

Proposed Agricultural General Purpose Storage Building

Hollin Oaks

Bagger Wood Road

Hood Green

Phase 2 Pre-development Arboricultural Report

Prepared at the request of Mr G Wilkinson

On behalf of

Mr R Lock

25 March 2020

By

Ian Kennedy

Wharnccliffe Trees and Woodland Consultancy

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Summary

I have been instructed by Mr G Wilkinson on behalf of Mr R Lock, the applicant, to carry out a pre-development tree survey of trees in proximity to a proposed agricultural general purpose storage building on land to the southeast of Bagger Wood Road, Hood Green.

The location, crown spread and root protection areas (RPAs) of six individual trees and three groups of trees are recorded on Plan 1 showing the existing layout.

Table 1 records information about the trees, including their species, dimensions, age, life expectancy, retention category and root protection area. This information was collected, interpreted and recorded in accordance with BS5837:2012 *Trees in relation to design, demolition and construction – Recommendations*.

Plan 2 shows the proposed layout.

One group of six trees and two individual trees are included in the second highest retention category (B) because of their favourable condition and high landscape value. The remaining trees are included in the lowest retention category (C) because they are much smaller and much less significant.

The trees are mostly growing either side of the access route to the proposed storage building. Only one group is growing in close proximity to the building itself.

All but one group of category C trees would be unaffected by the building itself. The group that would be affected is a small group of young sycamore trees. Their loss would not be detrimental to tree cover in the area.

The RPAs of one tree in Group 1 and of Tree 6 encroach into the access route for the building. The potential impact of this encroachment is discussed in part 4 of this report.

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1.0 Introduction

1.1 Instruction

I have been instructed by Mr G Wilkinson on behalf of Mr R Lock, the applicant, to carry out a pre-development tree survey of trees in proximity to a proposed agricultural general purpose storage building on agricultural land to the south of Bagger Wood Road, Hood Green.

The tree survey is intended to provide a structured, impartial assessment of the tree population within the proposed development area.

The survey is intended to be informative to all stages of the development process and was carried out in accordance with *BS5837: 2012 Trees in relation to design, demolition and construction – Recommendations*.

1.2 Documents and Information Provided

I was provided with the following documents:

A drawing showing the proposed layout and elevations produced by Mr Wilkinson.

1.3 Limitations

This report is concerned only with assessing the condition of the trees, their importance in the local landscape and any cultural and conservation values.

It takes no account of the affects the trees may have on the soil, such as heave where trees are removed or shrinkage where trees are retained.

Trees are dynamic organisms influenced by weather, pests and diseases. Therefore, this report can only remain valid for a period of 24 months.

Any works around the trees such as trenching, pruning, storage of materials and trafficking that has not first been approved by a suitably qualified arboriculturalist will invalidate this report.

No decay detection equipment was used to gather information about the trees.

All survey and inspection was completed at ground level.

Site Visit and Observations

2.1 Site Visit

The site visit took place on 24 March 2020. All dimensions were taken using recognised methodology and arboricultural measuring equipment, unless otherwise stated. The weather at the time of inspection was dry and sunny with good visibility. Winds were light.

2.2 Brief Site Description

The land where the building is proposed is to the southeast of Bagger Wood Road at Ordinance Survey grid reference SE 3014 0217. The land is currently used for grazing. A dismantled railway line runs through the centre of the redline area.

Most trees are growing either side of the dismantled railway line on neighbouring land or along the southern field boundary.

2.3 Development Proposals

The development proposes an agricultural general purpose storage building close to the southern field boundary. The route of the dismantled railway line would be used as the access route to the building.

2.4 Tree Observations

The trees and shrubs included in this report were inspected in detail and the information on their size, condition and retention categories is included in Table 1 below.

Table 1. The Tree Survey

Tree number	Species	Height (M)	Stem diameter (DBH in MM)	Branch spread (M)	Ht first branch above GL* (M)	Ht of canopy above GL (M)	Life stage	Vitality	General observations on the tree's condition	Estimated life in years	Category
G1	3 sycamore, 1 oak and 2 ash	15.0 – 18.0	600 – 1010	North – 6.0 South – 5.0# East – 5.0 West – 4.5	4.0	4.0	Mature	Normal	These trees form the edge of a group of trees growing on neighbouring land. The trees all appear healthy with no significant defects. However, inspection was limited to the application site. The trees are a prominent part of the local landscape. There are no signs of ash dieback in the ash trees.	20+	B (1&2)
T1	Sycamore	10.0	360 & 220	North – 3.0 South – 3.0 East – 3.0 West – 3.0	2.0	2.0	Juvenile mature	Normal	A healthy, young and small tree growing within the site but close to the boundary. The tree makes a limited contribution to tree cover in the area.	20+	C (1)
T2	Sycamore	10.0	300	North – 2.0 South – 2.0 East – 2.0 West – 2.0	2.0	2.0	Juvenile mature	Normal	A healthy, young and small tree growing within the site but close to the boundary. The tree makes a limited contribution to tree cover in the area.	20+	C (1)
T3	Sycamore	10.0	250	North – 2.0 South – 2.0 East – 2.0 West – 2.0	2.0	2.0	Juvenile mature	Normal	A healthy, young and small tree growing within the site but close to the boundary. The tree makes a limited contribution to tree cover in the area.	20+	C (1)

T4	Sycamore	10.0	320	North - 2.0 South - 1.4 East - 1.6 West - 2.0	2.0	2.0	2.0	Juvenile mature	Normal	A healthy, young and small tree growing within the site but close to the boundary. There are some small bark wounds to the lower stem. These are occluding and there is no apparent decay. This is a minor defect. The tree makes a limited contribution to tree cover in the area.	20+	C(1)
T5	Sycamore	17.0	800	North - 6.0 South - 6.0 East - 6.0 West - 6.0	4.0	4.0	4.0	Mature	Normal	A well formed, healthy and mature tree with no significant defects. The tree is large and prominent in the local landscape.	20+	B(1)
G2	Group of sycamore	11.0	<200	North - 2.0 South - 2.0 East - 2.0 West - 2.0	GL	GL	GL	Juvenile mature	Normal	A group of small, multi-stemmed trees. Some may have been coppiced in the past. One has been topped in the past to restrict its height under the overhead line. They have limited amenity value in the area.	20+	C(1)
T6	Oak	15.0	700	North - 6.0 South - 6.0 East - 6.0 West - 6.0	3.0	3.0	3.0	Mature	Normal	A healthy and well formed tree with no significant defects. It is growing on the edge of the oak woodland that extends to the northeast along the edge of Bagger Wood Road.	40+	B(1&2)
G3	Group 2 oaks and 1 ash	8.0	<350	North - 3.5 South - 2.5 East - 2.0 West - 2.0	1.0	1.0	1.0	Juvenile mature	Normal	A group of small, young trees growing close to the boundary with Bagger Wood Road. The trees are healthy with no significant defects.	20+	C(1)

- Estimated * GL - Ground Level

3.0 Interpretation of Information and References

My interpretation and appraisal of information gathered from the survey is based on experience of tree species, visual risk hazard assessment and the guidance set out in BS5837:2012 *Trees in Relation to Design, Demolition, Construction – Recommendations*. My qualifications and experience in arboriculture are included in appendix 1.

3.1 BS5837:2012 Tree Retention Categories

All trees have been assessed and assigned a category in accordance with Table 1 of the standard. A copy of Table 1 is included as Appendix 2. This categorisation is intended to rank trees according to their importance in terms of quality, health, life expectancy, amenity and landscape value, together with wildlife and cultural importance. This ranking assists in determining the suitability and appropriateness of trees for retention in any development. Categories A to C are those considered for retention, 'A' being highest. Category 'U' trees are those not suitable for retention because of impaired condition.

Generally, category A and B trees should be given more consideration in layouts than category C trees as these are considered more valuable because of their condition, landscape value, future life expectancy or, on occasions because of their more favourable habitat value.

3.2 Below Ground Constraints; Root Protection Areas (RPAs)

The root protection area is the area of land considered necessary for trees should they be retained as part of any development. This is calculated using the stem diameter measured at 1.5 metres from ground level. This protection area is shown diagrammatically as a circle centred on the base of the tree where it is expected that rooting has not been impeded in any one direction and where disturbance has not taken place. See Plan 1. Where rooting has been impeded or disturbance taken place then the shape and size of the root protection area is modified according to an assessment of where rooting is likely to take place.

Where trees are to be retained, it is optimal to locate structures and services outside the RPA. However, where incursion becomes necessary, technical solutions may be possible to limit damage, areas lost can be compensated elsewhere, or the soil environment can be improved. In these circumstances an arboricultural method statement will be necessary to ensure that works are undertaken sympathetically and do not damage the below ground parts of the trees.

3.3 Above Ground Constraints; Crown Spreads

Ideally, working areas and construction will be out with the crown spreads of trees to be retained. However, where access by high sided vehicles and machinery for construction or erection of scaffolding is necessary within the crown spreads of trees to facilitate development an arboricultural method statement will be necessary to ensure pruning works are carried out sympathetically prior to construction works commencing.

Any permanent development within the canopy spread of a tree will also require a method statement. However, the effects of shade and other perceived inconveniences of trees this close to property should also be considered, together with the future growth potential of the trees and the maintenance obligation this will bring.

3.4 Conception and Design

The constraints imposed by trees should assist with site design and layout, together with the other competing needs of development. Generally, the trees in the higher categories (A and B) should be given greater consideration in any layout than the lowest retention category (C):

As well as the footprint of buildings, the provisions of services, infrastructure layout and the access space required for construction itself should be considered.

4.0 Arboricultural Impact Assessment

The Agricultural General Purpose Storage Building

With the exception of part of Group 2, none of the trees in this report would be affected by the construction of the building in the proposed location.

Group 2 comprises small, young trees that have limited value and their loss would not have a significant impact on tree cover in the area.

The access route to the proposed building

The access route to the building would be along the route of the dismantled railway line.

The trees included in this report are growing along the edge of the route. Most are on the southern edge.

Most of the trees would be unaffected because their crown spreads and root protection areas (RPAs) are outside the route. However, the RPAs of two trees extend into the access route. These are the most easterly tree in Group 1 and Tree 6.

It is not clear whether there is a metalled foundation to the route below the topsoil that once formed the base for the old railway line. If there is then I believe that this metalled foundation will be an acceptable base to prevent damage to RPAs because the trees will have grown and matured with this in place. However, if there is no such metalled structure below the soil then vehicles will cause soil compaction that would be detrimental to the health of the two trees discussed above.

If there is no metalled surface along the route then it would be necessary to construct a specially designed road surface along the route to protect the RPAs of these trees from soil compaction.

The foundations of the access route must sit on top of existing levels and be capable of supporting the weight of vehicles without causing undue soil compaction.

Appendix 4 gives examples of systems available and can be used in accordance with BS 5837 (2012).

5.0 Conclusions

There are three groups and six individual trees included in this report.

One group of six trees and two individual trees are included in the second highest retention category (B) because of their favourable condition and high landscape value.

The construction of the building itself would have a negligible impact on tree cover in the local area.

Two of the mature trees have root protection areas that extend into the access route to the proposed building.

The access route is a dismantled railway line.

If this old railway line has a retained metal bed under the topsoil then I believe that this will be adequate for vehicles accessing the building without causing damage to the trees.

If there is no existing base to the access route then a specially engineered road surface would need to be constructed on top of existing soil levels to prevent soil compaction and damage to the trees.

Examples of specialist road constructions are provided in Appendix 4 below.

6.0 Legal Considerations

Protected trees

No checks have been made with the Local Planning Authority for Tree Preservation Orders, other planning conditions or inclusion of the site in a Conservation Area. However, if any of the trees subject to this report are protected it will be necessary to apply to the local planning authority (LPA) for permission before any work, other than certain exempted operations, can be carried out.

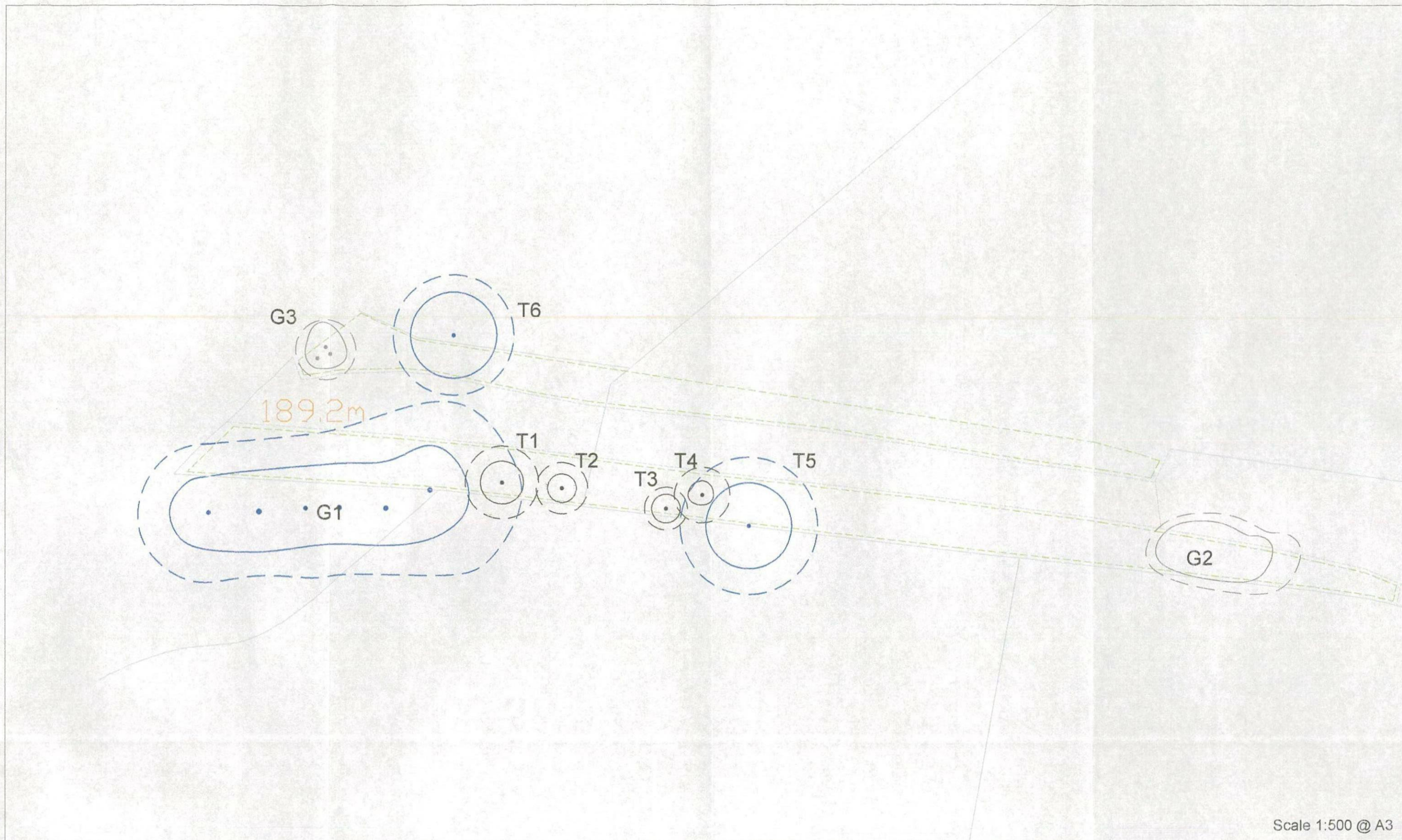
Wildlife conservation legislation

Breeding birds are protected, together with bats and their roosts, whether their roosts are in use or not.

Consideration should be given to the presence of protected species prior to any proposed tree removal or maintenance. This will include breeding birds, principally between March and August, and bats at any time of year.

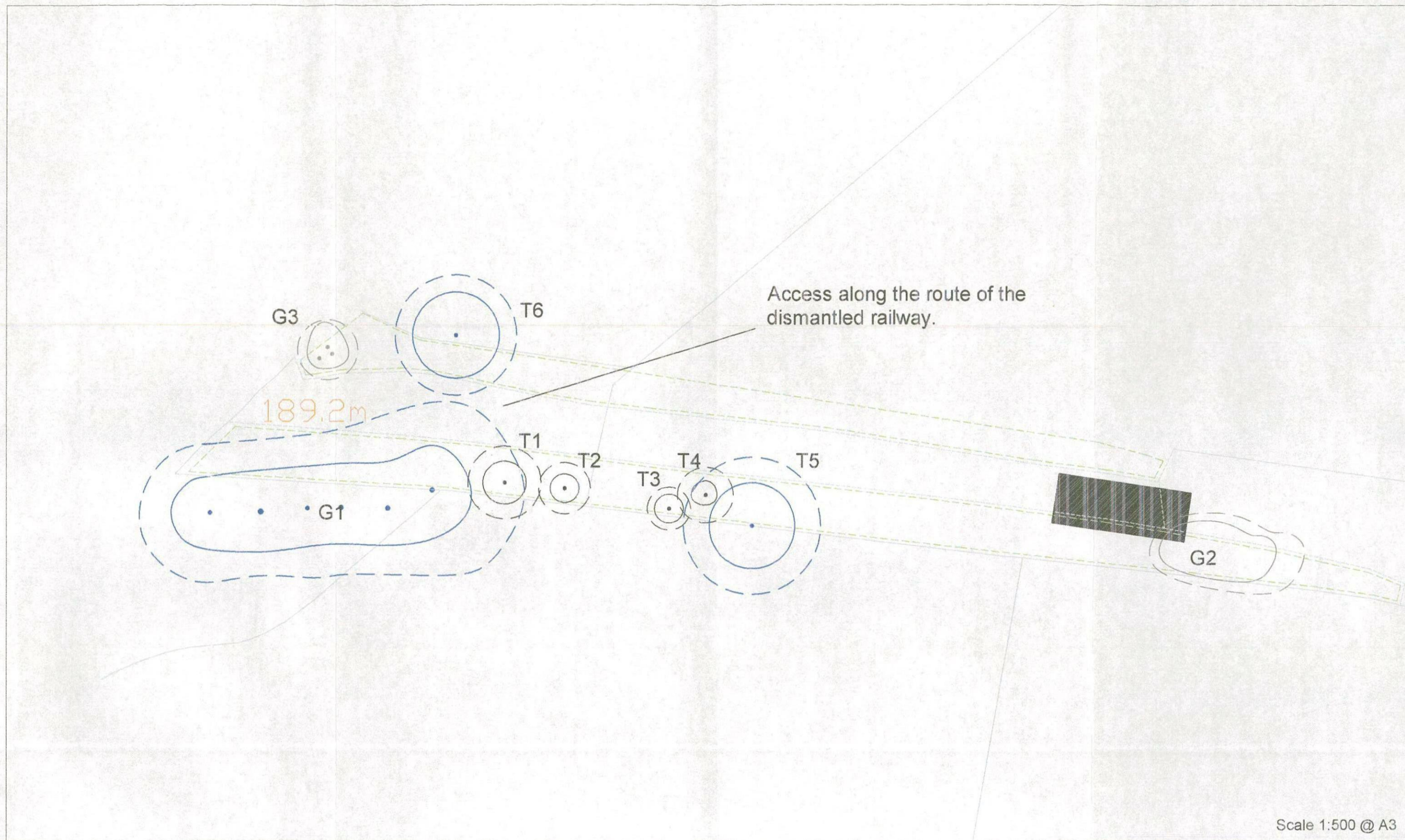
Tree surgeons should also be aware of their duties under legislation to protect wildlife and carry out their site assessment and work accordingly.

There is a very high chance that birds are breeding in the shrubbery at the moment. Breeding activity could go on into July.



Plan 1 Tree Constraints Plan showing the existing layout





Plan 2 Tree Constraints Plan showing the proposed layout



Appendix 1. Qualifications and Experience of Ian Kennedy

1. Qualifications

Ian graduated from the Scottish Agricultural College in August 1995 with a Higher National Diploma in Horticulture (HND) with Distinction.

In 1998 Ian graduated from the University of Aberdeen with a BSc (Hons) Upper second class in Forestry with Arboriculture and Amenity Forestry.

He passed the LANTRA Professional Tree Inspection examination in 2006.

In 2009 his application to become a professional member of the Arboricultural Association was assessed to fulfil all the necessary requirements and he became a professional member of the Association that year.

In 2011 he passed the final examination of the Institute of Chartered Foresters and became a member of that institute in January 2012.

2. Practical experience

Presently Ian is working in private practice as an independent arboricultural and woodland management consultant undertaking tree conditions surveys, pre-development tree surveys to the BS5837:2012 standard, mortgage reports and woodland management planning works. Clients range from home owners and farmers to architects, building companies, local authorities, schools and larger development companies.

Prior to private practice Ian held a number of positions in local government. Firstly, he was the arboriculturalist within a planning office in Essex. Ian gained considerable experience regarding trees in relation to development, in particular BS 5837.

Development work formed the core of his duties and applications ranged from small back garden developments to major schemes such as the redevelopment of Ministry of Defence land for private residential development. Ian also undertook all functions associated with

Tree Preservation Orders (TPOs), including the making of new TPOs, assessing suitability of applications to work on protected trees and trees in conservation areas.

Ian went on to manage a 500 hectare woodland estate for a local authority in South Yorkshire that included a mix of urban and rural woodlands. This included preparation and implementation of detailed management plans for multiple use woodlands. He undertook all aspects of silvicultural management from marking to contract tendering and monitoring. He also managed the access, conservation, landscape and archaeological requirements of the estate. Ian was directly involved in the estate achieving Forest Stewardship Council certification in 2003 and personally ensured continued certification.

Ian has worked extensively with Forestry Commission to obtain the necessary licences for management works and ensured the estate benefited fully from the full range of grants available.

Latterly at the same authority Ian went on to manage the trees and woodlands unit, having overall responsibility for management of the authority's tree and woodland stock and associated staff, together with delivery of other tree related services such as those associated with the Town and Country Planning Acts.

3. Continuing professional development

Ian regularly attends meetings, seminars and training events hosted by The Arboricultural Association, Institute of Chartered Foresters, Royal Forestry Society and Forestry Commission and benefits from the respective journals, briefings and newsletters available to members of the first three of the organisations listed.

4. Relevant experience

Ian Kennedy has spent 18 years working with trees, including as the arboricultural advisor to planning officers for a Local Planning Authority and manager of a trees and woodlands unit for another local authority with overall responsibility for trees, including in relation to the Town and Country Planning Acts.

Appendix 2. Tree Retention Categories

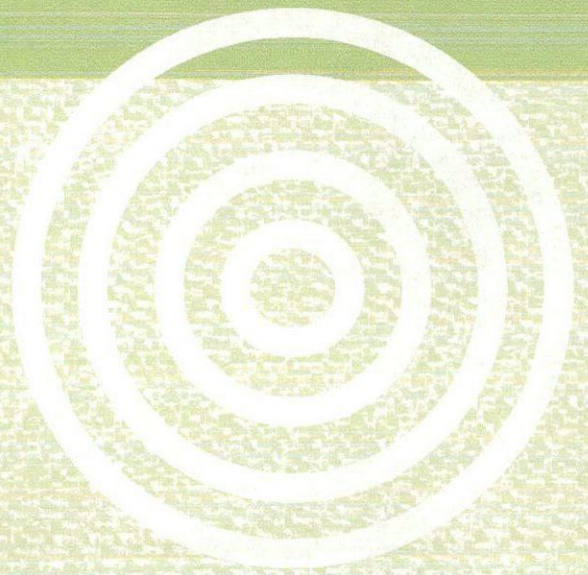
Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories where appropriate)	Identification on plan
Trees unsuitable for retention (see Note)		
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	- Trees that have a serious, irreparable structural defect such that their early loss is expected due to collapse, including those that will become unstable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) - Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline - Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.	See Table 2
Trees to be considered for retention		
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 years	1 Mainly arboreal qualities 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 arboreal features (e.g. the dominant and/or principal trees within an avenue) 2 Mainly landscape qualities Trees, groups or woodlands of particular visual importance as arboreal and/or landscape features 3 Mainly cultural values, including conservation Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	See Table 2
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	See Table 2

Appendix 3. Explanatory notes for terms used in this report

- **Compass Bearing:** N = north; S = south; E = east; W = west;
- **Age Class:** Assessed as either:
 - Young = a size which could be easily transplanted;
 - Semi-mature = prior to seed bearing age and could be transplanted with care;
 - Young Mature = early maturity, not fully grown but of seed bearing age and may have achieved mature height;
 - Mature = fully grown, annual growth is much reduced;
 - Old Mature = old for the species, possibly starting to decline;
- **Trunk Diameter:** These figures relate to the diameter of the trunk at a given distance above ground level and are recorded in centimetres measured with a diameter tape.
- **Estimated size: #**
- **Health:**
 - Normal Vitality = normal growth and twig extension;
 - Moderate Vitality = reduced twig extension but other than that few signs of ill-health;
 - Early Decline = reduced twig extension and some dead twigs in the outer canopy;
 - Mid-decline = small internodes, the canopy may be thinning and contain dead twigs and/or branches in the outer canopy, older branch wounds that haven't occluded may be decaying and forming cavities;
 - Severe Decline = sparse crown, numerous dead twigs and branches in the outer canopy, older branch wounds likely to be decaying and forming cavities;
 - Dead.
- **Structural Condition**
 - Acute stem union = a weak union between two or more stems at the main forking point caused by the formation of reaction wood. Mechanical pressure at the forking point increases as secondary thickening occurs increasing the risk of failure at that point.
 - Acute branch union = the same principle as acute stem unions but between a stem and a branch or two branches rather than 2 main stems.

Appendix 4. Examples of specialist engineering solutions for roads that do not compact soils.



CellWeb TRP®



Tree Root Protection Guaranteed

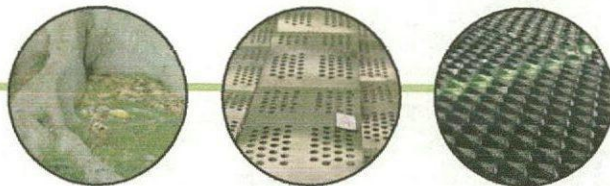


Geosynthetics

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CellWeb TRP® System

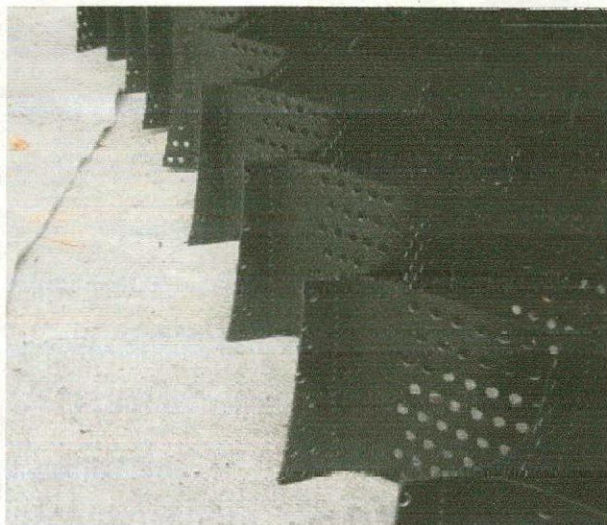
Tree Root Protection System



The Consequences Of Tree Root Damage During Construction

It is an offence to cut down, lop, uproot, lop, wilfully damage or destroy a protected tree without authorisation. Trees can be protected under the Town and Country Planning Act 1990 and the Town and Country Planning (Trees) Regulations 1999. Trees are protected when they are the subject of Tree Preservation Orders (T.P.O) or within Conservation Areas, subject to certain exemptions. Retention and protection of trees on development sites is also secured through the use of planning conditions.

On a construction site all trees with a Tree Preservation Orders need to be managed in accordance with BS5837 2012 (Trees in relation to construction); failure to comply with these orders can be a costly affair as many parties have discovered.

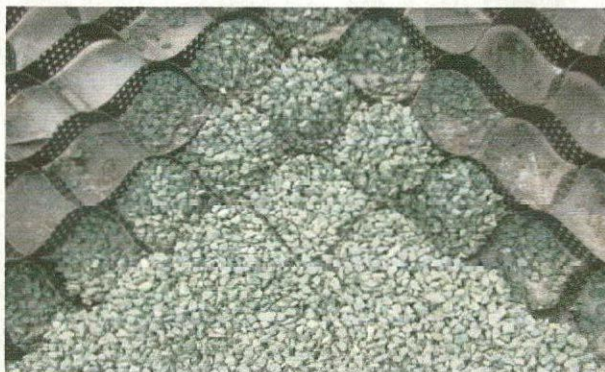


Fishponds, Ketton

There are two offences which apply equally to trees protected by Tree Preservation Orders and those within Conservation Areas:

- Firstly, anyone who cuts down, uproots or wilfully destroys a tree, or who lops, tops or wilfully damages it in a way that is likely to destroy it is liable, if convicted in the Magistrates Court, to pay a fine of up to £20,000. If the person is committed for trial in the Crown Court, they are liable on conviction to an unlimited fine. The Courts have held that it is not necessary for a tree to be obliterated for it to be "destroyed" for the purposes of the legislation. It is sufficient for the tree to have been rendered useless as an amenity.
- Secondly, anyone who carries out works on a tree that are not likely to destroy it is liable, if convicted in the Magistrates Court, to a fine of up to £2,500. In addition to directly carrying out unauthorised works on protected trees, it is an offence to cause or permit such works.

Developers and building contractors are often completely unaware that 'compaction of soils within the Root Protection Area (RPA)' constitutes wilful damage to the tree. When vehicular or pedestrian access within the RPA is necessary, either for the construction operation or final site access, the effects of this activity must be addressed and the ground must be protected. When tracked or wheeled traffic movements are involved, the ground protection system should be designed by an engineer and take into account the loading involved.



Shelton Road, Shewsbury

The Solution:

Geosynthetics CellWeb TRP® System



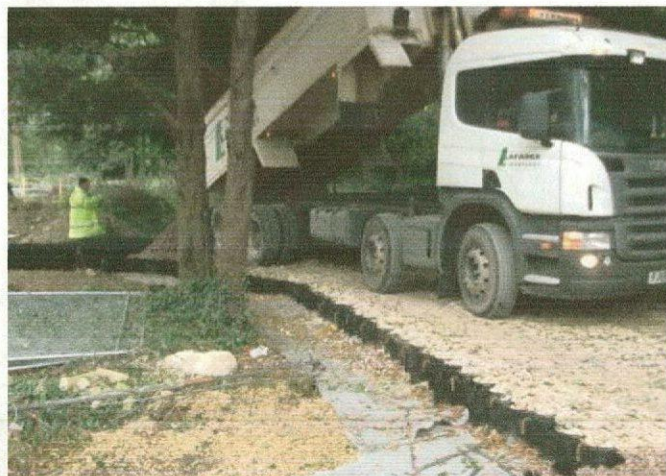
The Solution According to BS 5837:2012

"Appropriate sub-base options for new hard surfacing include three-dimensional cellular confinement systems"

(BS 5837 2012 section 7.4.2 Note 1)

The CellWeb TRP® Solution

CellWeb TRP® is the market leader in the United Kingdom and Ireland for tree root protection. CellWeb TRP® cellular confinement system protects tree roots from the damaging effects of compaction and desiccation, while creating a stable, load bearing surface for vehicular traffic. CellWeb TRP® complies with BS 5837:2012 and APN 12. It provides a no-dig solution, is tried and tested having been used successfully since 1998. It is the only tree root protection system which has been independently tested and it is the only tree root protection system which is guaranteed for 20 years. See page 6 for the full terms and conditions of the guarantee.



Fishponds, Ketton

Field Trials

Geosynthetics Limited are the only company in the UK and Ireland to carry out live, completely independent field tests on the performance of a 3 dimensional cellular confinement system when used in a no-dig tree root protection system application. The results prove that CellWeb TRP® significantly reduces the compaction of sub-soils within the root growth limiting parameters established by K D Coder, 'Soil damage from compaction'. University of Georgia. July 2000. A copy of the report is available upon request.

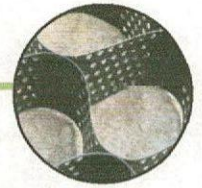
CellWeb TRP® Product Guarantee

Geosynthetics Limited prides itself on a providing a reliable, consistent service; including technical advice, on site support and installation guidance. Geosynthetics Limited provides a 20 year guarantee for the CellWeb TRP® tree root protection system. This guarantee gives the client, the tree officer and arboricultural consultant the confidence that the designed system will perform as intended without damaging the health of the tree.

See page 6 for the full terms and conditions of the guarantee.

CellWeb TRP® System

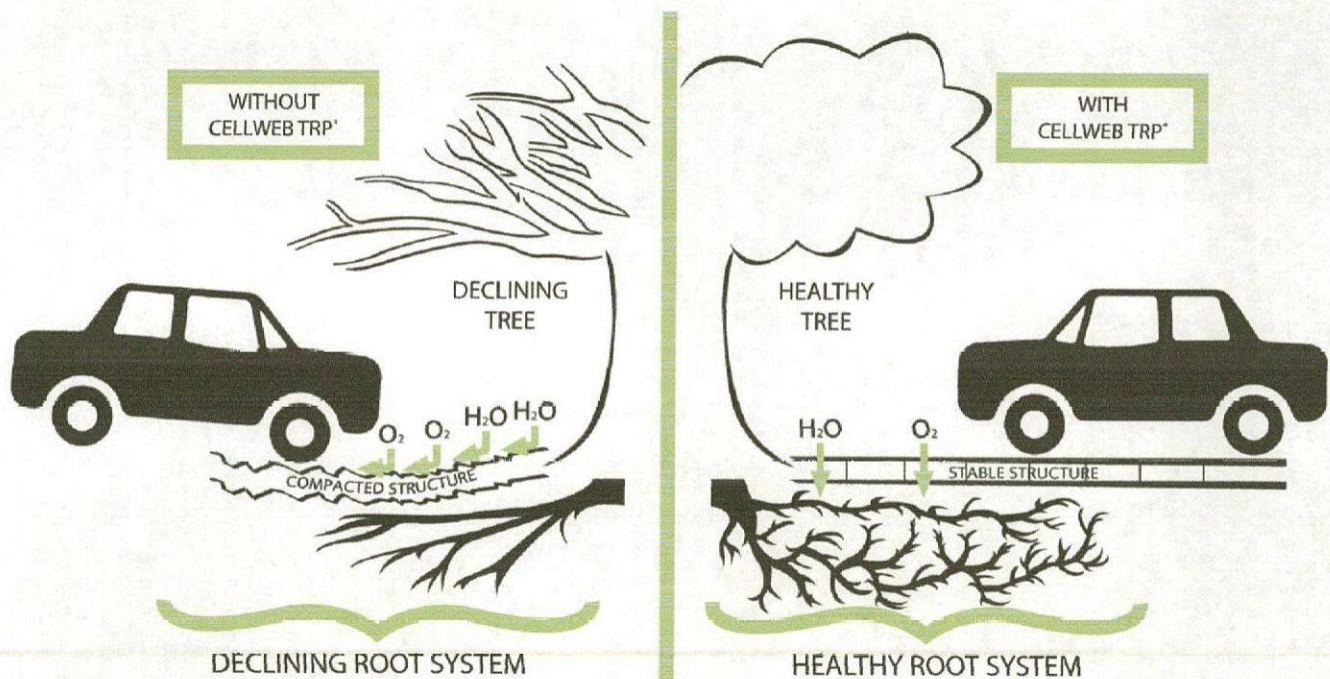
How the System Works



How CellWeb TRP® Works

CellWeb TRP® is a cellular confinement system that confines aggregate materials and makes them stronger, thus increasing the bearing capacity of the sub base materials. Research shows that CellWeb TRP® acts as a stiff raft to distribute wheel loads and reduce their magnitude at the base of the construction, thus maintaining the soil bulk density at levels that are suitable for tree root growth.

CellWeb TRP® is used around the world to provide cost effective hard surface construction over tree roots and is the system of choice for Tree Officers and Arboriculturists. For more information on this subject see CellWeb TRP® Fact Sheet No 1.



Water and Oxygen Transfer Through the CellWeb TRP® System

The CellWeb TRP® system is constructed using open aggregate infill and CellWeb TRP® has perforated cell walls. The pore spaces between the aggregate particles are greater than 0.1mm in diameter. This open structure is far more permeable than typical soils and allows the free movement of water and oxygen so that supplies to trees are maintained.

For more information on this subject see CellWeb TRP® Fact Sheet No 2.

CellWeb TRP® and Pollution

How CellWeb TRP® Deals With Catastrophic Oil Spills



How CellWeb TRP® Deals With Pollution

Where possible a permeable pavement system should always be constructed above the CellWeb TRP® system. The effective removal of pollution from runoff by permeable pavements is well known. Worldwide research has shown runoff that has passed through permeable pavements has low concentrations of pollutants.

Small spills of oil will be dealt with within the joints between the paving blocks and in the aggregate used within the system. However, large catastrophic spills are a different matter.

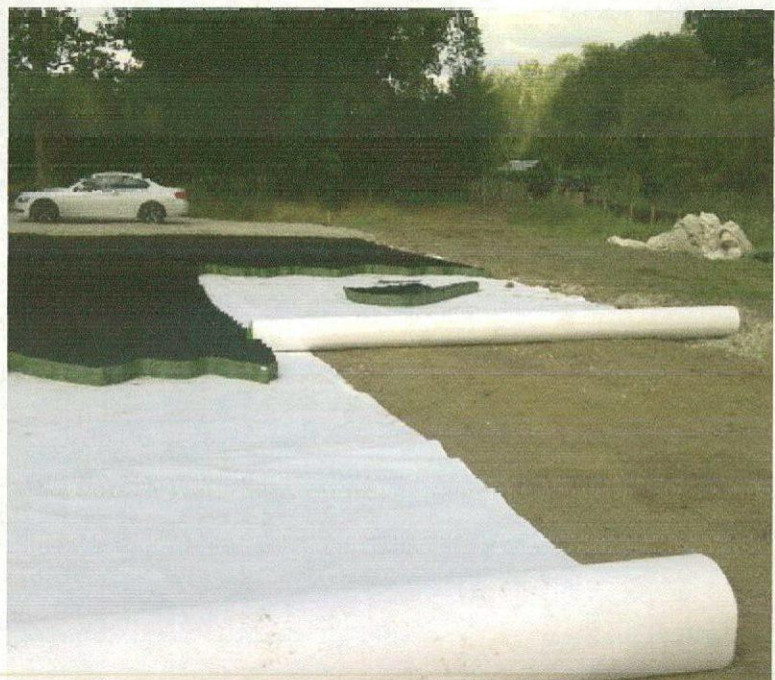
For more information on this subject see CellWeb TRP® Fact Sheet No 3.



Castle Gardens



Ambleside Lake District



Harcourt Aboretum

The Treetex® geotextile used in the CellWeb TRP® system has two functions. Treetex® separates the sub base aggregates from the soil beneath and it traps oil within its structure and allows it to degrade aerobically within the pavement construction. The structure, thickness and weight of Treetex® creates the perfect environment for this to happen. Most importantly tests prove that Treetex® will absorb 1.7 litres of oil per square metre, this is 4 times more effective than standard geotextiles.

Treetex® is an intrinsic part of the CellWeb TRP® system; and must be in conjunction with the CellWeb TRP® in order to guarantee the success of the system.

Please see page 6 for full details of the guarantee.

Geosynthetics CellWeb TRP® System:

A Proven No Dig Solution



Advice, Design and Product Selection

Geosynthetics Limited has been supplying the CellWeb TRP® system since 1998 and has vast experience in its application. No two contracts are the same and we understand the factors that need to be taken into account to specify the correct CellWeb TRP® product.

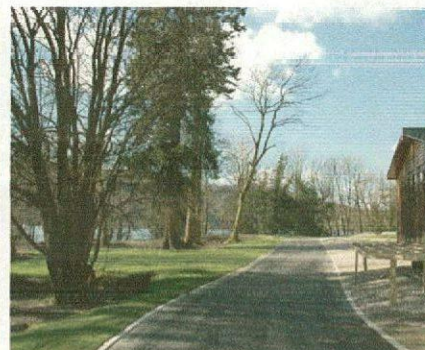
We provide a free consultation, design and advisory service to find the solution that is most cost effective and beneficial for your site. Our service includes product selection, engineering calculations, CAD drawings and full instructions to help you from project conception to completion.



*Fallbarrow Park, Windermere:
Prior to CellWeb TRP® Installation*



*Fallbarrow Park, Windermere:
CellWeb TRP® Installation*



*Fallbarrow Park, Windermere:
Completed CellWeb TRP® Installation*

Final Surfacing

The benefits of the CellWeb TRP® system can only be maintained if a suitably porous final surface is selected. An ideal surfacing is the Golpla grass reinforcement and gravel retention system, a visually attractive surface that has the advantage of being fully porous. Alternatives include block paviors, porous asphalts and loose or bonded gravel.

Always Use CellWeb TRP®

The CellWeb TRP® system is the only research backed system of its kind in the UK with a 100% success rate. CellWeb TRP® has been specifically developed for the Tree Root Protection market. The system is supported by 15 years of data and thousands of installations making it the system of choice for the majority of Tree Officers and Arboriculturists in the UK.

CellWeb TRP® is uniquely identifiable. It is manufactured with a bright green panel on each side. When installed the green panels are laid adjacent, creating a green band across the construction.



Woodcock Hall, Yorkshire

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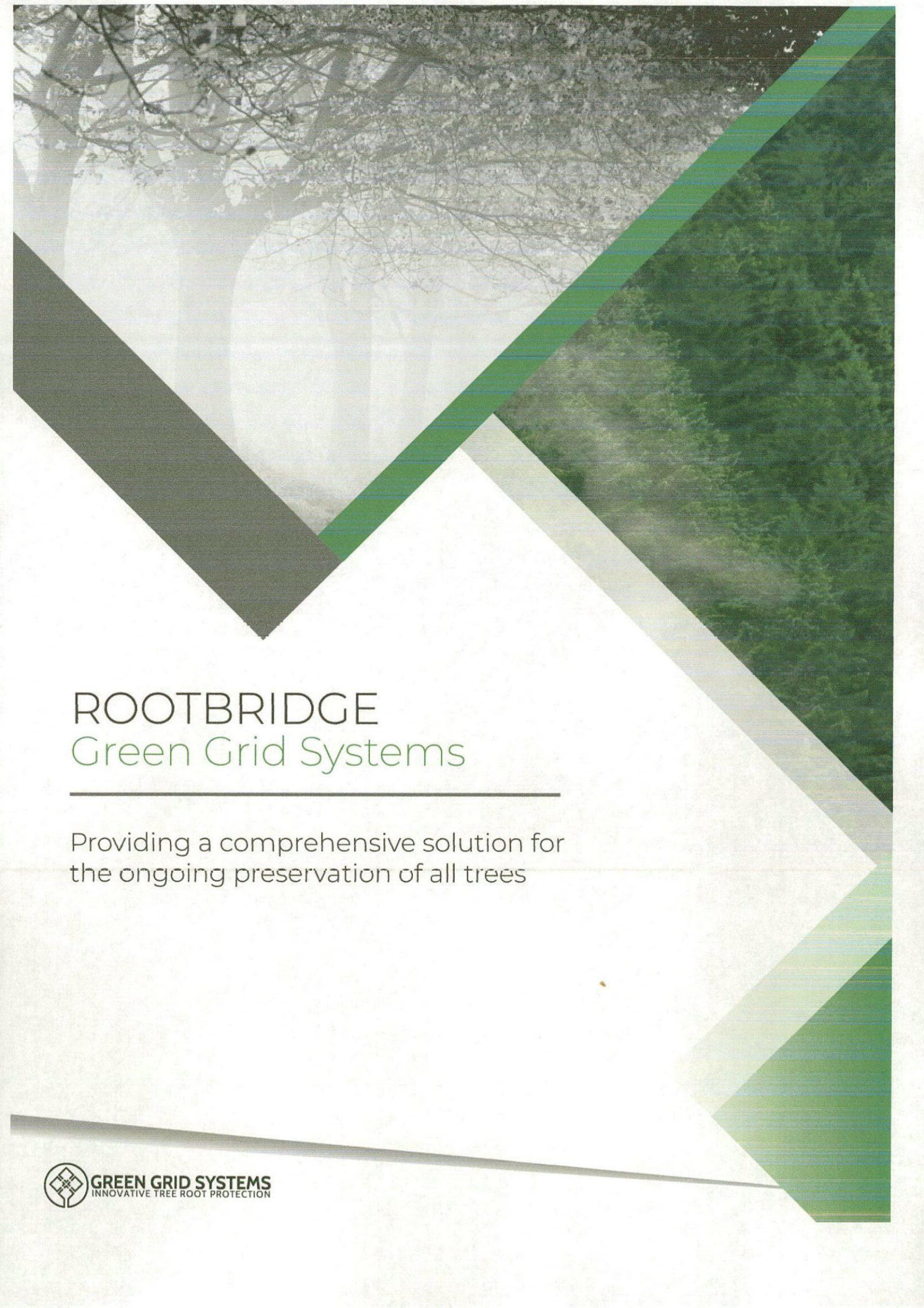


Please call **01455 617 139**

or email sales@geosyn.co.uk for more technical advice.

Visit our website www.geosyn.co.uk for further information.

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The background of the entire page is a photograph of a dense tree canopy, viewed from below, looking up. The image is partially obscured by large, semi-transparent geometric shapes: a dark grey triangle on the left, a green triangle on the right, and a light grey triangle at the bottom right. These shapes create a modern, architectural feel.

ROOTBRIDGE

Green Grid Systems

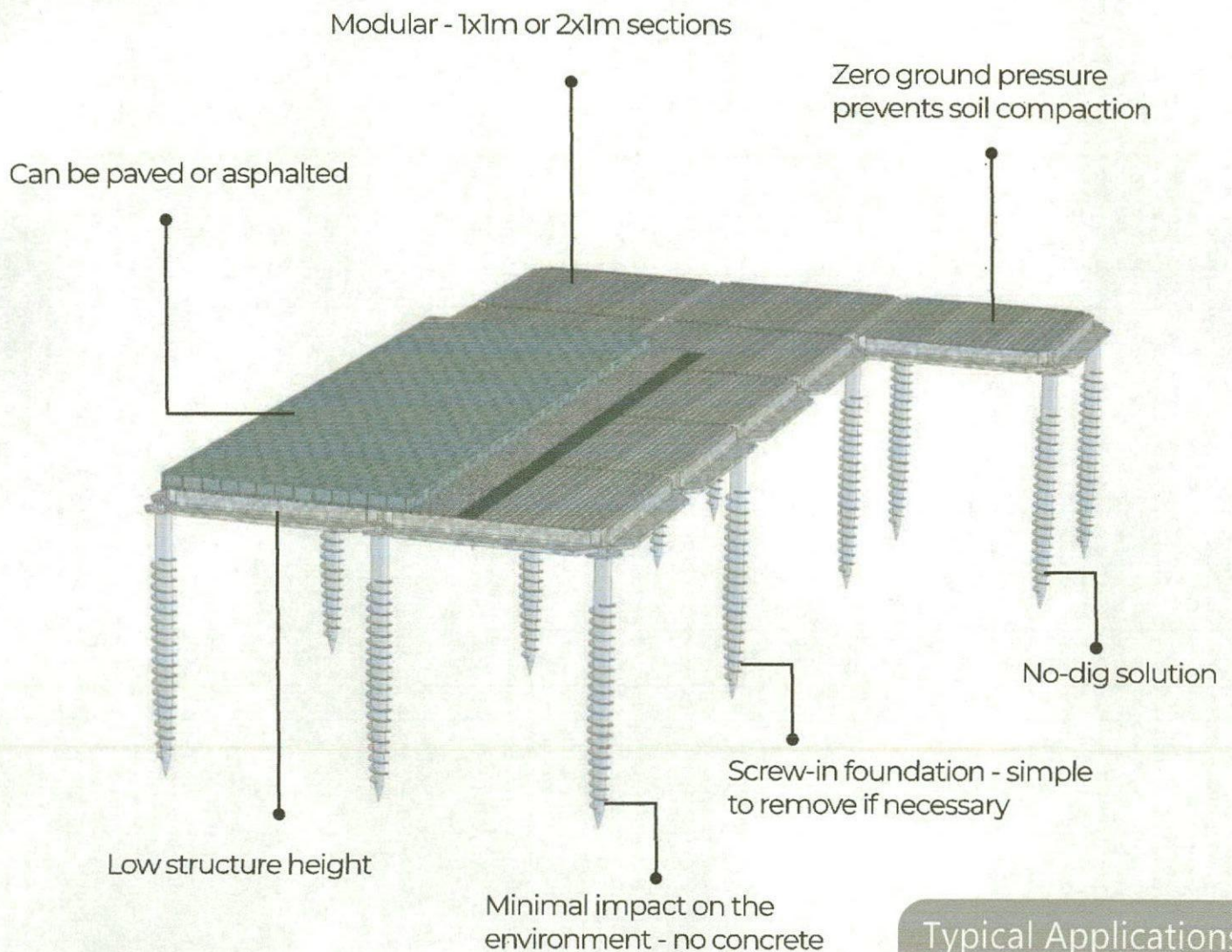
Providing a comprehensive solution for
the ongoing preservation of all trees

ROOTBRIDGE SS7.5-57

Innovative tree root protection

What is RootBridge?

The RootBridge System is a steel frame construction, that essentially bridges the RPA of the tree. The main platform area of the system sits on a foundation of groundscrews, ensuring a no-dig, no-concrete and no soil compaction solution.



Typical Applications

- Carparking areas
- Walkways
- Driveways
- Access roads

Variants/Capability



Pedestrian Duty - SS7.5

Designed for use in pedestrianised areas and to create pedestrian access across otherwise under utilised space in the RPA, this variant is the thinnest option, only adding 60mm to the existing ground level.



Light Duty - SS15

Designed for light vehicular traffic - vehicles up to 4 ton, the light duty system is used mainly for parking spaces and driveways.



Heavy Duty - SS50

The heavy duty version has been designed to take a point load of 50kN (approx 5 ton). This makes it best suited to access roads.



Extra Heavy Duty - SS57

The heaviest duty variant available - able to take axle loading up to 11 ton. This capability makes it suitable for articulated lorries up to 30 ton

Grid Finishes

The system is finished with press-lock grating panels. The 30x30mm mesh grids can be covered with a membrane, and an extra surface finish such as asphalt can be laid on top. Alternatively, heel-safe grating can be supplied with anti-slip serrations as the final finish.



Standard 30x30mm mesh



Heel-safe 11x33mm Mesh



Why are roots important?

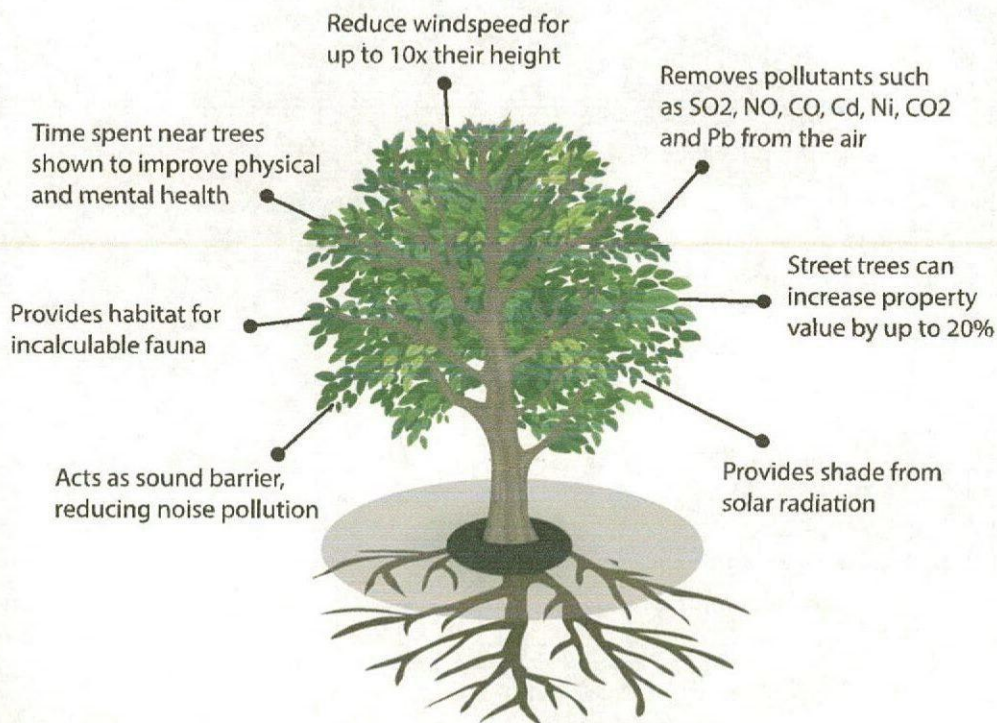
Trees depend on their roots to provide support and stability, as well as to draw in water, minerals and nutrients from the soil to support growth. It is the fine root hairs on the tips of the roots that are responsible for the latter. These tips are very sensitive, and rely on consistent soil conditions to perform their duties.

One of the primary dilemmas affecting the rooting environment of trees is soil compaction in the RPA (root protection area). Soil typically has 50% pore space, and reducing this when soil is compacted can have a serious impact on the water and air reaching the roots. When soil compaction occurs, the trees growth slows, and may reach a point where the tree itself dies.

What does RootBridge do?

The RootBridge system effectively bridges the RPA, transferring the load to the groundscrews. This means zero pressure is put onto the ground omitting the risk of soil compaction in the RPA.

Why are trees important?



Green Grid - The Brand

Founded on a knowledge and understanding of trees and their importance, we seek to offer a range of solutions for tree sustainability.

Our innovative product range is headed up with our flagship RootBridge product, and includes geosynthetic cellular confinement and ground reinforcing systems.



Light duty install in a carpark, heels-safe mesh finish.

'A lasting solution for existing tree root protection with simple installation and minimum impact on the tree and the rooting environment.'



GREEN GRID SYSTEMS
INNOVATIVE TREE ROOT PROTECTION

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