



Arboriculture Impact Assessment & Method Statement

Project:
22 Archway Road,
Huyton,
Knowsley

Date:
March 2021

Disclaimer:

Unless otherwise stated, tree inspections have been undertaken from ground level and using non-invasive techniques only. Comments upon the condition and safety of any tree relate to the condition of the tree at the time of the survey. It should be recognized that tree condition is subject to change due to, for example, the effects of disease, wind or nearby development works. Changes in land use are also significant in respect of risk assessment. Trees should therefore be inspected at intervals relative to identified site risks.

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Appendix 2: BS5837: 2012 Tree Survey Data Tables

Appendix 3: Tree Protection Plan Drawing MPT101.02.21

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Appendix 5: New access road surface detail

1.0 Introduction

- 1.1 MPTrees have prepared this Arboriculture Impact Assessment (AIA) further to the instructions of Mr D Singh, who seeks planning consent for development of land at 22 Archway Road, Huyton, hereafter referred to as the application site or the site.
- 1.2 The purpose of this AIA is to provide an assessment of the existing arboricultural resource on the application site, and of the significance of the potential impacts of any application proposal on the resource.
- 1.3 To assess the significance of the potential impacts of any proposal, all trees on the application site were surveyed by a qualified surveyor using ground based, non-invasive, visual survey techniques. The surveyor recorded the baseline arboricultural conditions present in accordance with British Standard 5837: 2012 *Trees in relation to construction – Recommendations*. The full tree survey details recorded in the format recommended by BS5837: 2012 can be found at appendices 1 & 2 of this report.

2.0 Site Description

- 2.1 The application site is currently a semi-detached, vacant residential property. There are no trees on the application site. However, there are two mature trees that are located close to site boundaries on adjacent property. The current site layout and full details of all trees surveyed for this assessment can be found at appendices 1 and 2.

3.0 Application Proposal

- 3.1 Mr Singh seeks planning consent for the renovation and extension of the existing building on the application site with new car parking and access road and associated hard and soft landscaping. The proposed site layout can be seen on drawing MPT0101.02.21 at appendix 3.

4.0 Impact Assessment

- 4.1 There will be no direct tree loss as a result of this application.
- 4.2 Trees T1 and T2, located on adjacent property, offer relatively high levels of visual amenity to the local landscape and are afforded protection by the Knowsley Council Tree Preservation Order NO.2 1975.
- 4.3 As can be seen on the draft tree protection plan at appendix 3, the application proposal will require construction activities within the RPA of retained trees. Table 1 below gives detail of the activities proposed, the potential impacts and the % of the total surface area of RPA impacted.

Table 1: Retained tree impacts

Tree Ref:	Activities and Potential impacts	% of RPA impacted
T1	• Construction of access road • Passage of men and machines • Soft landscaping • Root loss and damage	24.2%
T2	• Construction of new access road • Demolition and construction of new foundations and extensions • Passage of men and machines • Soft landscaping • Root loss and damage	49.23%

- 4.4 Soils on site are classified by the National Soils Resource Institute as Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils with impeded drainage. There is the potential therefore for impediment to gas and moisture exchange by tree roots on site through ground compaction.

4.5 From Table 1, it can be seen that in terms of % of total surface area of RPA impacted, there will potentially be significant root damage and loss to retained trees from the proposed development. This amount of potential root damage and loss will have a potentially significant negative impact on retained trees through the long-term deterioration in their condition. This will potentially result in a significant negative impact on the amenity benefits that trees adjacent site afford the local landscape. In addition, from drawing MPT101.02.21 at appendix 3, it can be seen that this potential root loss will be at less than 3 metres distance from T1. Potential root damage and loss at this distance, although on the non-prevailing wind side, will potentially impact on its stability.

5.0 Recommendations

5.1 It is recommended that to mitigate the potentially significant negative impacts on trees adjacent site, the Method Statement at section 6 of this report will need to be agreed and understood by all relevant parties before the start of any development activities. Provided that the Method Statement is agreed and implemented the potential negative impact on trees adjacent site will be minor. There are therefore no arboricultural reasons why this application proposal cannot be granted planning permission.

6.0 Tree Protection Method Statement

6.1 Relevant Contact Details

Client / Developer: Mr D Singh

Site address: 22 Archway Road, Huyton, Knowsley

Site agent: Unknown

Local Planning Authority: Knowsley Council

Arboriculture Planning Officer: Unknown, 0151 443 2400

Project Arboriculturist: Matthew Potier, MPTrees, 07575 360202, matthew@mptrees.com

6.2 Tree Works Specification

- Crown raise canopy of T2 by 4m from existing to achieve 6m clearance above height above ground level.
- Pruning to be carried out by a fully insured and qualified tree work contractor working as a minimum to the standards recommended by BS3998: 2010.

6.3 Tree Protection Specification

6.31 Demolition of existing structures and hard surfaces:

- work with machine body positioned outside of RPA of trees always
- pull down existing structures away from trees
- carefully break hard surfaces in RPA and lift and remove from RPA using hand tools only
- surface scrape and removal of vegetation layer only permitted in soft landscaped areas of RPA
- exposed roots to be treated as per section 6.32.

6.32 Treatment of roots exposed during demolition:

- exposed roots less than 25mm diameter to be pruned flush with the edge of excavations using clean, sharp by-pass loppers or secateurs, or sharp saw
- exposed roots greater than 25mm diameter or occurring in clumps to be pruned only after consultation with project Arboriculturist.
- exposed roots to be retained to be covered with damp hessian sacking or similar.
- exposed roots cut root ends to be covered with damp hessian sacking or similar.
- covering to be removed prior to backfilling.

- retained roots under new road to be covered with layer of non-compacted clean road stone and sharp sand (builders sand not be used due to high salt content) prior to installation of RPA ground protection as per section 6.34.

6.33 New access road construction within RPA T1 and T2:

- level area using sharp sand
- place Geo-textile layer
- pin in place cellular confinement system, minimum depth 100mm (see appendix 4 for detail)
- fill cells with clean angular road stone with no fines.

6.34 Excavation for foundations within RPA of T2:

- excavation for new foundations to be undertaken with machine body facing T2 and digging away from tree
- remove debris from RPA, no storage of any materials within RPA
- exposed roots to be treated as per section 6.32

6.35 New hard surfaces:

- new access road top surface to be 'Ultradrive' porous tarmac (see appendix 5 for detail) constructed on top of cell-web and stone layer
- maintenance strip top surface around new building to be semi-porous e.g., block paving, constructed on top of cell-web and stone layer.

6.37 New soft landscaping:

- no excavations other than surface vegetation strip permitted
- use of hand tools only
- no machine access within RPA permitted
- all soft landscaping operations to be in accordance with the recommendations of BS4428: 1989 - Code of practice for general landscape operations (excluding hard surfaces)
- good quality top soil, free from contaminants, conforming to BS3882: 2015 - Specification for topsoil, to be applied at no greater depth than 150mm within RPA.

6.41 Sequence of Implementation of Tree Protection Measures

- a. Nomination of an Arboriculture Clerk of Works (ACoW).
- b. Nominated site agent to be briefed on the content of this document and to be fully aware of its implications prior to the start of site activities.
- c. Carry out tree works as per section 6.2.
- d. Install tree protection fencing as per section 6.31 and drawing MPT101.02.19.
- e. Demolish existing structures and hard surfaces as per section 6.32.
- f. Treat roots exposed during excavations as per section 6.33.
- g. Install RPA ground protection as per section 6.34.
- h. Excavate foundations within RPA of T4 as per section 6.35.
- i. Construct new hard surfaces as per section 6.36.
- j. Remove tree protection fencing.
- k. Carry out soft landscaping as per section 6.37

6.5 Monitoring of Tree Protection Measures

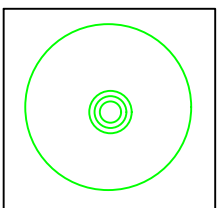
The project Arboriculturist is to be notified by nominated site agent at the following times and is to visit site when notified to ensure agreed specification has been implemented:

- I. At completion of agreed tree works and installation of tree protection fencing.
- II. After demolition/removal of hard surfaces stage and installation of RPA ground protection.
- III. During excavations for foundations within RPA of T2.
- IV. At removal of tree protection measures. Any remedial works required to retained trees post-construction will be notified by project Arboriculturist to client and if required, to Knowsley Council.

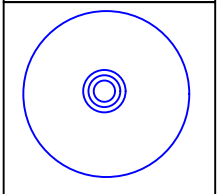
Appendix 1

ALL COORDINATES RELATED TO LOCAL GRID LOCATED TO OS NG BY BEST FIT TO DETAIL, EXTRACTED FROM OS DIGITAL DATA. DO NOT SCALE FROM THIS DRAWING AS PRINTING MAY DISTORT THE SCALE. WORK FROM FIGURED DIMENSIONS ONLY. PLAN NOT FOR CONSTRUCTION PURPOSES.

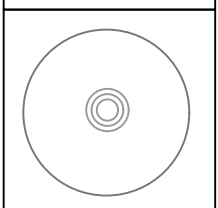
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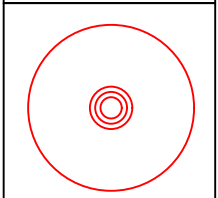
Category A Trees/Hedges as per BS5837: 2012 .



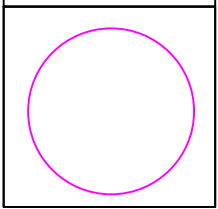
Category B Trees/Hedges as per BS5837: 2012 .



Category C Trees/Hedges as per BS5837: 2012 .



Category U Trees/Hedges as per BS5837: 2012 .



Nominal Root Protection Area as per BS5837: 2012.

Notes:

Plan to be read in conjunction with MPTrees AIA&AMS, 22 Archway Road, March 2021.



	MP	CS	MP		16.03.2021
VERSION	DRWN	CHKD	REVD		DATE
DRAWING NO.				MPT101.01.21	

	101 Marsden Ave., St Helens, Merseyside, WA10 4DY
	Tel: 01744 604250 / 07575360202
	e-mail: matthew@mptrees.com
	www.mptrees.com

CLIENT:
Mr D Singh
LOCATION:
22 Archway Road, Huyton
DRAWING TITLE:
Tree Constraints Plan
SCALE:
1:100 @ A1

Appendix 2

Project: 22 Archway Road, Huyton

BS5837: 2012 Tree Data Tables

Date: 16/03/2021

Key:

T. No.: Tree number (T = Tree, G – Group, W = Woodland, H = Hedge, Cpt. = Compartment)

Ht: Height of tree/group of trees measured in meters (to nearest 0.5m)

Species: Common name used

Stem DBH (Diameter at Breast Height): Measured at 1.5m above ground level (in mm to nearest 10mm)

RPA Area & Radius: Root Protection Area dimensions in m2/m

Branch Spread: in meters to each of the four cardinal points (to nearest 0.5m)

Crown Clearance: Canopy ground clearance (to nearest 0.5m)

Age Class: Y=Young, EM=Early Mature, M=Mature, FM=Fully Mature, D=Dead

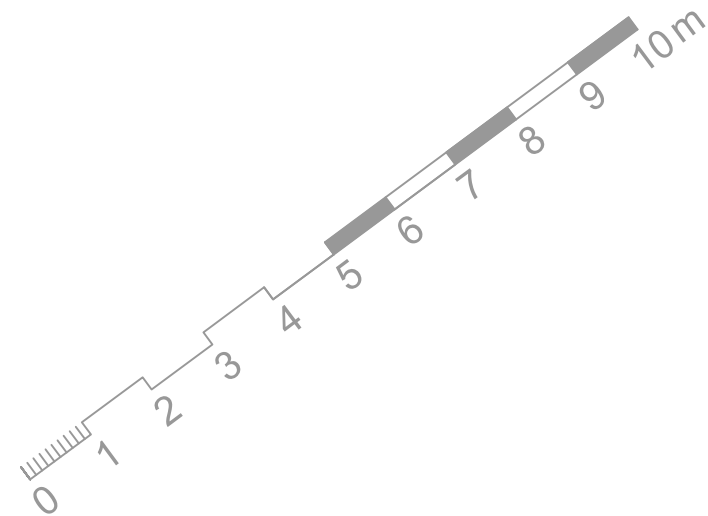
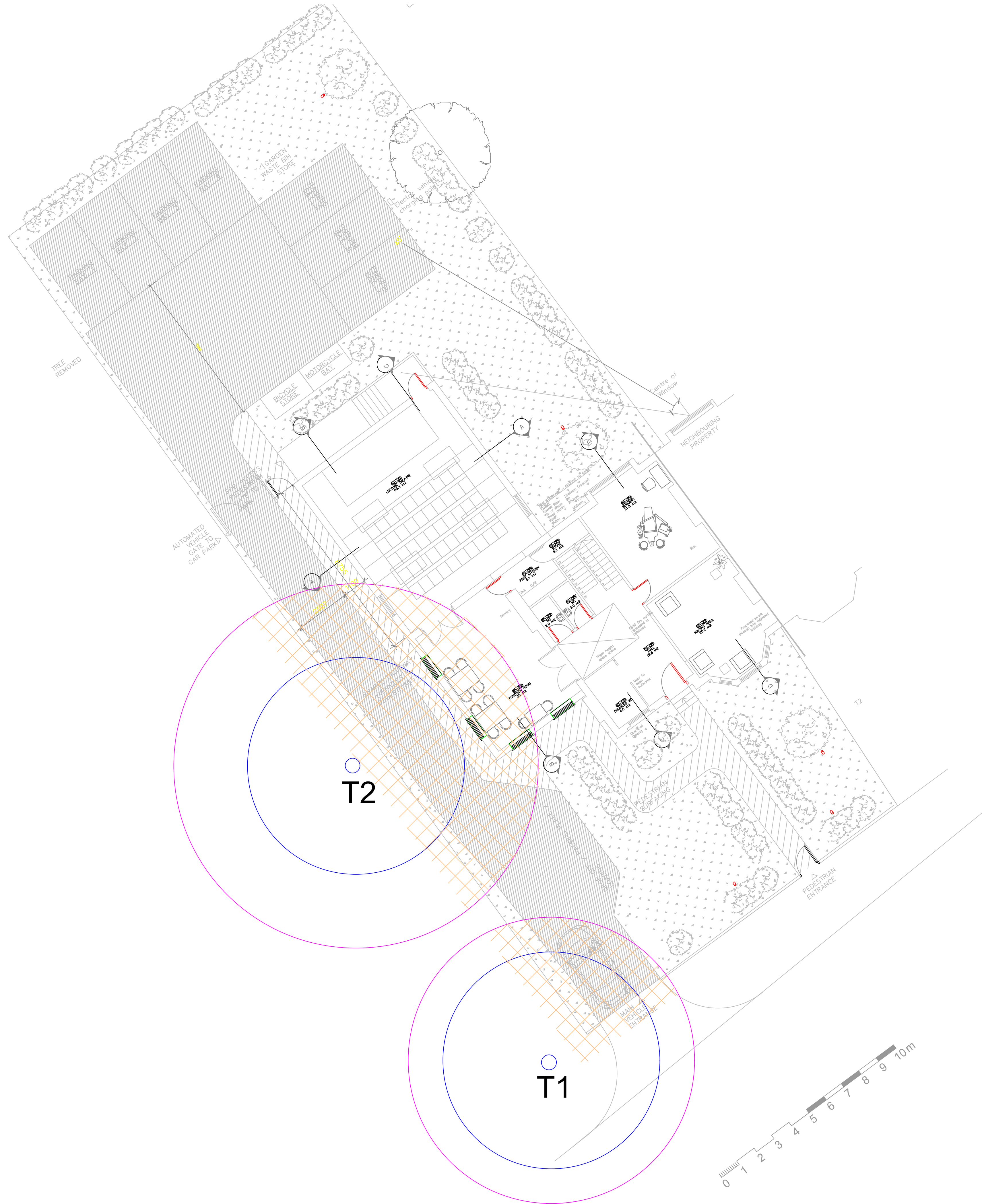
Observations and Recommendations: General observations and preliminary recommendations made in respect of known/intended use of the site

Est. (yrs): Estimated remaining contribution in years

Cat.: Tree Category in accordance with Table 1 of BS5837: 2012

T. No	Species	Ht.	Stem DBH	RPA Area & Radius	Branch Spread				Crown Cl.	Age Class	Observations & Recommendations	Est. Yrs	Cat.
					N	S	E	W					
T1	Horse Chestnut	11	550	136.85	5	3	4	4	5	EM	Twin stem at 1.5m. Tree off-site. Dbh estimated. Will require protection to BS5837. Relatively high level of visual amenity benefit value to local landscape.	40+	B1
				6.60									
T2	Common Lime	18	750	254.47	3	5	6	5	3	M	Previously pollarded at 4m with multiple codominant leader regrowth. Cavities from pruning wounds at base of leaders. Deadwood branches typical of species. Tree off-site. Dbh estimated. Will require protection to BS5837. Will require crown lifting to east to facilitate proposal. Recommend re-pollard. Relatively high level of visual amenity benefit value to local landscape.	60+	B1
				9.00									

Appendix 3



ALL COORDINATES RELATED TO LOCAL GRID LOCATED TO OS NG BY BEST FIT TO DETAIL, EXTRACTED FROM OS DIGITAL DATA.
DO NOT SCALE FROM THIS DRAWING AS PRINTING MAY DISTORT THE SCALE. WORK FROM FIGURED DIMENSIONS ONLY

KEY

- Category A Trees as per BS5837: 2012 proposed for retention.
- Category B Trees as per BS5837: 2012 proposed for retention.
- Category C Trees as per BS5837: 2012 proposed for retention.
- Nominal Root Protection Area as per BS5837: 2012 of trees proposed for retention.
- Refer to AMS for demolition and construction activities in these areas.

- Notes:
- Plan to be read in conjunction with MPTrees AIA&AMS, 22 Archway Road, March 2021.

	MP	CS	MP		16.03.21
VERSION	DRWN	CHKD	REVD		DATE
DRAWING NO.				MPT101.02.21	
				101 Marsden Ave., St Helens, Merseyside, WA10 4DY Tel: 01744 604250 / 07575360202 e-mail: matthew@mptrees.com www.mptrees.com	

CLIENT:
Mr D Singh
LOCATION:
22 Archway Road, Huyton
DRAWING TITLE:
Draft Tree Protection Plan
SCALE:
As shown @ A1

Appendix 4



Geosynthetics

Cellweb® TRP

Technical Support Package

What is Cellweb® TRP



What is Cellweb® TRP?

Cellweb® TRP is a cellular confinement system specifically designed for tree root protection. The system creates a stable, load bearing surface for traffic or footfall whilst eliminating damage to roots through compaction and desiccation of the soil.

The Cellweb® TRP system comprises of three specific elements; Cellweb®, Treetex™ pollution control geotextile and an infill of clean angular stone. The system has been designed combining the best possible products to create an unparalleled solution for tree root protection applications.

Cellweb® TRP is a no dig solution that ensures that the load placed upon it is laterally dissipated rather than transferring to the soil and roots below. The use of Treetex™ pollution control geotextile allows for drainage and separation whilst preventing contaminants from reaching the roots.

The walls of the cells are perforated and when combined with an infill of clean angular stone this enables free movement of water and oxygen ensuring that supplies to the tree roots are maintained.

What makes Cellweb® TRP different?

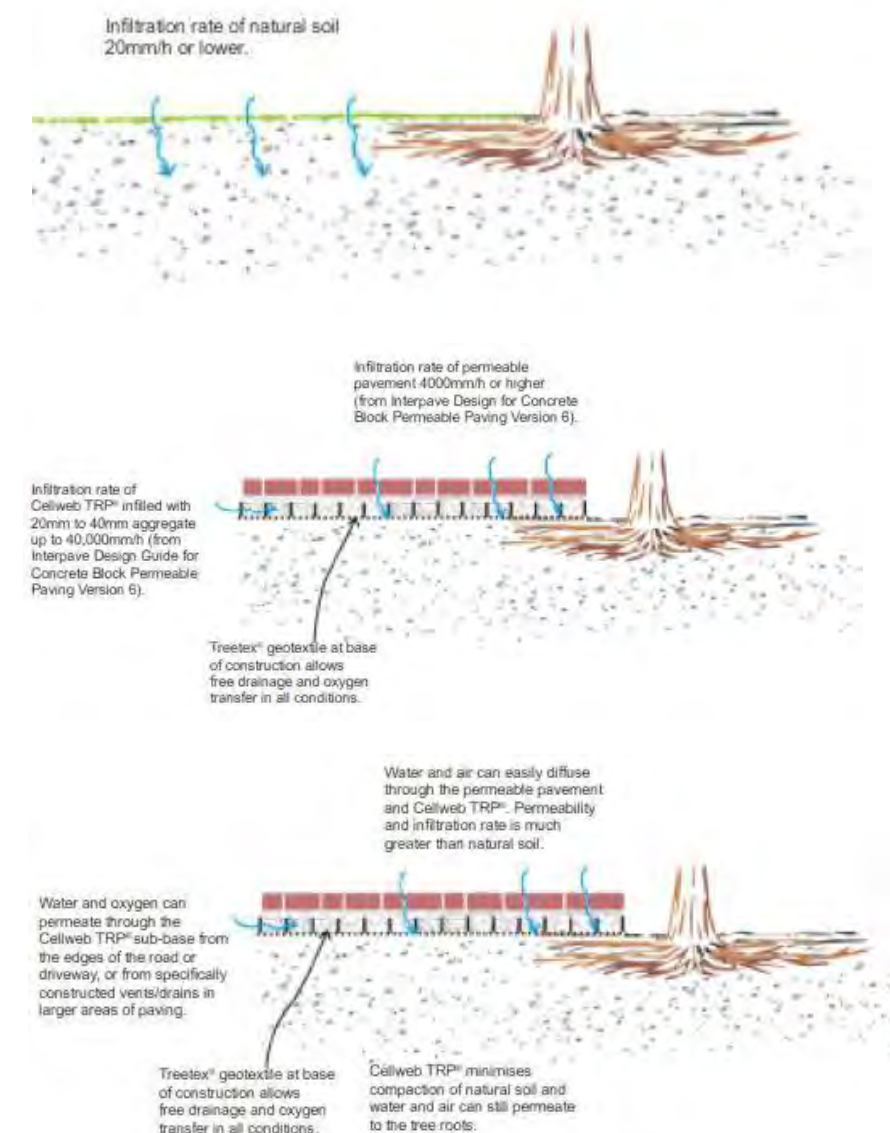
From the drawing board to installation, we are here to help.

We have been supplying the Cellweb® TRP system since 1998 and our technical team have vast experience with tree root protection and the associated legislation.

Delivering complete peace of mind to customers is our number one priority. As part of this customer care package we offer free on site consultations, technical recommendations and on site installation guidance on all projects.

Our in house Engineering Team provide site specific recommendations to ensure the solution used is cost effective and environmentally sound.

For more information on Cellweb® TRP or Geosynthetics Limited please contact our sales office on 01455 617139 or visit www.geosyn.co.uk.



Benefits Of Our Guarantee

Tried and tested
Cellweb® TRP is the only guaranteed system available today which has also the been independently tested and proven to prevent over compaction of the sub-soils and roots. Customers have been using the system since its inception without failure.

Full tree root protection services
Combining Cellweb® TRP with our in-house arboriculturalists and design engineers gives our customer the assurance that all their specific requirements will be met.

Peace of mind
The guarantee covers the replacement of not only the Cellweb® TRP system but also the tree(s), giving the customer complete peace of mind.

Helping to build the right solution
Our in-house engineers will provide free site specific technical recommendations to value engineer the project.



Obtaining a Guarantee

Provide a copy of the Arb Report
If an arb report hasn’t already been produced, we would advise approaching an Arboricultural Association registered consultant to have a full survey completed.

Complementary Technical Recommendation (TR)
We offer all our customers full use of our engineering services free of charge. For all guaranteed projects, we provide a full technical recommendation and calculations which ensure the optimum solution is provided.

Scope Agreement
Once we have received the arb report and technical recommendation, we will work with our customer to specify which trees can be covered under the guarantee using a scoping agreement.

Installation
All we ask is that our customers follow our installation guide alongside the technical recommendation provided. Once completed we will ask for a customer signature agreeing to the terms and conditions of the guarantee.

Certification
Upon your agreement with the terms and conditions, we will send out a guarantee certificate alongside a copy of all of the details of the project.



NBS Specification Clause

NBS Specification Clause

- I. The Tree Root Protection System shall be Cellweb® TRP by Geosynthetics Ltd 01455 617139
- II. The Tree Root Protection System shall include Cellweb® TRP 3 dimensional cellular confinement panels measuring 8.1m in length x 2.56m wide. The system also includes a Treetex™ Pollution Control Geotextile.
- III. The Cellweb® TRP shall incorporate perforated cell walls to provide lateral flow and frictional interaction between infill material and adjacent cells. Perforations shall be 11% of the cell wall surface area for Cell height of 100mm and 200mm and 16% for Cell height of 75mm and 150mm.
- IV. The Cellweb® TRP shall incorporate a green identification strip along the length of the panel.
- V. The seam peel strength of the cells shall be as shown in the following table:

Cell Height (mm)	75	100	150	200
Seam Peel Strength (N)	1065	1420	2130	2130
U.S.Army Corps of Engineers. Technical report GL86-19, Appendix A				

- VI. The expanded cell size (width x length) shall be 259mm x 224mm.
- VII. The infill material shall be a clean angular stone typically 40mm to 20mm or 20mm to 4mm.
- VIII. The system shall be installed strictly in accordance with the manufacturers installation instructions.
- IX. Fact Sheets 1,2,3,4,and 5 provide factual evidence of the Cellweb® TRP and Treetex™ systems performance in the application of Tree Root Protection.
- X. The system shall incorporate a 10 year guarantee which covers the replacement of any dead tree(s) up to a value of £10,000 per tree, as well as a replacement of the system which has failed up to the value of £50,000.

Product Data

Weight Capabilities

- 75mm Cellweb® TRP confinement system
For foot and cycle traffic. This also provides a control measure for crust compaction
- 100mm Cellweb® TRP confinement system
For domestic traffic, such as cars and transit vans up applicable up to a 6t gross weight
- 150mm Cellweb® TRP confinement system
For emergency access and refuse collection applicable up to a 30t gross weight
- 200mm Cellweb® TRP confinement system
For H.G.V and construction traffic applicable up to a 60t gross weight

Note: This is a general guidance for the depth of Cellweb® TRP according to Gross Vehicle Weight for a firm and stable subgrade (CBR>3%).
If the ground conditions are poor and/or unstable please contact Geosynthetics Ltd to provide a site specific design.

Treetex™

Treetex™ is a heavy duty needle punched geotextile fleece. Manufactured from polypropylene, Treetex™ is ideal for use in a Tree Root Protection system as it is easily moulded to the shape of the aggregate and has been proven to absorb 1.7 litres of oil per m2 ensuring that the roots are not damaged by pollutants from the surface.

Clean Angular Stone

We recommend using a 4/20 mm clean angular stone type 4/20 mm (preferred) or 4/40mm to allow water permeation and gaseous exchange within the rooting environment.
(*) Please contact Geosynthetics Ltd for further information on clean angular stone.

Aggregate gradings for sub-base materials to BS EN 12620

Sieve Size (mm)	Percentage Passing (%)	
	Coarse aggregate	Coarse aggregate
	4/40	4/20
80	100	-
63	98-100	-
40	90-99	100
31.5	-	98-100
20	25-70	90-99
10	-	25-70
4	0-15	0-15
2	0-5	0-5
1	-	-

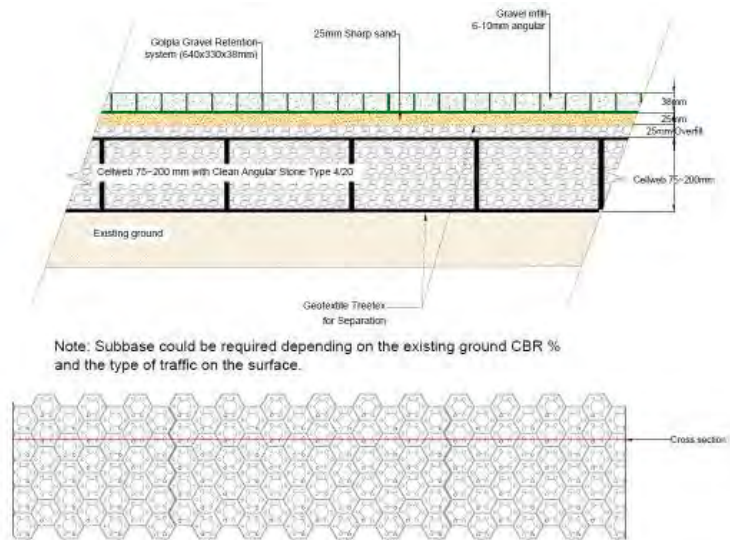
Ancillary Products - Fixing Pin

Fixing Pins	
Cellweb® Pins	
Geosynthetic Cellweb® pins are specifically manufactured to pin the Cellweb® system in place prior to fill. They are a 700mm long 12mm profiled bar with a 100mm return. Due to the heavy duty application they are the largest and strongest pins we manufacture.	
Cellweb® Stapler	
Cellweb® stapler rapid heavy duty 31 stapler.	
Cellweb® Staples	
Cellweb® staples 10mm staples 5000 per box.	

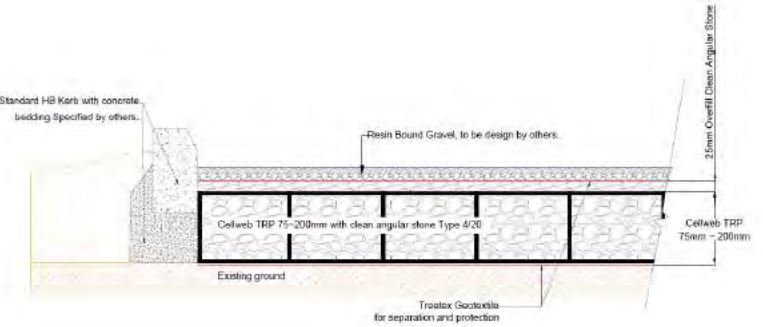


Surfacing Options

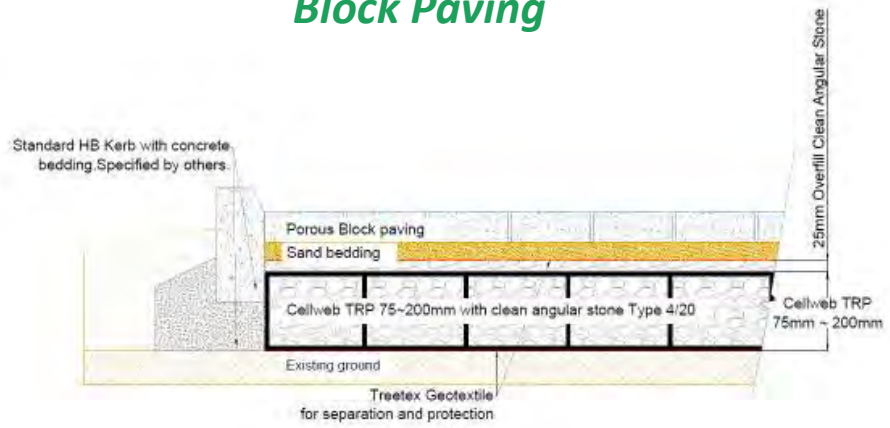
Golpla® Grass & Gravel Pavers



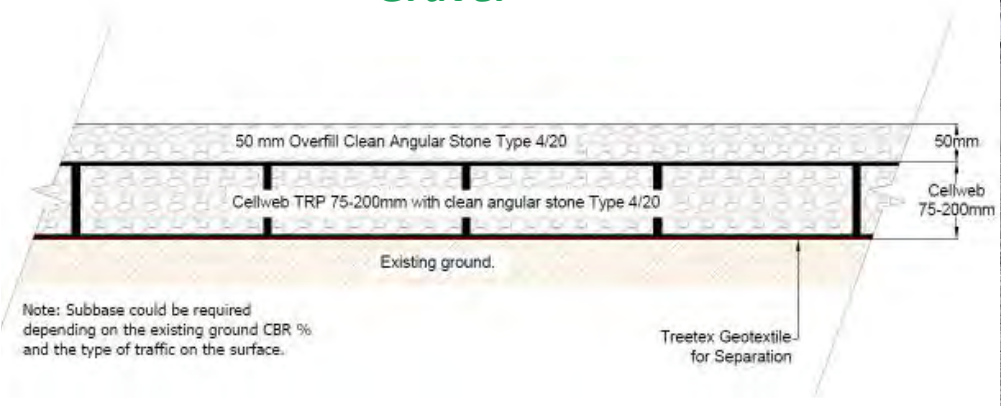
Resin Bound Gravel



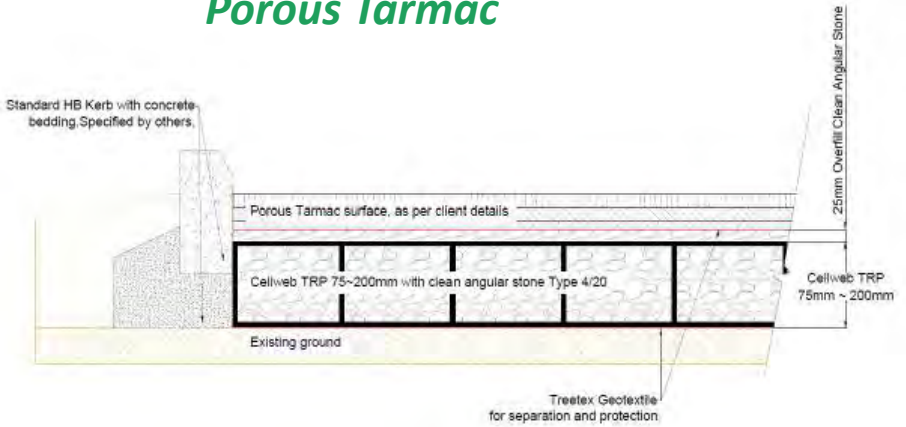
Block Paving



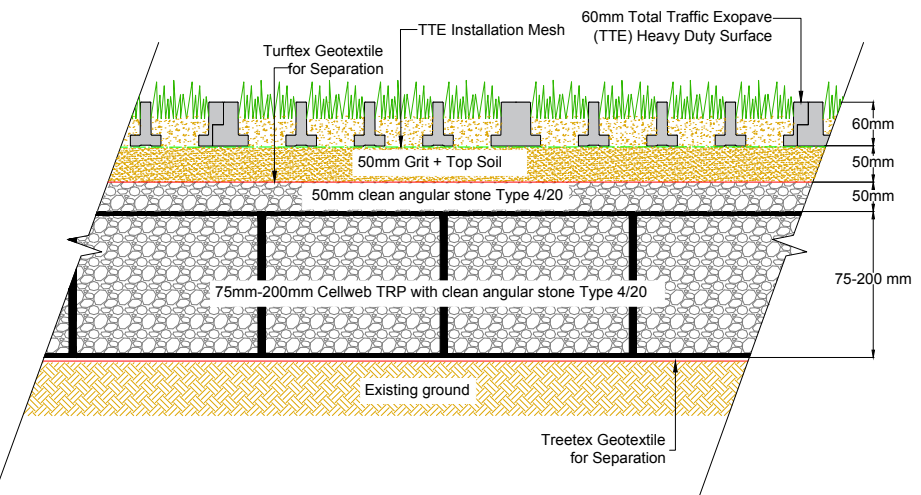
Gravel



Porous Tarmac

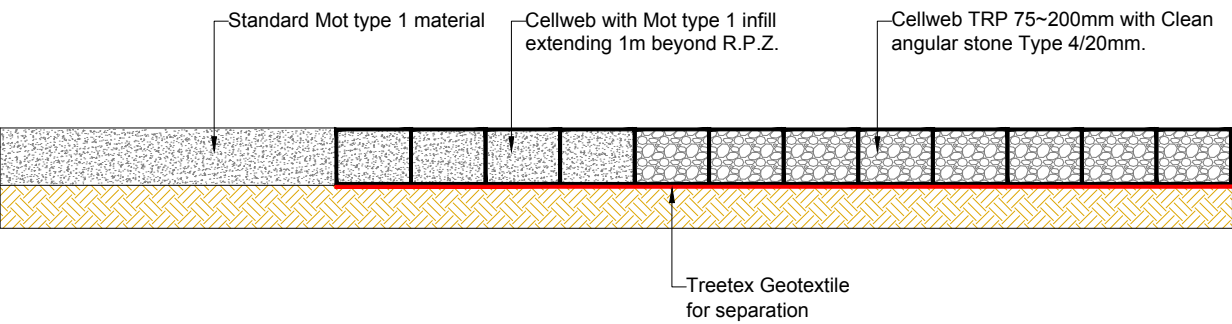


TTE® Heavy Duty Pavers

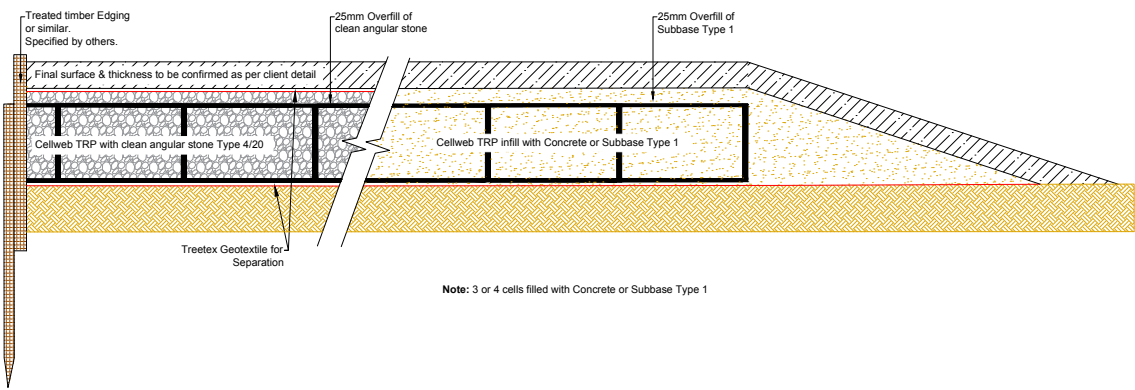


Edging and Transition Details

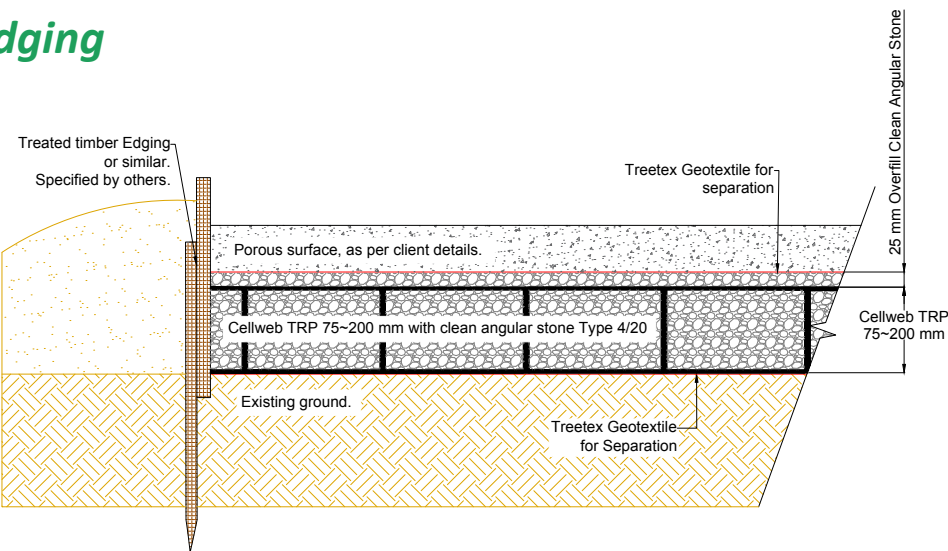
Transition Detail (Flat)



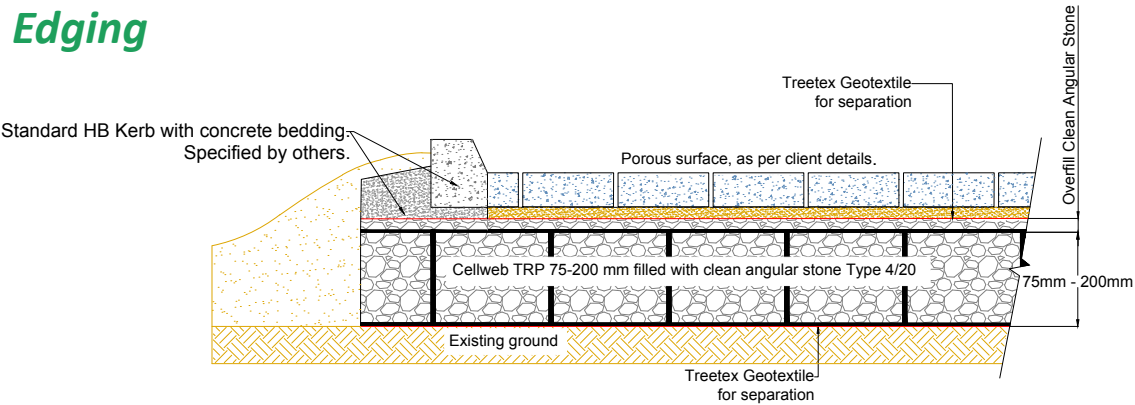
Transition Detail (Ramp)



Timber Edging



Kerb Edging



Adopted Roads and Footpaths



Cellweb® Tree Root protection is the UK's market leading tree root protection system and is widely specified for the construction of new hard surfaces within root protection areas in accordance with BS5837.

Difficulties when specifying the system often occur for the construction of public roads, footpaths and car parks where there is a requirement for the local authority to take responsibility for the maintenance of the new structure and formally adopt it.

The following page shows examples of where new hard surfaces constructed using the Cellweb® TRP system have been adopted by local authorities. This document is designed to provide examples to specifiers of the system and local authorities.

This document is designed to be used in conjunction with technical advice and site specific recommendations which are also available free of charge from Geosynthetics Limited.

Adopted Roads and Footpaths

Case Study

Cellweb®TRP

Helping to Protect Ancient Trees



Castle Gardens, Leicester

Location:	Castle Gardens Castle view Leicester
Project details:	This project was undertaken by Leicester City Council in 2015. The aim of the project was to create a new access and footpath from St Nicholas Circle in the centre of Leicester down into the Castle Gardens. This would create improved access to the Castle Gardens and enable the public to pass through the gardens to access other parts of the city. The project required thoughtful design to overcome significant changes in levels within the root protection areas of several mature trees and utilise Cellweb® TRP as a no dig solution. A full case study is available on this project.
Architect:	Levitate Architecture and Design Studio
Council:	Leicester City Council

Stoke Road, Norfolk

Location:	Stoke Road Poringland Norfolk NR14 7JL
Project details:	This no dig access road has been approved for formal adoption by Norfolk County Council. The road currently provides access to a newly constructed doctor's surgery, but will ultimately become the access to approximately 100 new homes to be built by developers David Wilson Homes. The road will be formally adopted on completion of the development.
Architect:	Plandescil Consulting Engineers
Council:	Norfolk County Council

Stanford in the Vale

Location:	Stanford in the Vale Faringdon Oxfordshire
Project details:	This footpath which runs adjacent to the railings was constructed on a David Wilson Homes development, to protect the roots and rooting environment of the Willow seen in the photograph. Both the Cellweb® TRP footpath and the road are surfaced with permeable blocks and has been adopted under a section 38 agreement by Oxfordshire County Council.
Architect:	Infrastruct CS Ltd
Council:	Oxfordshire County Council

Location:

Calke Abbey
Ticknall
Derby
Derbyshire
DE73 7LE

Project Description:

Provide a solution to prevent further die back of 'The Old Man of Calke' at Calke Abbey



Technical Requirements:

- Solution to alleviate existing soil compaction and encourage decomposers
- To minimise further soil compaction

Installer:

Geosynthetics Limited
National Trust

'The Old Man of Calke' is Calke Abbey's oldest tree and is thought to be up to 1200 years old. With the average age of large oak trees in Britain being 200 years it certainly is the 'Old Man' of oak trees. Put into context, this means that this tree would have been 200 years old when William the Conqueror arrived in Britain.

Many years of heavy footfall had caused a significant increase in soil compaction beneath one side of the tree. This had resulted in reduced water and oxygen availability to roots beneath this compacted ground. This was reflected in the crown, which was displaying accelerated and significant die back on the footpath side. A solution needed to be found to alleviate the existing soil compaction and minimize further future compaction, ultimately preventing further die back.

Geosynthetics' engineering team and in house arboriculturalist worked with Brian Muelaner, the ancient tree advisor at the National Trust, to provide a solution to prevent the further decline of this ancient tree.

A 90mm layer of mulched wood chip was applied to the existing ground surface before the installation of the Cellweb®TRP system. This was used to encourage decomposers such as earth

worms to help alleviate the ground compaction and aerate the soil.

A layer of Treetex geotextile was then laid on top, acting as a separation layer and pollution control measure. Panels of Cellweb®TRP were then laid on top of the Treetex and infilled with a clean angular stone. The Cellweb®TRP would minimise any further compaction within the rooting environment, while decomposers would naturally aerate the ground, reducing soil bulk density. The use of Cellweb®TRP infilled with clean angular stone would also allow the continued permeation of water and gas exchange between rooting environment and atmosphere.

This whole project was designed, supplied and installed courtesy of Geosynthetics. The Geosynthetics Tree Root Protection Team donated their time, knowledge and products to ensure that this tree will survive for generations to come.



"This is an exciting new development in how to reduce compaction damage from vehicles and footfall to an ancient tree's roots, made possible by the generous donation by Geosynthetics in time, expertise and materials."

Brian Muelaner - Ancient Tree Advisor - National Trust



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Appendix 5

***ULTI**DRIVE*

POROUS

The ultimate porous driveway surface



ULTIDRIVE POROUS
is a porous asphalt
with excellent drainage
characteristics and
proven long term
durability.

Our driveways are under daily attack. As cars become more powerful, modern asphalt has to develop to cope with scuffing and abrasion from power assisted steering. In addition, fuel or oil spillages will quickly degrade standard bitumen binders.

ULTIDRIVE POROUS combines excellent drainage characteristics with long term durability using a modified binder which provides enhanced fuel resistance. It is a hard wearing permeable asphalt that eliminates the problem of surface water whilst meeting relevant local planning requirements.

ULTIDRIVE POROUS is available as a 6mm or a 10mm surface course and a 20mm and 32mm binder course providing effective drainage, whilst maintaining long term durability.

ULTIMATE
SOLUTIONS

ULTIMATE RESULTS

Proven performance

Using the latest Porous Asphalt technology and a modified binder, the open aggregate structure allows effective drainage and ensures no surface water ponding.

Faster completion

When used with a porous receiving course, ULTIDRIVE POROUS avoids the need for expensive additional drainage, thereby allowing quicker project delivery and reduced disruption to clients and end users.

Enhanced compliance

The porous structure acts as a short term reservoir for rainwater and reduces direct surface water run-off to meet the requirements of planning regulations and the Code for Sustainable Homes.

Ultimate solutions

Available as a porous surface and binder course for driveways and car parks. When combined with the Tarmac ULTIFLOW range of drainage aggregates, ULTIDRIVE POROUS offers a complete sustainable drainage solution.

Improved safety

Excellent drainage characteristics eliminate the problem of both standing water and ice patches that can typically occur in cold weather conditions.

HOW IT WORKS

ULTIDRIVE POROUS is an engineered asphalt that has been designed for excellent drainage and a long lasting finish.

Exceptional drainage

Traditional paved surfaces are laid to shed water. Unfortunately this can mean that drains are quickly overwhelmed after heavy rainfall. As a result, planning rules increasingly require proposals for large paved areas to include measures to reduce the risk of localised flooding.

Supplied to accredited contractors as a surface course and porous binder course, ULTIDRIVE POROUS offers a complete drainage solution for driveways and parking areas. The open structure means that rainwater quickly flows into the asphalt structure and is then slowly released into the ground, helping to avoid standing water and flooding.

Longer lasting finish

The modified binder in ULTIDRIVE POROUS improves workability and delivers a tough, durable finish with enhanced resistance to the stresses associated with power steering and oil spills. Effective aggregate interlock from the design and installation process means that ULTIDRIVE POROUS has a more open aggregate structure and excellent drainage characteristics



PROVEN PERFORMANCE

Private driveway - Oldham

CHALLENGE

With a steep gradient and stringent planning requirements, this private driveway presented the architect with a number of problems. The local planning department specified that measures were needed to control surface water run-off in order to help mitigate local flood risk.

SOLUTION

The contractor recommended ULTIDRIVE POROUS citing proven long term durability, ease of handling and impressive drainage characteristics.

RESULT

ULTIDRIVE POROUS was delivered and laid within the specified time frame, avoiding delays to the client's schedule. Its smooth, even finish complemented the design of the client's property and the permeable surface eliminated the need for additional ironwork.

Car parking area - Crewe

CHALLENGE

The parking area for this sheltered housing complex needed to be well drained and, maintain safety for vulnerable residents. Conventional approaches would have required additional excavation to install soak-aways.

SOLUTION

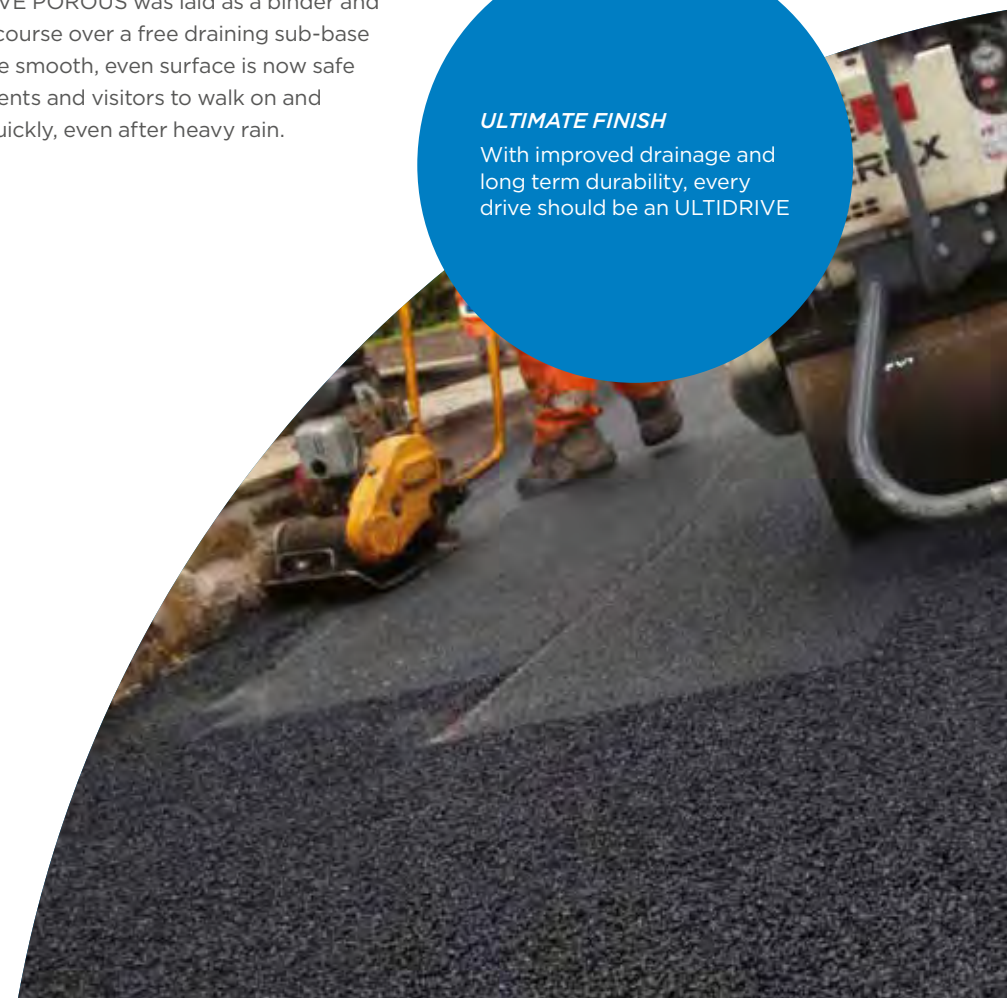
ULTIDRIVE POROUS was recommended as offering a safe, well drained surface that could be installed quickly using standard paving methods.

RESULT

ULTIDRIVE POROUS was laid as a binder and surface course over a free draining sub-base layer. The smooth, even surface is now safe for residents and visitors to walk on and drains quickly, even after heavy rain.

ULTIMATE FINISH

With improved drainage and long term durability, every drive should be an ULTIDRIVE





EXPERT ADVICE
AND SUPPORT

TYPICAL APPLICATIONS

Where site conditions or planning requirements make drainage a priority, ULTIDRIVE POROUS offers the solution. It requires less groundwork and excavation than alternative rainwater management systems, helping to save time on site and reduce disruption for clients.

FOR DRIVEWAYS:

- 6mm porous surface course (recommended at 30mm thickness) suitable for hand lay.
- 20mm porous binder course.

FOR CAR PARKS:

- 10mm porous surface course (recommended at 35mm thickness).
- 32mm porous base/binder course for larger car parks.

SPECIALIST BASE AGGREGATE:

Tarmac’s ULTIFLOW sub-base aggregate is recommended, for a complete permeable pavement solution.

TECHNICAL DATA

ULTIDRIVE POROUS	Typical Air Voids	Typical Stiffness (ITSM)	Typical Water Sensitivity (ITSR)	Typical Hydraulic Conductivity
Relevant standard	BS EN 12697-8	BS EN 12697-26	BS EN 12697-12	DD229
ULTIDRIVE POROUS 6mm	16.0%	3300MPa	85%	8100mm/hr (min 5000)
ULTICOLOUR POROUS 6mm	16.0%	1700MPa	83%	8100mm/hr (min 5000)
ULTIDRIVE POROUS 10mm	16.5%	1100MPa	89%	9700mm/hr (min 6000)
ULTICOLOUR POROUS 10mm	16.5%	2500MPa	92%	9700mm/hr (min 6000)
ULTIDRIVE POROUS 20mm	23.0%	1200MPa	N/R	13000mm/hr (min 6000)
ULTIDRIVE POROUS 32mm	25.0%	1200MPa	N/R	25000mm/hr (min 7000)

COMPARATIVE RAINFALL

- Worst recorded UK rainfall: 341mm in one day (averaging 15mm/hr for 22 hrs) in Cumbria in December 2015.
- A Hydraulic Conductivity of 5300mm/hr (above the 5000mm/hr min.

requirement for 6mm) would take ≈94 seconds to drain 15mm of water.

- A Hydraulic Conductivity of 11000mm/hr would take ≈44 seconds to drain 15mm of water.

OUR SUPPORT

FAQs

How does *ULTIDRIVE POROUS* improve drainage?

Available as a surface and binder course, the open structure of *ULTIDRIVE POROUS* allows surface water to flow quickly into the structure and thereafter slowly released into the ground.

How does *ULTIDRIVE POROUS* achieve a long lasting finish?

ULTIDRIVE POROUS uses high grade aggregates and each design is engineered to ensure that the optimum binder content for the specific aggregate is selected. Together with the advanced binder technology, this ensures the long term durability of the completed surface.

What other driveway and parking surfaces are available?

In addition to *ULTIDRIVE* and *ULTIDRIVE POROUS*, Tarmac supply *ULTIFASTPAVE* for fast, single pass resurfacing of high traffic sites. For historic buildings and heritage sites we also supply *Ultifinish*, a specialist asphalt with the classic appearance of a loose gravel.

What other drainage solutions do Tarmac supply?

ULTIFLOW is a range of drainage aggregates with a proven history of effective performance. Our contracting division can also design and install *ULTISuDS*, a complete sustainable drainage system.

Why is *ULTIDRIVE POROUS* a safer solution?

ULTIDRIVE POROUS eliminates the problem of surface water and reduces the rate of formation of ice during winter months. It also avoids the tripping hazards associated with uneven block paving.

Does *ULTIDRIVE POROUS* offer improved oil resistance?

The modified binder in *ULTIDRIVE POROUS* provides improved resistance to oil spillage compared to conventional asphalts. Tarmac *ULTISHIELD* is also available for areas where regular oil spillage is anticipated and the impact of such is the key concern.

Is *ULTIDRIVE POROUS* available in other colours?

ULTIDRIVE POROUS is available in black or red as standard. However the Tarmac *ULTICOLOUR* range also offers porous asphalt in various other colours, for driveways and a wide range of other applications.

How can I be sure that *ULTIDRIVE POROUS* is laid correctly?

ULTIDRIVE POROUS is only available for installation by accredited contractors who have full access to our expert training, advice and technical support.



MORE ANSWERS

For more information about Tarmac *ULTIDRIVE POROUS* contact your local regional office or visit tarmac.com

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