. BS5837:2012 (para. 5.3.4, a) NOTE 1) states that “shading can be desirable to reduce glare or excessive solar heating, or to provide comfort during hot weather. The combination of shading, wind speed/turbulence reduction and evapotranspiration effects of trees can be utilised in conjunction with the design of buildings and spaces to provide local microclimatic benefits”.

4.1.12. The impact of shade upon the Proposed Development is not considered to be significant or negative.



Future growth

- 4.1.13. Due to the location of retained trees, future growth of trees is not considered to be an issue to the Proposed Development.
- 4.1.14. Minor pruning of lateral branches will address any issues where the canopy of trees encroaches towards the proposed buildings.

5. Arboricultural Method Statement

Scheme of arboricultural supervision

- 5.1.1. To ensure that all tree protection measures are correctly implemented, and no foreseeable damage occurs to retained trees, a scheme for arboricultural supervision and a process for monitoring and reporting has been set out within this AMS.
- 5.1.2. All elements of the arboricultural supervision will be undertaken by the retained arboricultural consultant or Project Arboriculturist (PA). The PA will be a suitably qualified arboriculturist.
- 5.1.3. Based on the provisional timings for the stages of development available at this time, a framework for site supervision has been provided in **Table 3**.
- 5.1.4. Details of any required variation of the supervision scheme will be reported to the Local Planning Authority by the Project Arboriculturist and agreed in writing where required.

Table 3 – Arboricultural supervision scheme

STAGE – Groundwork / Remediation Est. Start Date – TBC (subject to Reserved Matters planning approval)		
Pre-commencement meeting	<p>Initial pre-commencement meeting with key personnel responsible for implementation of development and tree protection.</p> <p>Personnel: Client, Site Manager, Main Contractor, Project Arboriculturist</p> <ul style="list-style-type: none"> Check correct locations of Tree Protection Fencing as required for groundwork / remediation phase of development. Spray marking of trees / groups for removal in accordance with approved plans. Identify and mark trees to be translocated <p>Agree and specify requirements for facilitation tree pruning.</p>	TBC (subject to planning approval)

<p>Monitoring Visit</p>	<p>Monitoring and progress update visit.</p> <p>Personnel: Client, Site Manager, Main Contractor, Project Arboriculturist</p> <ul style="list-style-type: none"> • Check installation of Tree Protection Fencing. • Discuss progress, incidents, queries and any variations to project schedule with project team. • Removal of hard surfacing within RPAs <p>Supervision of work within RPAs as/if required</p>	<p>Every 4 weeks during development unless otherwise required</p>
<p>STAGE – Construction Est. Start Date – TBC (subject to Reserved Matters planning approval)</p>		
<p>Pre-commencement meeting</p>	<p>Initial pre-commencement meeting with key personnel responsible for implementation of development and tree protection.</p> <p>Personnel: Client, Site Manager, Main Contractor, Project Arboriculturist and Local Authority Tree Officer.</p> <ul style="list-style-type: none"> • Check installation of Tree Protection Fencing as required for wider site-wide construction phase of development. • Check facilitation tree removal / tree pruning • Check installation of temporary tree root protection 	<p>TBC (subject to planning approval)</p>
<p>Arboricultural Supervision</p>	<p>Supervision of works within RPAs of retained trees. As per measures detailed within this AMS document and any subsequent updated AMS documents following planning approval</p> <p>Personnel: Project Arboriculturist</p>	<p>TBC</p>

<p>Monitoring Visit</p>	<p>Monitoring and progress update visit.</p> <p>Personnel: Client, Site Manager, Main Contractor, Project Arboriculturist</p> <ul style="list-style-type: none"> • Check integrity of Tree Protection Fencing and other tree protection measures. • Discuss progress, incidents, queries and any variations to project schedule with project team. • Check stages for completion – where removal temporary ground protection may be required to allow completion of later stages of construction / landscaping. 	<p>TBC</p>
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5.2. Supervision recording

- 5.2.1. Following each supervision visit, a supervision record sheet will be completed by the Project Arboriculturist. A copy of the supervision sheet will be issued to the site manager and other parties as required and retained by the project arboriculturist.
- 5.2.2. Details of the operations, development progress, observations and any reported issues will be recorded and where required recommendations will be made for remedial work or any required amendments to the tree protection and/or methods set out within this AMS.
- 5.2.3. During supervision visits the Project Arboriculturist will take photographs as required to provide additional evidence of the implementation of tree protection measures.
- 5.2.4. The record sheets and photographs will provide an auditable trail of evidence that all required tree protection measures have been adhered to. Copies of record sheets will be kept on site during the development process and available from the Project Arboriculturist.

5.3. Reporting process

- 5.3.1. The reporting process set out here should be adhered to when possible, to enable quick and effective communication of matters relating to tree protection and the implementation of tree protection measures.
- 5.3.2. The Site manager will be responsible for reporting any queries or incidents relating to trees to the Project Arboriculturist.
- 5.3.3. The Project Arboriculturist will contact the Tree Officer at the Local Planning Authority to discuss any issues or agree amendments to the tree protection measures set out within this AMS.
- 5.3.4. Any variation of the Approved Development which may impact upon trees should be reported to the Project Arboriculturist.
- 5.3.5. Any damage to the stem, branches or roots of any retained tree should be reported to the Project Arboriculturist. Where required, recommendations for remedial work will be made and reported to the Tree Officer if appropriate.



6. Tree Protection

Tree Protection Fencing

- 6.1.1. The principal protection for the retained trees is provided by Tree Protection Fencing (TPF) positioned to form a Construction Exclusion Zone (CEZ) around retained trees. No access should be allowed to the other than for operations specified in the approved documents or those agreed with the LPA later.
- 6.1.2. The location of Tree Protection Fencing (TPF) is illustrated on the Tree Protection Plans at **Appendix 3**.
- 6.1.3. There will be a requirement to move the position of the TPF between work stages as defined on the TPP.
- 6.1.4. The CEZ must be in place prior to the commencement of construction work on site. The TPF must not be moved or relocated without approval from the Project Arboriculturist and, where necessary, approval from the Local Planning Authority.
- 6.1.5. The TPF specification should be fit for the purpose of excluding construction activity and appropriate to the degree and proximity of work taking place around the retained trees.
- 6.1.6. The most common specification as illustrated in BS5836:2012 Figure 3b (**Appendix 4**) comprises welded mesh panels (Heras Fencing) on rubber or concrete feet, the panels should be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from within the fence. The distance between fence couplers should be at least 1m 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. 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.
- 6.1.7. Weatherproof signage will be attached to the fencing with words such as 'Construction Exclusion Zone – No Access' (signage example at **Appendix 4**).
- 6.1.8. At the end of the project the fence will be removed only after confirmation by the Project Arboriculturist and the Council that this is appropriate.
- 6.1.9. At the end of the project the TPF will be removed only after confirmation by the PA and the Council that this is appropriate.

Tree Root Protection (Cellular)

- 6.1.10. To facilitate the installation of new pavement within the RPA of two retained trees, a cellular confinement tree root protection system is advised. The location of this Tree Root Protection is shown on the Tree Protection Plan at **Appendix 3**.
- 6.1.11. For the purposes of this AIA, Greenfix Geoweb has been recommended. The final specification should be confirmed within an Arboricultural Method Statement.
- 6.1.12. For this application, the depth of system to be used is:
 - 100mm – Suitable for light vehicle usage (up to 6t gross weight).
- 6.1.13. The top surface for all areas will be a permeable block paving.



- 6.1.14. The manufacturers recommended method statement for installation of the system can be found at **Appendix 5**.
- 6.1.15. The appointed Project Arboriculturist will be on site throughout the installation of the Tree Root Protection system.

Temporary Ground Protection

- 6.1.16. In order to implement the development, there will be a requirement to position construction scaffolding and a working zone within the RPA of T23.
- 6.1.17. To reduce the likelihood of ground compaction through development there will be a requirement to install temporary ground protection in the locations illustrated on the Tree Protection Plan (Appendix 2).
- 6.1.18. BS5837:2012 - Paragraph 6.2.3.3 recommends that new temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil.
- 6.1.19. The ground protection might comprise one of the following:
- For pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane.
 - For pedestrian-operated plant up to a gross weight of 2t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane.

Working within RPAs

- 6.1.20. During construction there will be a requirement to construct a small proportion of a private driveway within the outer edge of the illustrated RPA of T3 and parking within the RPA of T7.
- 6.1.21. Due to construction requirements, it is unlikely that this work can practically be undertaken with hand-tools only, however, the limited careful excavation by machine is unlikely to be detrimental to the overall condition of the tree. The tree is currently semi-mature and will tolerate any minor disturbances within the RPA.
- 6.1.22. There is currently a tarmac car park very close to the area of RPA concerned which is likely limiting any root development beyond that which is illustrated on the plans.

Removal / Replacement of hard surfacing

- 6.1.23. The removal of existing surfacing within the RPAs of retained trees should be carried out with arboricultural supervision initially.
- 6.1.24. Tree Protection Fencing should be in the locations indicated for this work stage on the Tree Protection Plan.
- 6.1.25. The removal of existing surfacing should be carried out beginning closest to the trees and working backwards, away from the trees so no machinery stands on the exposed ground. The use of large plant machinery should be avoided where possible.



- 6.1.26. Tree Protection Fencing of the default specification should be in place during the removal of the existing surfacing and moved accordingly to protect the exposed ground as the removal progresses.
- 6.1.27. Where new surfacing is to be laid, the existing sub-base should be retained and augmented as required.

7. Post Construction

7.1. Post construction tree assessment

- 7.1.1. Following completion of the proposed development and removal of tree protection measures, an assessment of the trees should be undertaken to highlight any required remedial work.
- 7.1.2. An application for consent must be made for any works to trees protected by a TPO.
- 7.1.3. All remedial tree work should be carried out in accordance with British Standard 3998:2010 'Tree work – Recommendations'.

8. References

- 8.1.1. British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction - Recommendation'
- 8.1.2. British Standard 3998:2010 'Tree work – Recommendations'
- 8.1.3. BS8545:2014 Trees: from nursery to independence in the landscape – Recommendations
- 8.1.4. National Planning Policy Framework (NPPF) 2021
- 8.1.5. The Forestry Act 1967
- 8.1.6. The Town and Country Planning Act 1990
- 8.1.7. The Town and Country Planning (Tree Preservation) (England) Regulations 2012.

Appendix 1 – Site Location Plan



Appendix 2 – Tree Schedule

BS5837:2012 TREE SCHEDULE

													<u>DATE</u>	<u>CLIENT</u>	<u>SITE</u>	<u>REFERENCE</u>	
													13/05/2022	Bovis Homes	Woodside Conference Centre, Kenilworth	1400-TS-001-C	
Tree No.	Common Name	Botanical Name	Height (m)	Stem Dia (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Phys Con	Struc Con	Additional notes	Preliminary recommendations	BS5837 Retention Category	RPA (m ²)	RPA Radius (m)
					N	E	S	W									
T1	Horse chestnut	<i>Aesculus hippocastanum</i>	19	1150	8	9	9	8	8	Mat	Good	Good	Large individual in landscape border. Dense ivy obscuring base and main stem up to 8m. Broad well formed canopy. Considerable retention value subject to detailed assessment following ivy removal.	No works necessary at time of survey	A1	598	13.80
T2	Turkey oak	<i>Quercus cerris</i>	20	1120	10	9	10	10	6	Mat	Fair	Fair	Very large individual standing on small island within car park area. Surrounded by hard surfacing. Large Ganoderma bracket on buttress to north west of base, sounding reveals significant decay of main root ground this point. Further staining of lower stem at 1m from ground level. Minor lean south from base. Full extent of decay not known and will require further investigation if retained. Tree will require canopy reduction as a minimum and may not be suitable for long term retention due to structural condition and root decay.	Remove tree to facilitate proposed development	C1	573	13.50
T3	Sycamore	<i>Acer pseudoplatanus</i>	19	1000	5	9	9	9	3	Mat	Good	Fair	Stands outside site boundary. Stem bifurcates at 3m. Canopy appears to have been previously suppressed to north.	No works necessary at time of survey	A1	452	12.00
T4	Common lime	<i>Tilia x europaea</i>	20	900	5	6	5	6	1.5	Mat	Good	Fair	Tree stands within small planting pit surrounded by hard standing car park. Dense Epicormic growth around base. Tree has a crowded canopy with good vigour. Medium diameter deadwood associated with canopy.	No works necessary at time of survey	B1	366	10.80
T5	Deodar cedar	<i>Cedrus deodara</i>	23	810	2	4	9	5	4	Mat	Good	Fair	Stands on landscaped border. Canopy suppressed to north by adjacent pine. Minor lean south.	No works necessary at time of survey	B1, 2	290	9.60
T6	Corsican pine	<i>Pinus nigra var maritima</i>	23	710	4	3	6	5	15	Mat	Fair	Fair	Stands within landscape border. Very tall canopy. Canopy appears sparse with reduced vigour.	No works necessary at time of survey	B1	222	8.40
T7	Yew	<i>Taxus baccata</i>	11	590	6	5	5	4	1.5	E/Mat	Good	Good	Smaller tree within landscape border. Several fractured branches within canopy. Low canopy to south.	No works necessary at time of survey	B1, 2	163	7.20
T8	Bhutan pine	<i>Pinus wallichiana</i>	21	680	3	3	8	6	4	Mat	Fair	Fair	Stands within landscape border. Canopy biased southwest. Areas of canopy appear sparse. Collective contribution to large tree cover.	No works necessary at time of survey	B1, 2	206	8.10

BS5837:2012 TREE SCHEDULE

<u>DATE</u>	<u>CLIENT</u>	<u>SITE</u>	<u>REFERENCE</u>
13/05/2022	Bovis Homes	Woodside Conference Centre, Kenilworth	1400-TS-001-C

Tree No.	Common Name	Botanical Name	Height (m)	Stem Dia (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Phys Con	Struc Con	Additional notes	Preliminary recommendations	BS5837 Retention Category	RPA (m ²)	RPA Radius (m)
					N	E	S	W									
T9	English holly	<i>Ilex aquifolium</i>	9	434	4	3	3	4	1	S/Mat	Fair	Fair	Small tree located within planting pit on edge of internal road. Hard standing asphalt road passes by stem to north. Canopy has minor decline.	Remove tree to facilitate proposed development	C2	82	5.10
T10	Yew	<i>Taxus baccata</i>	4	200	4	2	4	4	0.2	S/Mat	Fair	Fair	Tree located within planting pit next to hard standing internal road. Low dense canopy.	Remove tree to facilitate proposed development	C2	18	2.40
T11	Copper beech	<i>Fagus sylvatica 'Purpurea'</i>	16	1090	7	7	9	8	1	Mat	Declining	Poor	Large individual within group area. Extensive K. deutzia fungi within buttress roots and multiple Ganoderma fungal brackets associated with main stem. Likely extensively decayed. Canopy showing significant dieback with deadwood throughout. Unsuitable for retention.	Remove tree to facilitate proposed development	U	547	13.20
T12	Wellingtonia	<i>Sequoiadendron giganteum</i>	27	1860	5	6	6	5	5	Mat	Good	Good	Stands within planting border surrounded by mature trees and scrub. Tree stands out and is a prominent feature within the site. Very high value.	No works necessary at time of survey	A1	1548	22.20
T13	Western hemlock	<i>Tsuga heterophylla</i>	21	620	3	3	4	3	8	Mat	Good	Fair	Stands on edge of landscape group. Canopy suppressed to north by adjacent trees. Limited individual value, collective value within group feature.	No works necessary at time of survey	B1, 2	177	7.50
T14	Western red cedar	<i>Thuja plicata</i>	23	1080	4	6	6	4	1.8	Mat	Good	Fair	Tree stands within planting border next to hard standing internal road. Tree forms mutual canopy with adjacent redwood. Low dense canopy.	No works necessary at time of survey	B1, 2	523	12.90
T15	Wellingtonia	<i>Sequoiadendron giganteum</i>	25	2150	6	6	6	6	1	Mat	Good	Good	Very large, prominent individual with radial canopy. Significant site value and likely historic value to site.	No works necessary at time of survey	A1	2091	25.80
T16	Coast redwood	<i>Sequoia sempervirens</i>	25	1340	5	4	5	5	0.3	Mat	Good	Good	Tree stands on edge of woody group. Consistent with adjacent specimens. Low radial canopy with potential historic value to site.	No works necessary at time of survey	A1	824	16.20
T17	Corsican pine	<i>Pinus nigra var maritima</i>	18	930	2	3	6	9	8	Mat	Good	Fair	Individual within landscape border. Moderate lean and significant canopy bias to west from base. Collective value with adjacent trees. Individual value limited by structural condition.	No works necessary at time of survey	B1, 2	387	11.10
T18	Wellingtonia	<i>Sequoiadendron giganteum</i>	26	1800	5	5	5	5	4	Mat	Good	Fair	Tree stands on edge of woody group and is consistent with adjacent specimens. Tree has good radial canopy and potential historic value to site.	No works necessary at time of survey	A1, 2	1466	21.60

BS5837:2012 TREE SCHEDULE

DATE	CLIENT	SITE	REFERENCE
13/05/2022	Bovis Homes	Woodside Conference Centre, Kenilworth	1400-TS-001-C

Tree No.	Common Name	Botanical Name	Height (m)	Stem Dia (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Phys Con	Struc Con	Additional notes	Preliminary recommendations	BS5837 Retention Category	RPA (m ²)	RPA Radius (m)
					N	E	S	W									
T19	Sycamore	<i>Acer pseudoplatanus</i>	16	566	6	6	4	6	4	E/Mat	Good	Fair	Likely self set tree within border. Twin stemmed from base with included union. Collective value to wider group. Limited individual value.	Remove tree to facilitate proposed development	C1, 2	150	6.90
T20	Western hemlock	<i>Tsuga heterophylla</i>	14	500	2	4	3	2	4	E/Mat	Fair	Fair	Individual within group border. Suppressed canopy with some small and medium diameter deadwood. Limited individual value.	Remove tree to facilitate proposed development	C1, 2	113	6.00
T21	Sycamore	<i>Acer pseudoplatanus</i>	21	1000	8	8	6	8	5	Mat	Good	Fair	Access to base restricted by dense ivy and vegetation. Stem estimated. Large individual on edge of group feature. Broad canopy. Good prominent tree in location. Should be re assessed following ivy removal.	No works necessary at time of survey	A1, 2	452	12.00
T22	Corsican pine	<i>Pinus nigra var maritima</i>	27	730	6	3	5	6	16	Mat	Good	Fair	Tree is located on edge of woody group. Dense vegetation around base of tree. Tree canopy has been raised, especially on eastern side to approx 17m.	No works necessary at time of survey	B1, 2	238	8.70
T23	Copper beech	<i>Fagus sylvatica 'Purpurea'</i>	20	1080	10	10	10	9	4	Mat	Good	Good	Large, well formed individual on edge of lawned area. Well formed radial canopy. Good example of species with significant amenity value to site.	Remove tree to facilitate proposed development	A1, 3	523	12.90
T24	Pedunculate oak	<i>Quercus robur</i>	18	650	6	4	8	6	4	Mat	Good	Fair	Tree stands within woody group on edge of lawned area. Dense vegetation around base and tree canopy is slightly suppressed. Low canopy to south.	Remove tree to facilitate proposed development	B2	191	7.80
T25	Douglas fir	<i>Pseudotsuga menziesii</i>	19	640	4	4	4	4	8	Mat	Good	Good	Stands within dense group. Stands out by size. Form is typical for species with radial canopy. Element of individual value within site.	Remove tree to facilitate proposed development	B1, 2	191	7.80
T26	Turkey oak	<i>Quercus cerris</i>	17	470	5	4	5	7	5	E/Mat	Good	Fair	Stands within dense group. Minor lean to west away from adjacent tree. Tree has potential to improve if given space to develop.	Remove tree to facilitate proposed development	B1, 2	102	5.70
T27	Western red cedar	<i>Thuja plicata</i>	18	610	4	4	2	3	3	E/Mat	Good	Fair	Tree located within woody group with dense undergrowth. Tree has 5 degree lean at base to south. Canopy suppressed by neighbouring tree. Collective value only.	Remove tree to facilitate proposed development	B2	163	7.20
T28	Cypress species	<i>Cupressus sp.</i>	15	360	3	2	3	2	5	Mat	Fair	Poor	Stands within group feature. Codominant stem previously failed and has been removed. Large failure wound at lower stem. Structural condition limits retention.	Remove tree to facilitate proposed development	U	55	4.20

BS5837:2012 TREE SCHEDULE

DATE	CLIENT	SITE	REFERENCE
13/05/2022	Bovis Homes	Woodside Conference Centre, Kenilworth	1400-TS-001-C

Tree No.	Common Name	Botanical Name	Height (m)	Stem Dia (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Phys Con	Struc Con	Additional notes	Preliminary recommendations	BS5837 Retention Category	RPA (m ²)	RPA Radius (m)
					N	E	S	W									
T29	Turkey oak	<i>Quercus cerris</i>	13	380	4	2	4	6	1.5	E/Mat	Good	Fair	Tree located within beech hedge. Canopy suppressed to east by neighbouring tree. Offers good future tree cover on site.	No works necessary at time of survey	B1	64	4.50
T30	Silver birch	<i>Betula pendula</i>	12	490	3	4	3	4	1.5	Mat	Good	Fair	Stands in verge next to internal road. Small cavity development on main stem at old pruning wound. Well formed canopy. Offers amenity within site.	Remove tree to facilitate proposed development	B1	113	6.00
T31	Wild cherry	<i>Prunus avium</i>	8	280	4	3	4	3	2	E/Mat	Good	Fair	-	Remove tree to facilitate proposed development	B1, 2	34	3.30
T32	Wild cherry	<i>Prunus avium</i>	9	500	3	5	5	5	2	E/Mat	Good	Fair	-	Remove tree to facilitate proposed development	B1, 2	113	6.00
T33	Common ash	<i>Fraxinus excelsior</i>	12	210	4	4	4	4	1	E/Mat	Fair	Fair	Tree located on bank of small stream. Tree is showing signs of ash dieback in the lower canopy. Limited future contribution.	Remove tree to facilitate proposed development	U1	18	2.40
T34	Wild cherry	<i>Prunus avium</i>	5	400	4	5	4	4	2	E/Mat	Good	Fair	-	Remove tree to facilitate proposed development	B1, 2	72	4.80
T35	Wild cherry	<i>Prunus avium</i>	5	320	2	3	3	3	1.5	Dead	Dead	Poor	Standing dead	Remove tree to facilitate proposed development	U	48	3.90
T36	Sycamore	<i>Acer pseudoplatanus</i>	5	156.2	3	3	3	3	1	S/Mat	Fair	Fair	Small self set tree. Tree is easily replaced.	Remove tree to facilitate proposed development	C1	10	1.80
T37	Silver birch	<i>Betula pendula</i>	15	410	6	6	6	6	3	E/Mat	Fair	Fair	Tree located close to building. A selection of small wooden structures present at base on slab paving and hard standing. If retained care should be taken when dismantling structures.	Remove tree to facilitate proposed development	C1	72	4.80
T38	Common ash	<i>Fraxinus excelsior</i>	6	125	1	1	1	1	1.5	S/Mat	Fair	Fair	Self seeded tree adjacent to building. Location limits retention value.	Remove tree to facilitate proposed development	U	7	1.50
T39	Cockspur hawthorn	<i>Crataegus crus-galli</i>	4	200	4	4	4	4	0.2	S/Mat	Fair	Fair	Part of the ornamental planting on site	Remove tree to facilitate proposed development	C1	18	2.40
T40	Wild cherry	<i>Prunus avium</i>	5	280	4	4	4	4	1.5	S/Mat	Fair	Fair	Part of the ornamental planting on site	Remove tree to facilitate proposed development	C1	34	3.30
T41	Common ash	<i>Fraxinus excelsior</i>	5	60	1	1	1	1	1.5	S/Mat	Fair	Fair	Self seeded tree adjacent to boundary wall. Location limits retention value.	Remove tree to facilitate proposed development	U	1	0.60

BS5837:2012 TREE SCHEDULE

DATE	CLIENT	SITE	REFERENCE
13/05/2022	Bovis Homes	Woodside Conference Centre, Kenilworth	1400-TS-001-C

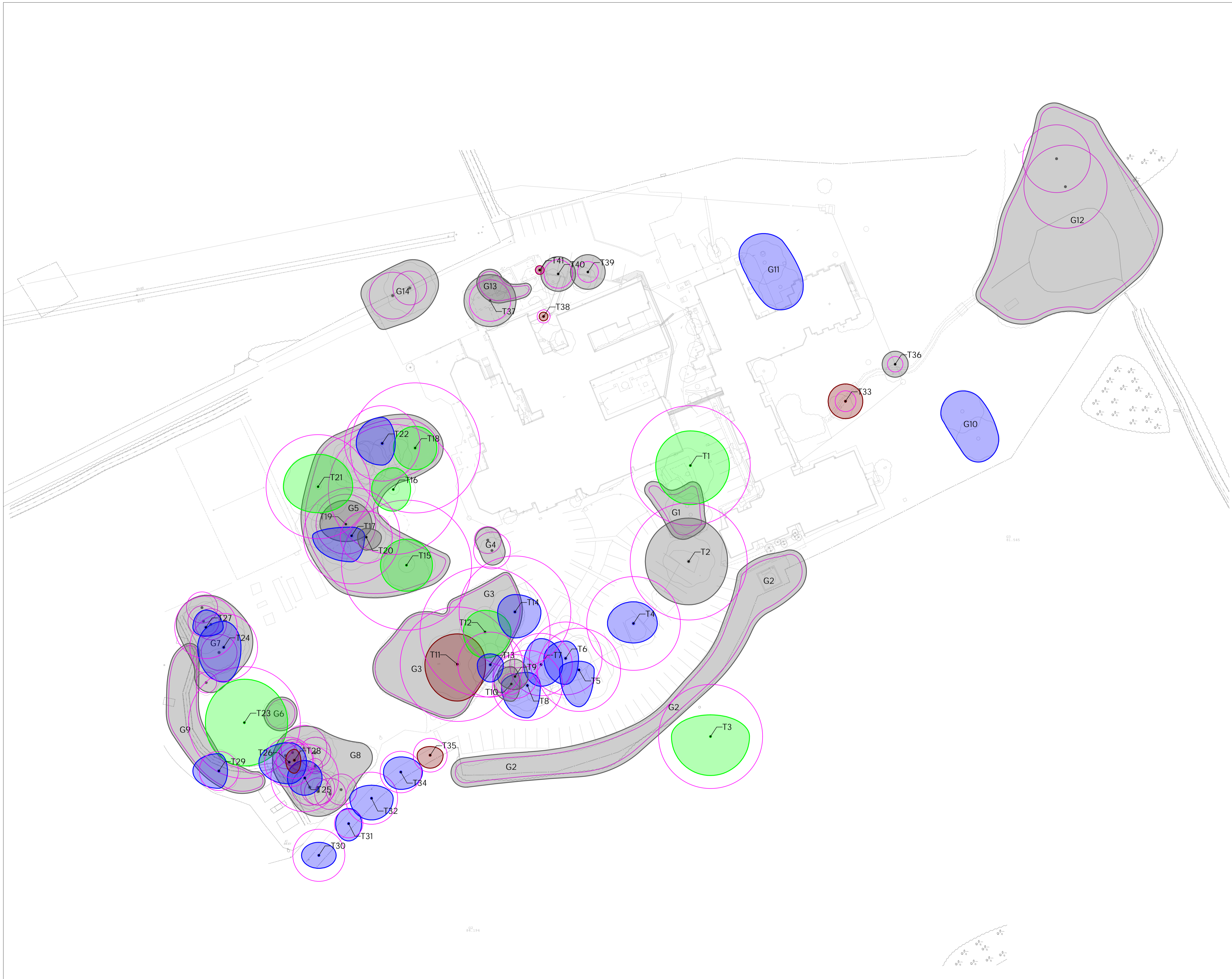
Tree No.	Common Name	Botanical Name	Height (m)	Stem Dia (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Phys Con	Struc Con	Additional notes	Preliminary recommendations	BS5837 Retention Category	RPA (m ²)	RPA Radius (m)
					N	E	S	W									
G1	Cherry laurel, Portugal laurel, Rhododendron species		Ave 5	Min 40 - Max 300	See	Associated	Plans.	0	S/Mat	Fair	Fair	Mixed woody shrubs in landscape border.	Remove tree to facilitate proposed development	C2		See Associated Plans.	
G2	Sycamore, Bay laurel tree, Cherry laurel, Elder		Min 2.5 - Max 6	Ave 100	See	Associated	Plans.	0.5	E/Mat	Good	Fair	Boundary hedge with some small self seeded trees growing within. Forms low level boundary screen.	Remove tree to facilitate proposed development	C2		See Associated Plans.	
G3	Sycamore, Variagated holly, English holly, Common Laburnum, Cherry laurel, Rhododendron species, Elder, Yew		Min 2 - Max 7	Min 70 - Max 200	See	Associated	Plans.	0.5	E/Mat	Fair	Fair	Dense group of shrubs and small trees within landscape bed. Larger individual trees identified individually. Unmanaged condition. Very limited value.	Remove tree to facilitate proposed development	C1, 2		See Associated Plans.	
G4	English holly		Ave 9	Ave 250	See	Associated	Plans.	3	S/Mat	Fair	Fair	Part of the ornamental planting on site	Remove tree to facilitate proposed development	C2		See Associated Plans.	
G5	Sycamore, Hornbeam, English holly, Cherry laurel, Rhododendron species		Min 2 - Max 9	Min 90 - Max 250	See	Associated	Plans.	0.5	E/Mat	Fair	Fair	Dense shrubs and small trees comprising understorey of tree group. Larger individual trees identified individually. Forms low screen. Unmanaged and untidy appearance. Limited wider value.	Remove tree to facilitate proposed development	C2		See Associated Plans.	
G6	Sycamore, Silver birch		Ave 9	Ave 140	See	Associated	Plans.	1.5	S/Mat	Fair	Fair	Pair of closely spaced, mutually suppressed trees growing beneath canopy of adjacent beech. Suppressed form, leaning east. Location limits figure potential.	Remove tree to facilitate proposed development	C2		See Associated Plans.	
G7	English holly		Ave 7	Ave 250	See	Associated	Plans.	0.3	E/Mat	Fair	Fair	Dense holly group forming the understorey to mature trees. Trees are closely grown and form a mutual canopy. Limited overall value to site.	Remove tree to facilitate proposed development	C2		See Associated Plans.	
G8	Sycamore, Horse chestnut, Common beech, English holly, Yew		Min 3 - Max 13	Min 55 - Max 350	See	Associated	Plans.	0	E/Mat	Fair	Fair	Surrounding group of smaller shrubs and trees of lower value. Many likely self seeded. Recommended to clear most to favour better individual trees within area.	Remove tree to facilitate proposed development	C1, 2		See Associated Plans.	
G9	Common beech		Ave 8	Ave 200	See	Associated	Plans.	0.2	S/Mat	Fair	Fair	Beech hedge located next to mature trees. Several dead specimens throughout. Offers good screening for offsite open space.	Remove tree to facilitate proposed development	C2		See Associated Plans.	
G10	Wild cherry		Ave 8	Min 330 - Max 460	See	Associated	Plans.	2	E/Mat	Fair	Fair	Part of the ornamental planting on site	Remove tree to facilitate proposed development	B2		See Associated Plans.	
G11	Wild cherry		Ave 8	Ave 440	See	Associated	Plans.	2	E/Mat	Fair	Fair	Part of the ornamental planting on site	Remove tree to facilitate proposed development	B2		See Associated Plans.	

BS5837:2012 TREE SCHEDULE

DATE	CLIENT	SITE	REFERENCE
13/05/2022	Bovis Homes	Woodside Conference Centre, Kenilworth	1400-TS-001-C

Tree No.	Common Name	Botanical Name	Height (m)	Stem Dia (mm)	Crown Spread (m)				Height of Crown Clearance (m)	Age Class	Phys Con	Struc Con	Additional notes	Preliminary recommendations	BS5837 Retention Category	RPA (m ²)	RPA Radius (m)
					N	E	S	W									
G12	Common hawthorn, Cherry plum, Goat willow, Crack willow		Min 3 - Max 14	Min 90 - Max 800	See	Associated	Plans.	0.5	Mat	Fair	Fair	Very dense area of vegetation surrounding pond. No access to any trees possible. Two larger willow within area with smaller scrub and small trees surrounding majority of area.	Remove tree to facilitate proposed development	C2		See Associated Plans.	
G13	Sycamore, Holm oak		Min 4 - Max 6	Ave 170	See	Associated	Plans.	0.5	S/Mat	Fair	Fair	Cluster of self seeded trees between boundary wall and sheds. Limited current or future value.	Remove tree to facilitate proposed development	C2		See Associated Plans.	
G14	Sycamore, Common ash		Ave 13	Min 320 - Max 460	See	Associated	Plans.	2.5	E/Mat	Fair	Fair	Group of trees on edge of verge next to hard standing internal road trees form a mutual canopy. Ash associated with group likely infected with ash dieback, limited future contribution.	Remove tree to facilitate proposed development	C2		See Associated Plans.	

Appendix 3 – Plans



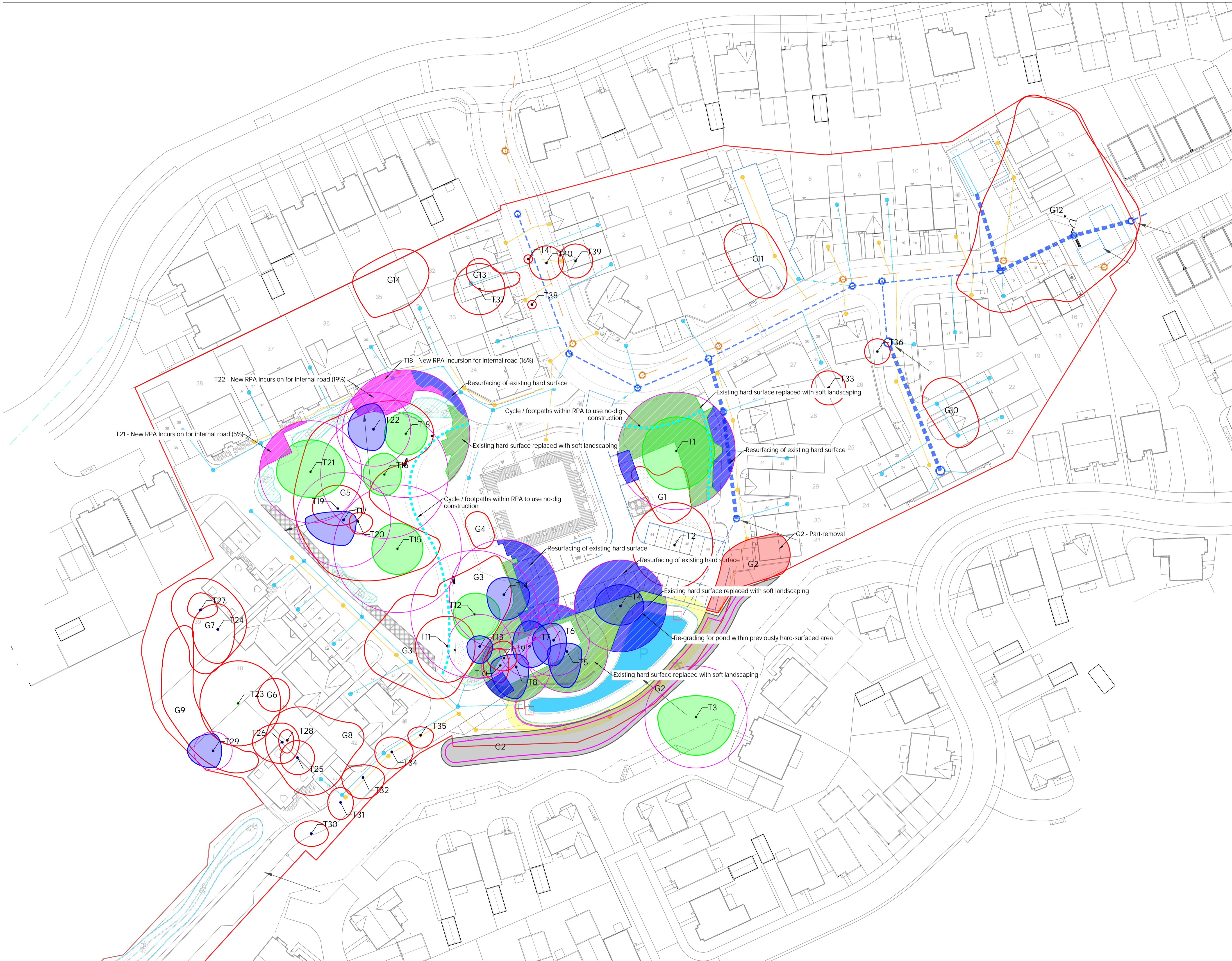
- KEY:**
- Trees / Groups
 - Canopy Spread
 - Tree Stem
 - Root Protection Area
 - A Category Tree (High quality / retention value)
 - B Category Tree (Moderate quality / retention value)
 - C Category Tree (Low quality / retention value)
 - U Category Tree (No remaining retention value)



Rev	Description	Date
Rev A	Issue to client	13.05.2022
Rev	Description	Date



PROJECT Woodside Conference Centre, Kenilworth	
TITLE Tree Constraints Plan	
DRAWING REF 1400-TCP-001-A	DRAWING NO 001
SCALE 1:400 @ A1	REVISION Rev A



KEY:

- Trees / Groups
 - Canopy Spread
 - Tree Stem
 - Root Protection Area
- A Category Tree (High quality / retention value)
- B Category Tree (Moderate quality / retention value)
- C Category Tree (Low quality / retention value)
- U Category Tree (No remaining retention value)

ARBORICULTURAL IMPACT

- Tree / Group to be REMOVED
- Group to be PART-REMOVED
- New RPA Incursion
- Existing Hard Surfacing within RPA To be resurfaced
- Existing Hard Surfacing within RPA To be replaced by soft landscaping
- No-dig Rain Gardens
- No-dig Cycle / Footpaths within RPAs

Rev	Description	Date
Rev D	Updated site layout & Landscaping	29.04.2023
Rev C	Updated site layout	06.06.2023
Rev B	Updated site layout	09.03.2023
Rev A	Issue to client	30.11.2022
Rev	Description	Date

SEED
 SEED Arboriculture Ltd
 Suite F6.1, Adelphi Mill, Bollington, Cheshire, SK10 5JB
 www.seed-arb.co.uk

PROJECT
 Woodside Conference Centre, Kenilworth

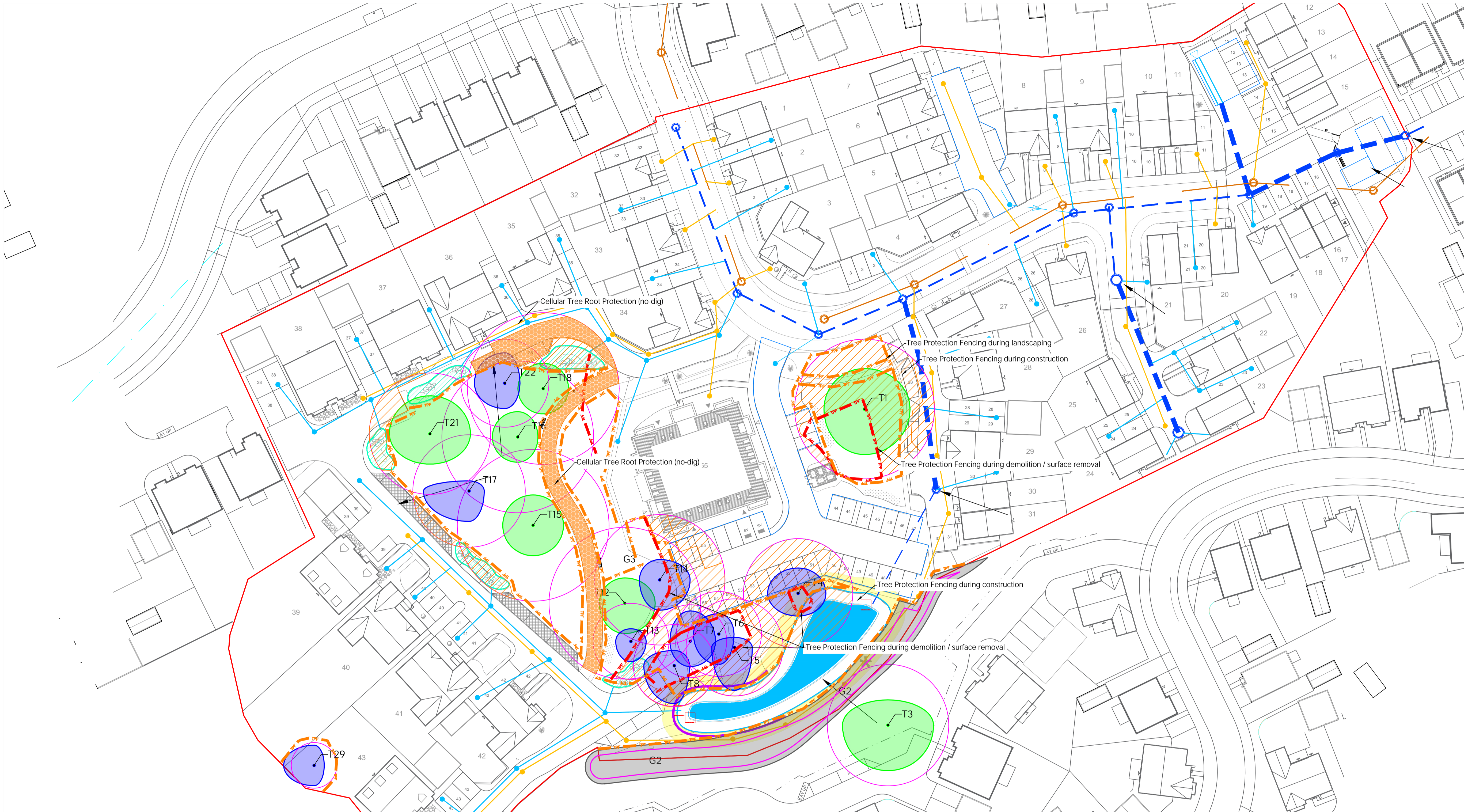
TITLE
 Arboricultural Impact Plan

DRAWING REF
 1400-AIP-002-D

DRAWING NO
 002

SCALE
 1:400 @ A1

REVISION
 Rev D



KEY:

- Trees / Groups
 - Canopy Spread
 - Tree Stem
 - Root Protection Area
- A Category Tree (High quality / retention value)
- B Category Tree (Moderate quality / retention value)
- C Category Tree (Low quality / retention value)
- U Category Tree (No remaining retention value)

TREE PROTECTION

- Tree Protection Fencing During demolition / surface removal
- Tree Protection Fencing During construction
- Working within RPA Removal / installation of existing hard surfacing - ACOW Supervision
- Temporary Ground Protection
- Cellular Tree Root Protection New hard surface installed using no-dig cellular tree root protection.



EXAMPLE: GroundGuards temporary ground protection

Temporary Ground Protection

During construction there will be a requirement to provide pedestrian access around the building and scaffolding. Where this access enters the RPA of any retained tree, Temporary Ground Protection will be installed as per the recommendation below.

BS5837:2012 - Paragraph 6.2.3.3 New temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil.

NOTE The ground protection might comprise one of the following:

- a) for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane;
- b) for pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane;

Tree Protection Fencing

The principal protection for the retained trees (above and below ground) and associated soils within the Site is through the erection of Tree Protection Fencing (TPF) to create a Construction Exclusion Zone (CEZ).

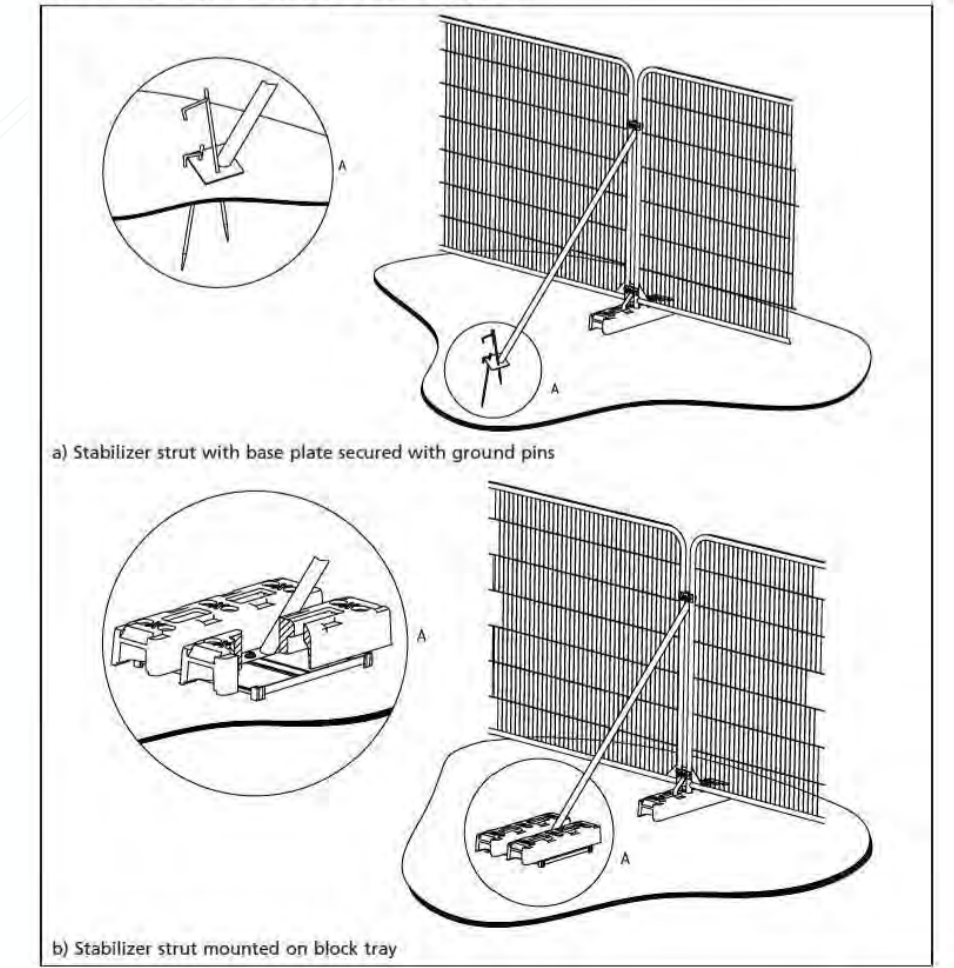
Prior to any on-site demolition or construction, tree protective measures and the CEZ must be in place. TPF Specification is shown in Figure 3 (BS5837:2012) - pictured above.

The following points are critical to the function of the CEZ:

- The protective tree fencing shall be maintained throughout the development phase
- No materials, machinery, temporary structures, chemicals or fuel shall be stored within the CEZ
- No excavations or increases in soil level within the CEZ are permitted without prior written approval from the LPA
- Care should be taken to ensure that wide or tall loads or plant with booms, jibs and counterweights do not come into contact with retained trees. Any transit or traverse of plant in close proximity to trees should be conducted under the supervision of a banks person to ensure that adequate clearance from trees is maintained at all times
- Material which will contaminate the soil such as concrete mixing, diesel oil and vehicle washing must not be discharged within 10m of the tree stems. In the event of an accident or spillage the PA must be notified
- Fires must 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
- Any landscaping within the CEZ must avoid soil disturbance. Therefore, re-grading and rotavators are not permitted. Any agreed soil re-profiling to facilitate final agreed levels must be carried out by hand with topsoil.

Tree Protection Fencing - BS5837:2012 Figure 3

Figure 3 Examples of above-ground stabilizing systems



Rev D	Updated layout & landscaping	29.06.2023
Rev C	Updated layout	06.06.2023
Rev A	Issue to client	29.11.2022
Rev	Description	Date

SEED
 SEED Arboriculture Ltd
 Suite F6.1, Adelphi Mill, Bollington, Cheshire, SK10 5JB
 www.seed-arb.co.uk

PROJECT
 Woodside Conference Centre, Kenilworth

TITLE
 Tree Protection Plan

DRAWING REF
 1400-TPP-003-D

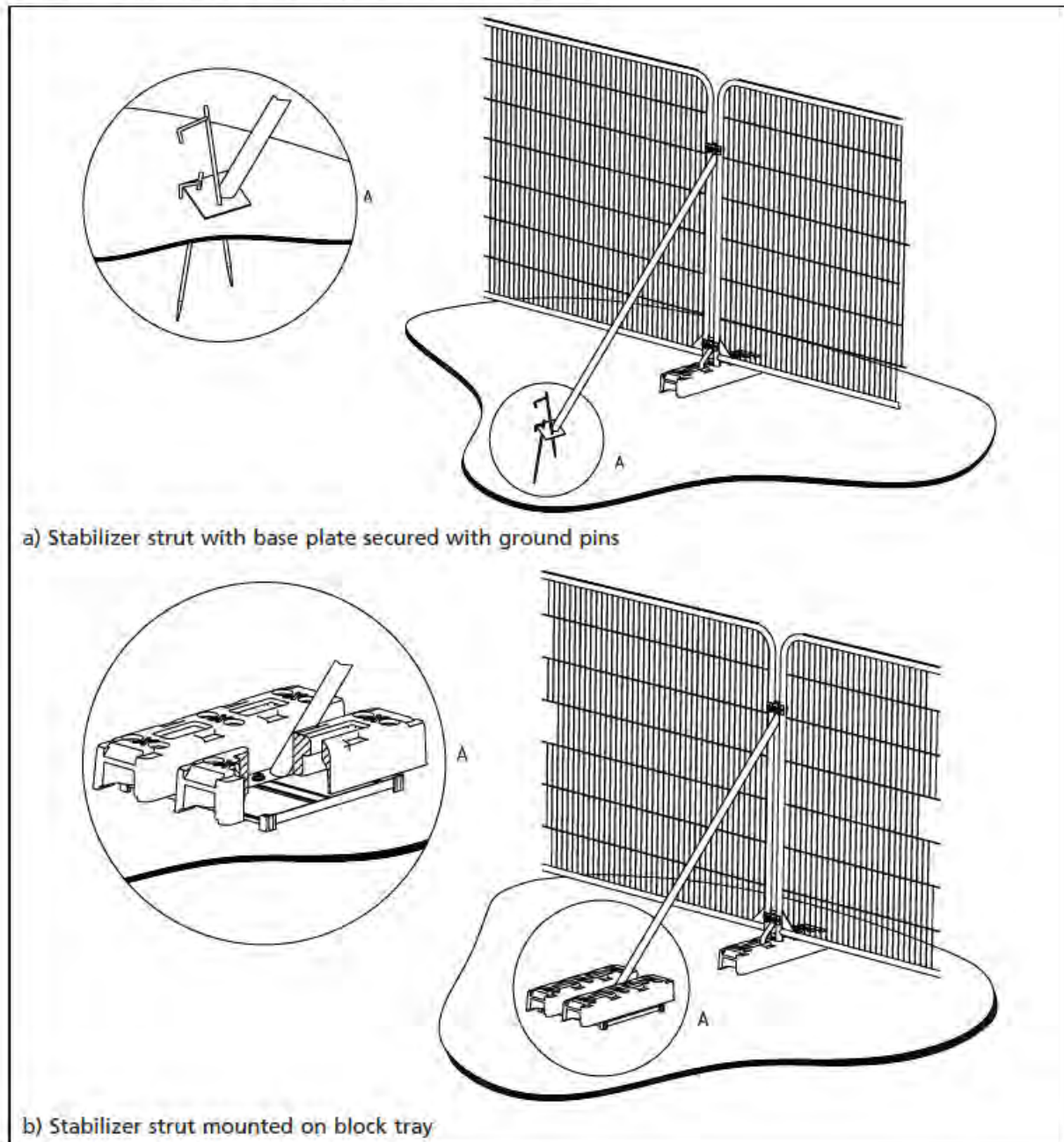
SCALE
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DRAWING NO
 003

REVISION
 Rev D

Appendix 4 – Tree Protection Specification

Figure 3 Examples of above-ground stabilizing systems



TREE PROTECTION AREA



NO ACCESS - TREE PROTECTION AREA

- NO MATERIALS, MACHINERY, TEMPORARY STRUCTURES OR CHEMICALS SHALL ENTER OR BE STORED WITHIN THIS AREA
- FENCING WILL NOT BE ALTERED OR MOVED WITHOUT PRIOR AGREEMENT OF THE PROJECT ARBORICULTURIST.



TREE PROTECTION FENCING

- TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A TREE PRESERVATION ORDER.
- UNAUTHORISED DAMAGE TO PROTECTED TREES IS A CRIMINAL OFFENCE AND COULD LEAD TO ENFORCEMENT ACTION.



ARBORICULTURAL CONSULTANTS

For any issues relating to this Tree Protection Fencing or other guidance with any arboricultural matters on this development, please contact **Seed Arboriculture Ltd.**

www.seed-arb.co.uk

- info@seed-arb.co.uk

- 01625 460 252

Appendix 5 – Greenfix Geoweb Installation Method

PRESTO



INSTALLATION GUIDE

■ **simplified**



GEOWEB® Tree Root Protection



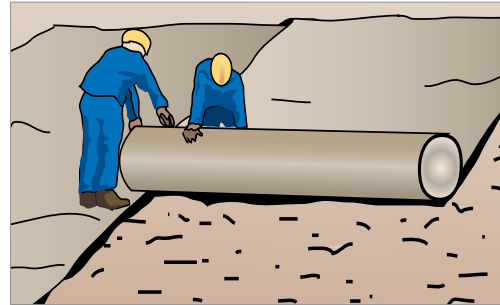


GEOWEB® Tree Root Protection

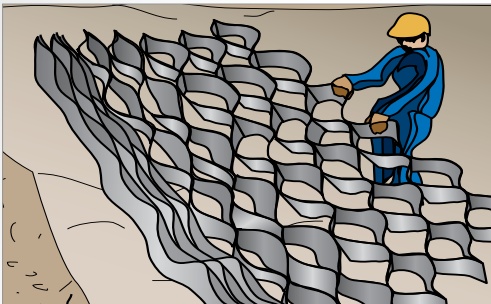
- 1 Prepare subgrade. Remove debris, rocks.



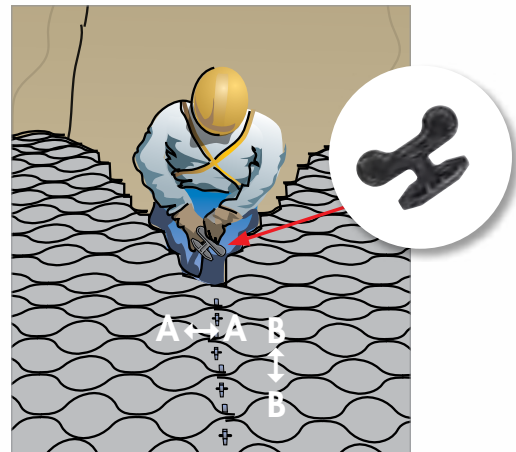
- 2 Install TRP4000 geotextile. Overlaps by minimum 300 mm.



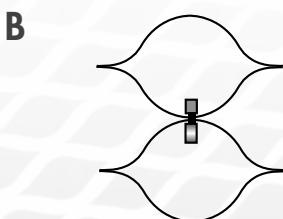
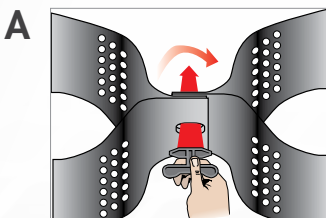
- 3 Partially expand GEOWEB® sections.



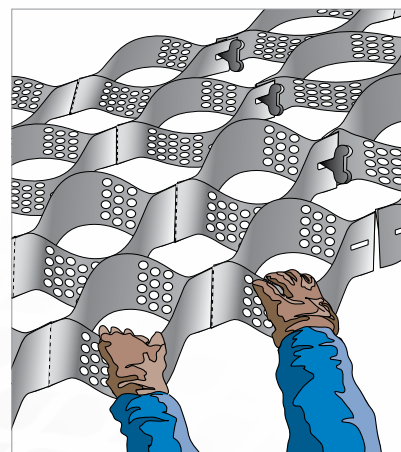
- 4 Connect GEOWEB® sections with ATRA® keys.



- 5 Connect side to side (A) and end to end (B).



- 6 Fully expand GEOWEB® sections.



IMPORTANT NOTE:

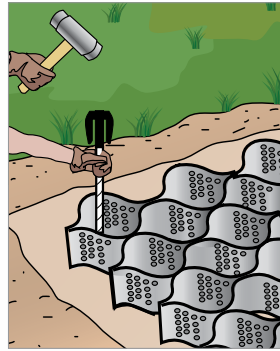
The simplified installation guide provided by Presto GEOSYSTEMS® is intended as a general guideline only. The contractor should follow contract plans and specifications and refer to detailed installation guidelines for more information.

7 Hold sections open. Use Options A, B, C or D.

A T-Bars



B ATRA® anchors



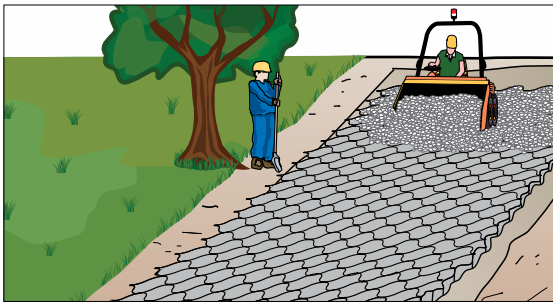
C Wood Stakes



D Infill Select Cells



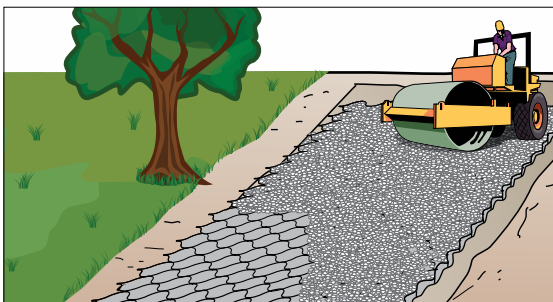
8 Infill GEOWEB® cells.



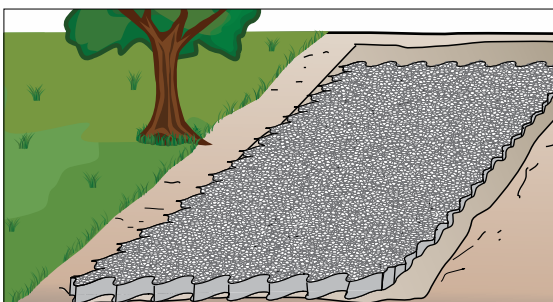
9 Spread Infill ensuring a 25 mm overfill at all times.



10 If required, use a 4t smooth, non-vibrating roller on overfilled GEOWEB® system. Refill as needed to ensure a 25 mm overfill.



11 Surface option ready to install according to specification.



Greenfix
Soil Stabilisation and Erosion Control Specialists

info@greenfix.co.uk
tel: 01608 666027
www.greenfix.co.uk

Geoweb infill material for Tree Root Protection
Clean Angular Stone 4-20mm

Specification for open graded infill material for Geoweb cellular confinement within tree root protection applications. The no fines material is to ensure high ratio void space which corresponds with ideal soil void ratios for tree root health.

Material to BS EN 13242 or BS EN 12620. Crushed gravel is not permitted.

Properties of material	Test	Value
Grading of particle size	BS EN 13242	Grading 4-20mm
Fines Content	BS EN 13242	f ₆
Shape flatness index	BS EN 13242	F ₁₀
Resistance to fragmentation	BS EN 13242	LA ₁₀
Resistance to wear	BS EN 13242	M ₁₀ 20
Water absorption rate BS EN 1097-6:2000 clause 7	BS EN 13242	WA ₂ 2
For typical WA > 2% magnesium sulphate soundness	BS EN 13242	MS ₁₈
Acid soluble sulphate content air-cooled blast furnace slag	BS EN 13242	AS _{0.1}
Acid soluble sulphate content non air cooled blast furnace slag	BS EN 13242	AS _{0.2}
Total sulphur aggregates other than air cooled blast furnace slag	BS EN 13242	<1% by mass
Total sulphur air cooled blast furnace slag	BS EN 13242	<2% by mass

Sieve Size mm	Percentage of 4-20mm passing
40	100
31.5	98 - 100
20	90 - 99
10	25 - 70
4	0 - 15
2	0 - 5
1	-

Air cooled blast furnace and steel slag should be free from Dicalcium silicate and iron disintegration in accordance with BS EN 13242:2002, 6.4.2.2 VS
Leaching of materials for blast furnace slag and other recycled materials should meet requirements of the Environmental waste acceptance criteria for inert waste when tested in accordance with BS 12457-3
On poor site conditions which require compaction, this should be minimum 4 passes of a smooth wheeled roller at max weight 1000kg/m width without vibration.

For assistance on correct 4–20mm clean angular stone infill specification, please contact Greenfix technical team.



GEOSYSTEMS®

MATERIALS SUPPLIED BY **Greenfix**

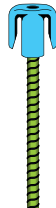
GEOWEB®



TRP4000
Non-woven Geotextile



ANCHORS ATRA® KEY



ADDITIONAL MATERIALS REQUIRED

4–20mm clean, angular stone



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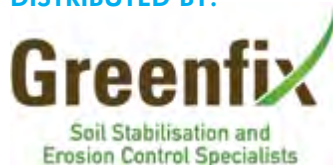
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