Jon Oliver Arboriculture

Client: Mr G Blezard

– The Woodlands, Hothersall Ln PR3 2XB

Arboricultural Impact Assessment

Prepared by
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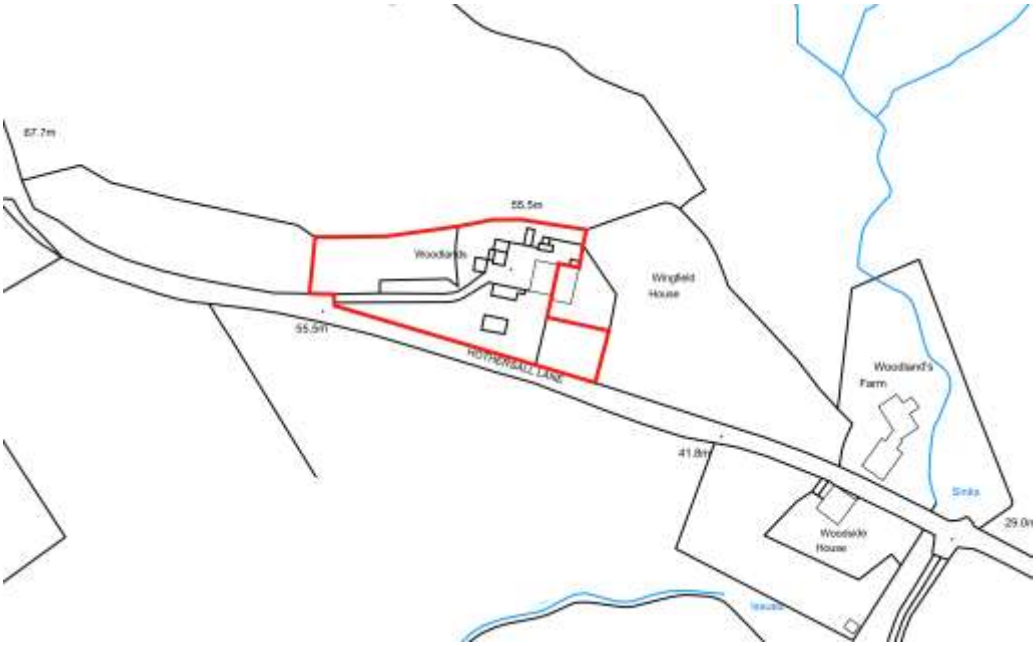
1.0 INTRODUCTION

1.1 Jon Oliver of Jon Oliver Arboriculture was commissioned to produce a Tree Survey and Arboricultural Impact Assessment to inform the design process for a potential planning application at The Woodlands, Hothersall Lane, Hothersall.

1.2 The site, as indicated on the tree constraints plan (appendix 2), is comprised of a dwelling and associated outbuildings set in a rural location.



Site location, Hothersall Lane, Hothersall PR3 2XB

2.0 THE DEVELOPMENT

2.1 The proposed development layout is as indicated on the tree protection plan (appendix 4). The proposed development is for the demolition of the existing dwelling and outbuildings and the construction of a new detached dwelling.

3.0 SURVEY METHODS

3.1 The site was surveyed by Jon Oliver on 6/8/18 using the supplied site plan.

3.2 Tree heights were estimated, measurements of DBH taken at 1.5m height and crown spread was taken by ground measurements. All images were taken at the time of the survey with a Panasonic Lumix TZ20. This is in accordance with BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations.

3.3 All surveying of tree stock on the site was carried out visually from the ground only. If ivy cover was encountered on trees, then only limited visual checking of structure and potential defects was possible.

3.4 Weather was clear and calm. There were no constraints to completing a thorough survey.

3.5 The location of the tree stock is as indicated on the supplied site plan (appendix 2). Where trees were not included on the site plan they are marked on by using ground measurements and their position relative to fixed features such as walls and boundaries.

3.6 Trees were surveyed throughout the proposed development site. Individual details were recorded for all significant trees within the proposed development. Where a larger number of trees, off site trees or a hedge are encountered in the survey area these are included as a group/hedge record which includes the approximate height range and maximum diameter at breast height (DBH) of trees within the group/hedge. These groups are referred to as follows: Group 2 (G2), Hedge 3 (H3) etc.

3.7 The surveyed trees are categorized by the standard retention categories as defined in BS5837:2012. Such retention categories seek to inform the design process of trees which may be worthy of consideration for inclusion within any proposed development. All work recommendations relate to trees within the context of the current site layout and usage.

3.8 In the current context of the site usage any trees which are unsuitable for retention are indicated on the tree protection plan (appendix 4) and are further identified in the narrative of this report.

4.0 RESULTS

4.1 TREE PRESERVATION ORDERS AND CONSERVATION AREAS

4.1.1 To the best of my knowledge no trees are the subject of any tree preservation order and the property does not lie within a conservation area. This will need to be confirmed with the relevant planning authority.

4.2 THE TREE POPULATION

4.2.1 Tree cover is as indicated on the tree constraints plan (appendix 2). There are several mature trees, a single hedge and tree groups in a variety of conditions as detailed in the tree schedule (appendix 1) and image files (appendix 3).

4.2.2 T1, T2 and G1 have rooting zones confined by the existing drive and Hothersall Lane. To illustrate the impact of these confining features the rooting zone for these trees has been plotted as a polygon on the tree constraints plan (appendix 2) in addition to the theoretical circular root protection area (RPA). There is evidence of damage to all of theses trees and some remedial pruning works are required as detailed in appendix 1.

4.2.3 G2 is positioned on the northern boundary. This is an unmanaged group of trees that contains some small dead stems and two larger cypress. It is recommend that these dead stems and the two cypress are removed in addition to other remedial works. The RPA of this group will have been confined by the existing garage and hard standing area that has been created for vehicles.

4.2.4 T3, 4 and 5 are growing in close proximity on the northern boundary. There is evidence of stress with these trees. T4, sycamore, has poor taper and a very sparse crown and T5, oak, appears to be stunted with significant epicormic growth around the mainstem and throughout the crown. Regular monitoring of these trees for reduced vigour is recommended.

4.3 ARBORICULTURAL IMPACT ASSESSMENT

4.3.1 The location of the proposed development potentially affects the retention of the onsite trees.

4.3.2 The existing site access passes through the theoretical RPA of T1 and T2. As discussed above in paragraph 4.2.2 the rooting zone of these trees has been restricted by confining features. As such the effective rooting zone will have adapted to meet the constraints of the site as such RPA's have been plotted as a polygon of equivalent area. The slight change in the route of the drive will require an incursion in to the modified rooting zone of T2 as plotted on the tree protection plan, appendix 4.

4.3.3 The demolition of the garage and the creation of the parking area potentially affects the RPA of G2. As discussed in paragraph 4.2.3 the rooting zone of these trees will have been confined by the current land use.

4.3.4 It will be possible to complete the development without any further stress being placed on any of the other trees on site.

4.3.5 There are no further above or below constraints placed on any trees as a consequence of the proposed development.

4.3.6 The assumption has been made that all underground services are in place and if further works are required this will not pass through the RPA of any retained trees.

5.0 MITIGATION MEASURES

5.1 Mitigation for creation of the proposed parking area and changes to the driveway is achievable by the use of a specialist no dig root protection solution that will spread any load across the rooting zone whilst maintaining permeability of the ground surface. Many products are commercially available, an example (Geocell) is included in appendix 6 for information. This will only be required within the RPA as indicated in the tree protection plan, appendix 4.

5.2 No mitigation planting has been proposed at this time as no tree removals will be required to facilitate the development.

6.0 METHOD STATEMENT TO ENSURE ADEQUATE TREE PROTECTION

6.1 SITE WIDE MEASURES:

6.1.1 During any approved development works it will be necessary to take appropriate measures to protect retained trees. Tree protection fencing will need to be erected and a detailed tree protection plan may need to be produced, to create a construction exclusion zone. A suitable design for tree protection fencing is included in appendix 5 and its suggested location is indicated on the tree constraints plan (appendix 4).

6.1.2 A list of general construction guidelines is detailed below:

- Creation of a construction exclusion zone (as detailed above) will be required for the development phase in order to protect the rooting zones of all retained trees.
- Once installed tree protection must remain in place and be observed at all times.
- No fires within 10m of the crown of any retained trees.
- Soil levels in rooting areas to be retained with minimal level changes, no greater than 300mm.
- No cement mixing/washout to take place within 15m of any retained trees.
- No chemicals, bitumen etc. to be stored within 10m of any retained trees.
- Any spillage of fuel, chemicals or contaminated water occurring within 2m of the root protection areas to be reported to project supervisor.

- No underground services will be required within or adjacent to the RPA of retained trees.

6.2 SITE SPECIFIC MEASURES:

6.2.1 The use of a no dig tree root protection system will be required to adequately protect the RPA of T2. This should be installed, in accordance with the manufacturers guidelines, prior to any works starting on site. The RPA of the affected tree will then be protected at all times.

7.0 TREE WORKS SCHEDULE

7.1 No tree works are required to facilitate the development. Recommendations in the tree schedule, appendix 1, are restricted to recommendations based on good arboricultural practice.

7.2 The installation of the no dig root protection surface within the RPA of T2 should take place prior to starting any development works as this will also afford protection during the construction phase.

8.0 CONCLUSION

8.1 The survey was completed on all trees and hedges potentially affected by any proposed development.

8.2 The completion of the proposed development should not place any undue stress on any retained trees providing the recommendations contained within this report are adhered to and a suitable no dig root protection system is used within the RPA of T2 as discussed above.

Appendix 1: Tree Schedule Site: The Woodlands, Hothersall PR3 2XB Surveyor: J.Oliver

Type	Type	Age	DBH	Height	1stB	N	E	S	W	Cond	Life Exp	Comments	Recommend	RPR	RPA	Category
T1	Acer pseudoplatanus (Sycamore)	M	350	9	2	3	3	3	3	Fair	20+	Extensive squirrel damage to limbs. Small to medium diameter deadwood. Decay on 1st significant branch. Rooting zone confined by access drive.	Remove 1st significant branch. Remove deadwood. Monitor remaining branches for die-back and decay	4.2	55.42	C1
H1	Prunus laurocerasus (Cherry Laurel),Snowberry, Ulmus glabra (Wych Elm), Sambucus nigra (Elder)	M	<100	1.5						Fair	20+	Poorly maintained hedge growing down steep banking. Predominantly snowberry with some laurel and wych elm. I x dead elder	Tidy up, remove invasive species and dead elder. Reduce height of wych elm and laurel	1.2	4.52	C2
T2	Quercus robur (Common Oak)	M	est 700	12	3	4	7	8	6	Good	20+	Growing from top of banking. Leaning to the south. Large wounds and poor pruning cuts on lower limbs. Possible decay from damaged limb (1st significant branch). Dense ivy which appears to have been recently severed. Some deadwood . Compacted track to the north of stem. Rooting zone confined by road and access drive and compacted track	Remove deadwood. Remedial works to poor pruning and damaged limbs. Monitor for decay. Ensure ivy fully severed	8.4	221.7	B1
G1	Fraxinus excelsior (Ash)	M	<400	10	5	5	5	5	4	Fair	20+	2 x ash. 1 ash multi-stemmed. Ivy. Pruning wounds on smallest stem	Sever ivy. Tidy pruning wounds. Monitor for decay	4.8	72.39	C2
G2	Fraxinus excelsior (Ash), Crataegus monogyna (Hawthorn), Cypress, Ulmus glabra (Wych Elm), Acer pseudoplatanus (Sycamore)	M	max est 600	12		4	4	5	4	Fair	20+	Unmaintained boundary trees. 3 x dead stems. Deadwood. Poor form	Remove dead stems and deadwood. Consider removal of 2 cypress. Monitor vigour and maintain as required	7.2	162.88	C2
T3	Crataegus monogyna (Hawthorn)	M	350	9	2	4	3	3	2	Good	20+	Minor deadwood in crown	Monitor vigour	4.2	55.42	C2
T4	Acer pseudoplatanus (Sycamore)	M	420	12	7	5	4	2	3	Poor	10+	Low vigour. Sparse crown. Some deadwood	Monitor vigour	5.04	79.81	C2
T5	Quercus robur (Common Oak)	M	est 600	9	4	5	3	6	7	Good	20+	Epicormic growth at base of stem. Minor deadwood. Close inspection of main stem not possible. Presence of such extensive epicormic growth throughout the crown would indicate the tree is potentially under stress. Top of main leader appears to be decayed. Possible storm damage?	Monitor vigour	7.2	162.88	C2
T6	Crataegus monogyna (Hawthorn)	M	est 250	7		2	3	2	2	Fair	10+	Some damage on branches and main stem. Die-back in crown. Suppressed by T7	Monitor vigour	3	28.28	C2
T7	Fraxinus excelsior (Ash)	M	est 700	16	5	6	6	6	6	Good	20+	Growing on banking. Minor die-back in upper crown. Failed limb high on main stem at approximately 12m	Monitor vigour	8.4	221.7	B2

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, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see **4.5.7**.*			See Table 2
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	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	Trees with material conservation or other cultural value	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	Trees with no material conservation or other cultural value	See Table 2

Appendix 2

Existing Site Layout - Tree Constraints Plan

Tree Constraints Plan

Key

- Tree location Cat.A
- Tree location Cat.B
- Tree location Cat.C
- Tree location Cat.U
- Root Protection Area
- Canopy extent

Scale 1:200
From Site Plan
Supplied

Note:
RPA only indicated for significant trees. Small garden trees and semi-mature specimens not indicated

Retention Categories:
As defined BS5837 2012
RPA:
Plotted from individual RPA sheets. Where the rooting zone is confined the RPA may be plotted as a polygon.

Project Title:
The Woodlands, Hothersall
Date of Survey:
6/8/18
Surveyor:
J. Oliver
Date File Created:
10/8/18

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RPA's of T1, T2 and G1 plotted as polygon (dotted line) of equivalent area to indicate constraints placed on rooting zone by Hothersall lane and existing drive. Theoretical RPA's shown as solid line.

Appendix 3

T1 - Sycamore. RPA confined by road and existing drive

T2 - Oak. Damaged limb. Extensive ivy

T2 - Large pruning wounds. Re-medial works required

T2, G1 and H1


G1 - 2 x ash stems. Damaged limb


G2 - Note dead stems


T3 - Hawthorn


G2 - Note rubble and hard standing next to garage.

T4 - Sycamore,
Sparse crown.

T7 - Ash

G3

T8 - Oak, note epicormic
T7 - Sycamore, poor taper

Appendix 4

Proposed Site Layout - Tree Protection Plan

G3 – C2

T7 – B2

T6 – C2

T5 – C2

T4 – C2

T3 – C2

G2 – C2

EXISTING ACCESS TO WINGFIELD HOUSE

Minimal loss of RPA of G2 to create parking area. Unlikely to be any rooting in this area due to rubble and existing parking area.

EXISTING GATED ACCESS APPROX 9M FROM EDGE OF HIGHWAY

PASSING AREA FOR CARS

EXISTING PARKING TO BE USED FOR NEW DWELLING

DWELLING 'WINGFIELD HOUSE'

REPOSITIONED GRAVEL DRIVEWAY

T1 – C

T2 – B1

H1 – C2

G1 – C2

EXISTING TARMAC 9M FROM EDGE OF HIGHWAY TO EXISTING GATED ACCESS

RPA's of T1, T2 and G1 plotted as polygon (dotted line) of equivalent area to indicate constraints placed on rooting zone by Hothersall lane and existing drive. Theoretical RPA's shown as solid line.

Use of no dig tree root protection (Geocell) for driveway construction within RPA of T2

EXISTING GATED ACCESS

Tree Protection Plan

Key

- Tree location Cat.A
- Tree location Cat.B
- Tree location Cat.C
- Tree location Cat.U
- Root Protection Area
- Canopy extent
- Tree protection barrier

Scale 1:200
From Site Plan Supplied

Note:
RPA only indicated for significant trees. Small garden trees and semi-mature specimens not indicated

Retention Categories:
As defined BS5837:2012
RPA:
Plotted from individual RPA sheets. Where the rooting zone is confined the RPA may be plotted as a polygon.

Proiect Title:
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Date of Survey:
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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 (Figure 3b).

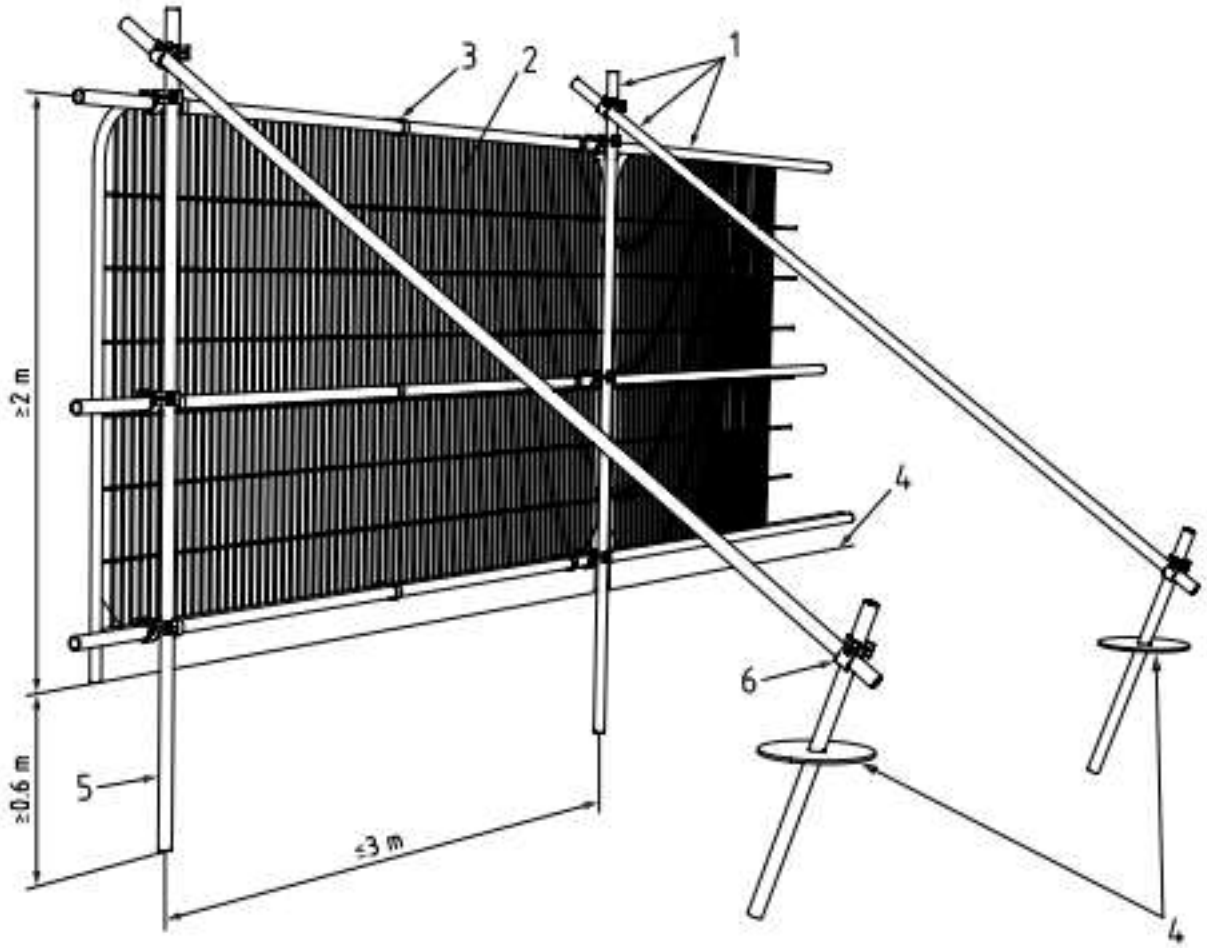
NOTE 1 Examples of configurations for steel mesh perimeter fencing systems are given in BS 1722-18.

NOTE 2 It might be feasible on some sites to use temporary site office buildings as components of the tree protection barriers, provided these can be installed and removed without damaging the retained trees or their rooting environment.

6.2.2.4 All-weather notices should be attached to the barrier with words such as:

"CONSTRUCTION EXCLUSION ZONE – NO ACCESS".

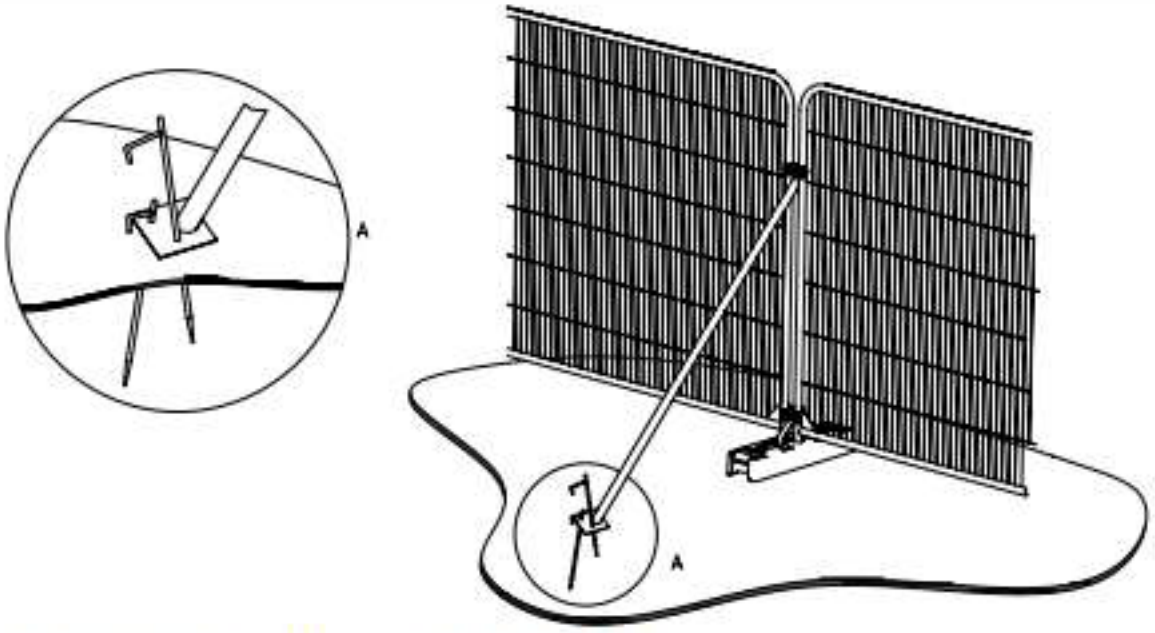
Figure 2 **Default specification for protective barrier**



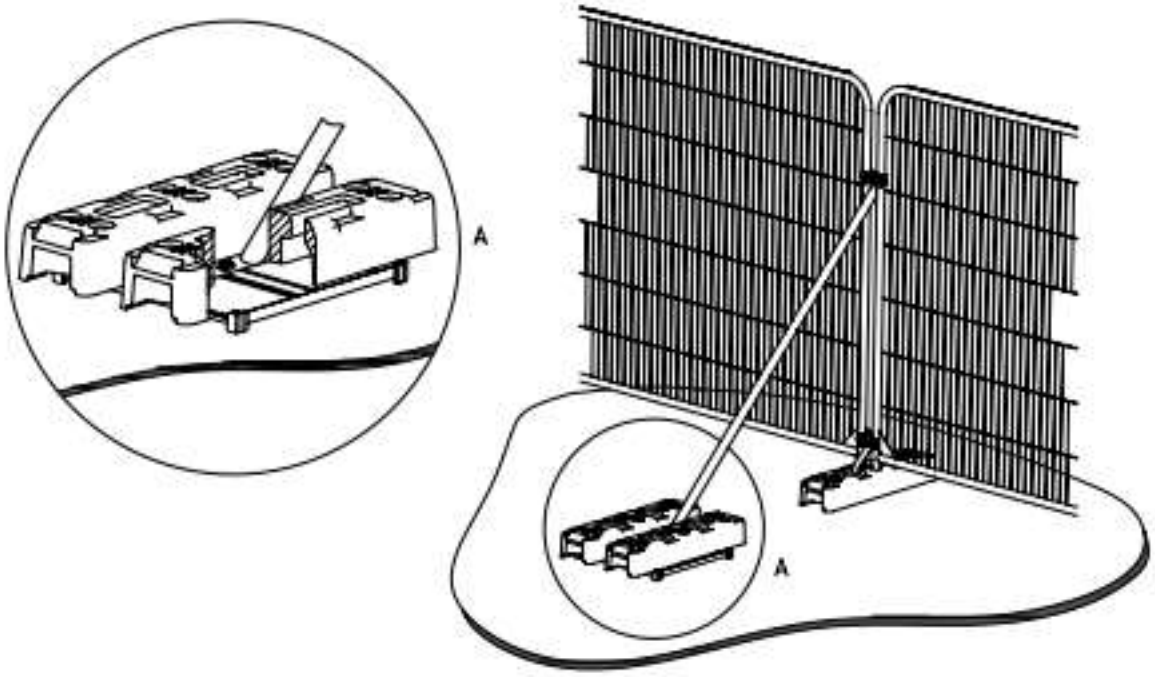
Key

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

Figure 3 **Examples of above-ground stabilizing systems**



a) Stabilizer strut with base plate secured with ground pins



b) Stabilizer strut mounted on block tray

6.2.3 Ground protection during demolition and construction

6.2.3.1 Where construction working space or temporary construction access is justified within the RPA, this should be facilitated by a set-back in the alignment of the tree protection barrier. In such areas, suitable existing hard surfacing that is not proposed for re-use as part of the finished design should be retained to act as temporary ground protection during construction, rather than being removed during demolition. The suitability of such surfacing for this purpose should be evaluated by the project arboriculturist and an engineer as appropriate.

TERRAM GEOCELL Tree Root Protection

Protect tree roots from vehicle traffic, whilst maintaining water and nutrient absorption using TERRAM GEOCELL.

Using TERRAM GEOCELL for tree root protection ensures the roots beneath are protected from vehicle loads by confining the sub-base and stabilising the ground. When the permeable TERRAM GEOCELL is filled with a porous, no fines, free-flowing aggregate the system allows easy passage of air and water providing essential nutrients to the roots. TERRAM GEOCELL is ideal for “No-Dig” situations.

Typical Applications

- Permanent Woodland Trails
- Paths & Cycleways
- Driveways*
- Roads
- Access Routes*
- Parking Areas

**See Arboricultural Advisory and Information Services APN12: Driveways close to trees*

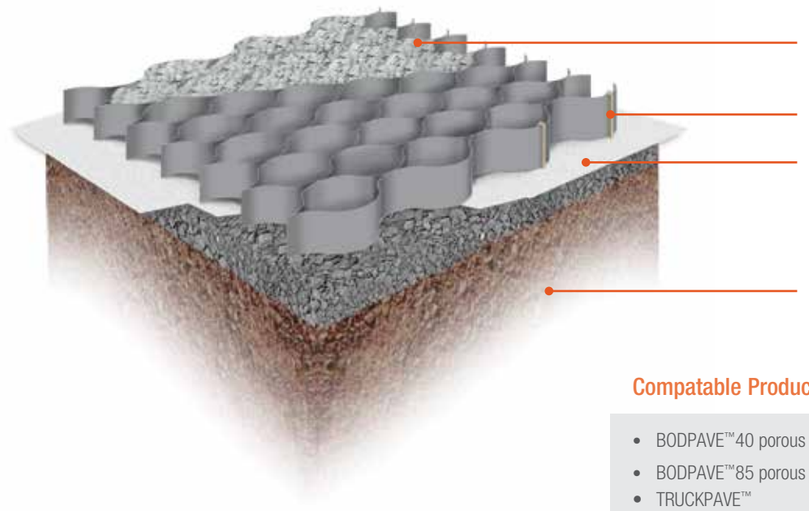
TERRAM GEOCELL is supplied as flat packed panels which are opened to form the honeycomb-like structure. These are positioned and pinned to the ground using fixing pins and filled with a suitable, permeable infill.

TERRAM GEOCELL confines the infill and ensures that downward forces are spread laterally, reducing pressure on the sub-base. Without this cellular system, the surface would become rutted and compacted with the traffic loads, damaging the tree roots and potentially resulting in the death of the tree.

WHY TERRAM GEOCELL?

- Lightweight and easy to handle, reducing installation costs.
- Permeable geotextile allows free flow of water, essential in tree root applications.
- The flexible TERRAM geotextile material allows TERRAM GEOCELL to effectively adapt to any variations in the terrain.
- TERRAM GEOCELLS are easily cut to size without damage, therefore reducing cost.

Typical Profile



Compatable Products

- BODPAVE™40 porous pavers
- BODPAVE™85 porous pavers
- TRUCKPAVE™
- TERRAM geotextile filter
- Geogrid

Fixing Pins

Fixing pins available upon request.

Product Details

PRODUCT	PANEL SIZE (m)	CELL Dia & DEPTH (mm)	PANEL WEIGHT	PERMABILITY (l/m²s)
GEOCELL 25/10	5 x 7	250 dia x 100	17kg	20.0
GEOCELL 25/15	5 x 7	250 dia x 150	25kg	20.0
GEOCELL 22/20	6 x 3	220 dia x 200	20kg	20.0

* These are typical profiles only.

TERRAM Data Sheets, Installation & Design Guidances and Case Studies can be downloaded from **www.terram.com**