



Arboricultural
Impact Assessment
with
Tree Protection Measures

**Trinity Island
Water Street
Manchester**

Project No. AIA.13242.01

22nd October 2021

Godwins Arboricultural Limited
17 Wood Street
Bolton
BL1 1EB

www.godwins.co.uk
info@godwins.co.uk
0800 030 4045

SUMMARY

Twenty-three individual trees and seven groups of trees/shrubs were recorded. In accordance with *BS5837:2012 Trees in relation to design, demolition and construction* a mixture of twenty-two individual trees and six groups of trees/shrubs were recorded as retention category 'C'.

The trees were generally found to be in a good to fair condition, however, one group of self-seeded Buddleia shrubs and one semi-mature tree (**G23** and **T27**) were classified as retention category 'U' (unsuitable for retention).

It is understood that the site does not contain any Tree Preservation Orders, but that it is located within the Castlefield Conservation Area.

The proposed development directly impacts upon twelve category C trees and six groups of category C trees. These trees shall require removal due to their close proximity to construction activity. All of the trees proposed for removal are considered to be low quality ('C' category) specimens.

It is understood that the proposed tree removal will be mitigated as part of a post development planting scheme of well-structured new trees that will add to the quality of the area and help integrate the proposed development into the surrounding landscape. In this instance, it is understood that sixty-six trees are proposed for Site C, and eighty-three trees are proposed for site D.

The retained trees will be protected to British Standard *BS5837:2012 Trees in relation to design, demolition and construction* to ensure that they remain in a healthy condition during and post development. The *Tree Protection Plan* to the rear of this report highlights the recommended tree protection measures.

Any arboricultural work undertaken should be done so by a competent arborist in line with British Standard *BS3998:2010 Tree Work*, and after permission has been granted to do so by the local planning authority.

CONTENTS

1. Introduction.....	1
1.1. Project outline	1
1.2. Scope of this report	1
1.3. Data collection.....	1
2. Arboricultural Constraints	2
2.1. Tree retention categories.....	2
2.2. Tree age class and condition	2
2.3. Root Protection Areas	2
2.4. Tree protection status	3
3. Arboricultural Impact Assessment	4
3.1. The proposed development.....	4
3.2. Proposed tree works and mitigation measures	4
3.3. Site construction traffic.....	5
3.4. RPA beyond the protective barriers	5
3.5. Hard surfaces within the RPA	5
4. Tree Protection Measures.....	6
4.1. Tree works prior to development.....	6
4.2. Tree protection barriers	6
4.3. Services within the RPA	6
4.4. Removal of existing hard surfaces within the RPA	7
4.5. Temporary ground protection	7
4.6. Hard surfaces within the RPA – No-Dig	7
Drawing 1. Tree Constraints Plan	10
Drawing 2. Tree Protection Plan.....	11
Appendix 1. Tree Schedule	12
Appendix 2. Explanatory Notes.....	13
Appendix 3. Report Limitations & General Guidelines	16
Appendix 4. Protective Barrier Construction.....	18
Appendix 5. ‘No-Dig’ Technique.....	21

1. Introduction

1.1. Project outline

- 1.1.1. This report has been produced in accordance with *British Standard BS5837: 2012 Trees in relation to design, demolition and construction* to achieve a harmonious and sustainable relationship where tree retention or planting is proposed in conjunction with nearby construction (site-based operations with the potential to affect existing trees).

1.2. Scope of this report

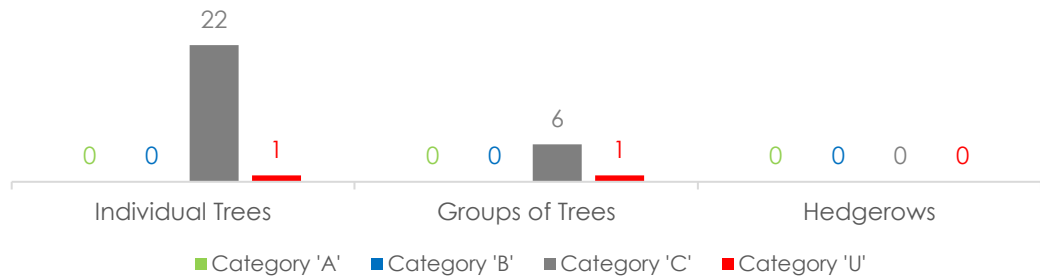
- 1.2.1. This report has been produced to comply with planning requirements where trees are to be considered as part of a proposed development. To achieve this, arboricultural constraints have been identified and a detailed plan (*Tree Constraints Plan*) has been produced showing the location, root protection areas and retention category of trees within the site.
- 1.2.2. In addition, this report provides an *Arboricultural Impact Assessment* that evaluates the direct and indirect effects of the proposed development, and where necessary makes recommendations for mitigation measures. This report also includes *Tree Protection Measures* and a *Tree Protection Plan*, which demonstrate how the retained trees will be protected during construction, and where tree protection measures are to be implemented.
- 1.2.3. Recommendations for tree works within this report are specific to the construction of the proposed development. This report does not form part of a tree safety inspection or tree management strategy, and general arboricultural management works may be required post development. To manage the safety and risk from trees it is advised that trees are inspected in detail for this purpose by an arboriculturist using a suitable risk management strategy.

1.3. Data collection

- 1.3.1. A ground level inspection was undertaken by Godwins on 15th December 2020. As recommended by *BS5837*, the position of all trees within the site with a stem diameter of 75 mm or more, measured at 1.5 m above highest adjacent ground level are recorded. The position of trees with an estimated stem diameter of 75 mm or more that overhang the site or are located beyond the site boundaries within a distance of up to 12 times their estimated stem diameter were also recorded. For individual trees the crown spread taken at four cardinal points; for tree groups the overall extent of the canopy was recorded.
- 1.3.2. Tree positions were plotted using a site location plan, aerial photography and on-site measurements, which is the basis for which the *Tree Constraints Plan* has been prepared.

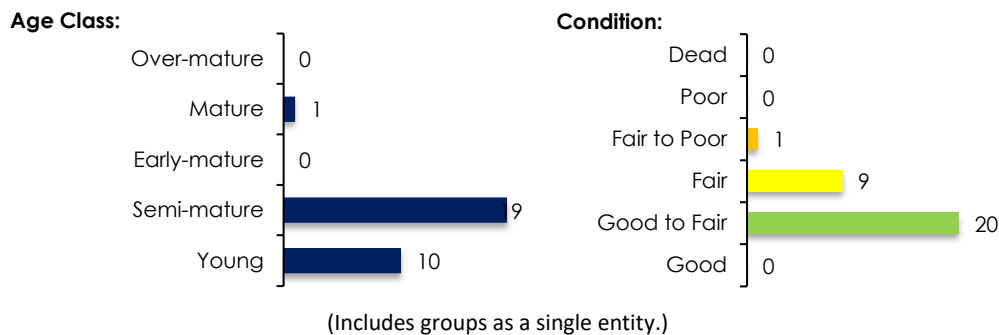
2. Arboricultural Constraints

2.1. Tree retention categories



- 2.1.1. Twenty-three individual trees and seven groups of trees/shrubs were recorded. In accordance with *BS5837:2012 Trees in relation to design, demolition and construction* a mixture of twenty-two individual trees and six groups of trees/shrubs were recorded as retention category 'C'.
- 2.1.2. The trees were generally found to be in a good to fair condition, however, one group of self-seeded Buddleia shrubs and one semi-mature tree (**G23** and **T27**) were classified as retention category 'U' (unsuitable for retention).

2.2. Tree age class and condition



- 2.2.1. Please see *Appendix 1* for the detailed list on existing species, age class, dimensions and condition of trees within the site, and *Appendix 2* for an explanation of retention category criteria. Tree locations can be seen on the *Tree Constraints Plan* at the rear of this report (*Drawing 1*).
- 2.2.2. The inspection of several trees and groups was restricted, particularly those trees located beyond the site boundary fencing and along the river, as detailed at *Appendix 1*. The inspection of these trees was limited to a cursory observation of the parts of the trees that could be clearly observed, without obstruction, from the available vantage point.

2.3. Root Protection Areas

- 2.3.1. The tree Root Protection Area (RPA) is a layout design tool indicating the area around a tree that, along with the tree stem and branches, must be considered during development. The protection of the roots and soil structure within the RPA should be treated as a priority. The RPA of each tree or group is marked on the *Tree Constraints Plan* at the rear of this report.

2.4. Tree protection status

- 2.4.1. A statutory tree protection enquiry was made with Manchester City Council on 22nd October 2021. It is understood that the site does not contain any Tree Preservation Orders, but that it is located within the Castlefield Conservation Area.
- 2.4.2. **It is essential that no tree works (including works to category 'U' trees), and no construction works that may affect retained trees, are undertaken within the site prior to consideration and consent of the proposed works under FULL planning approval only by the local planning authority, regardless of whether the trees are currently protected or not.**

3. Arboricultural Impact Assessment

3.1. The proposed development

3.1.1. A high-density residential development comprising up to 2,000 homes accommodated within four towers, associated landscaping, car parking, and access arrangements is proposed. The proposed layout drawing from TPM (reference Z1-TPM-G710-PL-XX-3852 101 102) can be seen within the *Tree Protection Plan* to the rear of this report. This drawing shows the proposed tree removals and retention, and has been used to highlight the direct and indirect arboricultural impacts.

3.2. Proposed tree works and mitigation measures

3.2.1. The proposed development directly impacts upon twelve category C trees and six groups of category C trees. These trees shall require removal due to their close proximity to construction activity. Please see the table below for the proposed tree removal details.

	Category 'A'	Category 'B'	Category 'C'
Trees to be removed to enable the construction of the proposed development	None	None	T1, T2, T3, T4, T5, T6, G11, G12, G14, T19, G21, G22, G24, T25, T26, T28, T29 & T30

3.2.2. All of the trees proposed for removal are considered to be low quality ('C' category) specimens.

3.2.3. It is understood that the proposed tree removal will be mitigated as part of a post development planting scheme of well-structured new trees that will add to the quality of the area and help integrate the proposed development into the surrounding landscape. In this instance, it is understood that sixty-six trees are proposed for Site C, and eighty-three trees are proposed for site D.

3.2.4. No pruning works shall be required to enable the construction of the proposed development.

3.2.5. Several trees may benefit from general arboricultural works as part of a practical post-development arboricultural management strategy; however, these works are not covered within the scope of this report.

3.2.6. Within *Appendix 1* the term 'No action required' relates specifically to those tree works required to enable the proposed development and does not mean that general post development arboricultural management works are not required.

3.3. Site construction traffic

- 3.3.1. To protect the trees from construction site traffic the remaining trees should be protected by a temporary protective barrier (see *Section 4.2*), put in place prior to any construction activity. The barrier will ensure that the trees remain in a healthy condition during and after development.

3.4. RPA beyond the protective barriers

- 3.4.1. Sections of RPA from nine trees (**T7, T8, T9, T10, T13, T15, T16, T17** and **T18**) extend beyond the protective barrier and existing boundary fence and into the proposed working area. However, it should be noted that these RPAs are currently located beneath an existing hard surface that would act to protect the RPAs from construction activity.

3.5. Hard surfaces within the RPA

- 3.5.1. In addition, the sections of RPA from trees **T7, T8, T9, T10, T13, T15, T16, T17** and **T18** extend into areas proposed new hard surfaces comprised of high-quality cube blocks and resin bound gravel. Given the potential area of RPA disturbance, it is recommended that these hard surfaces are constructed using techniques sympathetic to tree roots (a '*No-Dig*' technique). It should be noted that these sections of RPA are also currently located beneath an existing tarmac hard surface, and that the removal of this base and its replacement with a similar hard surface should not cause any harm to the adjacent trees.

4. Tree Protection Measures

4.1. Tree works prior to development

- 4.1.1. Care should be taken to ensure during tree removal or remedial work that damage to the retained trees and disturbance to the RPA is avoided. All tree works, as described in *Appendix 1*, should be carried out in accordance with *BS 3998: 2010 Recommendations for tree work*, and after permission has been granted to do so by the local planning authority. It is essential that those appointed to undertake any tree works carry out adequate checks to ensure that no statutory laws are contravened during tree work operations.

4.2. Tree protection barriers

- 4.2.1. Once the tree works have been completed, all trees that may be affected by construction activity and are being retained on site should be protected by barriers before any materials or machinery are brought onto the site, and before any demolition, development or stripping of soil commences. No hardcore, rubble or soil from groundworks should be located within the protective barriers. It should be confirmed by an arboriculturist or the local authority that the barriers have been correctly set out on site, prior to the commencement of any other operations.
- 4.2.2. The protected area should be regarded as off limits, and once installed barriers should not be removed or altered without prior recommendation by an arboriculturist and, where necessary, approval from the local planning authority.
- 4.2.3. Please see *Appendix 4* for suggested barrier construction detail. It is recommended that in this instance the protective barrier shown in *Figure 2* would be appropriate. The suggested location for protective fencing is shown on the *Tree Protection Plan (Drawing 2)*.
- 4.2.4. Only when the development phase is complete and the site machinery has been removed, the local planning authority should be invited to inspect the site to give approval for the removal of the tree protection measures.

4.3. Services within the RPA

- 4.3.1. Wherever possible, under-ground services should be routed outside of the RPA of retained trees, and plans showing the proposed routeing should be drawn up. Where excavations may be required hand-held tools might be acceptable for shallow service runs.

4.4. Removal of existing hard surfaces within the RPA

- 4.4.1. The removal of the existing tarmac hard surface within the RPAs of **T7, T8, T9, T10, T13, T15, T16, T17** and **T18** *must only* be undertaken by hand. The underlying existing sub-soil ground levels must be retained, avoiding the use of heavy machinery within the exposed RPA. Once existing ground level has been reached, the exposed ground level must be protected by temporary ground protection until the new hard surface has been installed.

4.5. Temporary ground protection

- 4.5.1. Ground protection in the form of ridged material, suitable to distribute the weight of any potential traffic, should be installed over exposed areas of RPAs from trees that extend beyond the protective barrier. British Standard BS5837 recommends that:

The ground protection might comprise one of the following:

- a) for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 10mm depth of woodchip), laid onto a geotextile membrane;*
- b) for pedestrian-operated plant up to a gross weight of 2t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane;*
- c) for wheeled or tracked construction traffic exceeding 2t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.*

4.6. Hard surfaces within the RPA – No-Dig

- 4.6.1. It is recommended that the proposed new hard surfaces within the RPAs of trees **T7, T8, T9, T10, T13, T15, T16, T17** and **T18** are constructed in a manner that would not cause the trees any long-term harm. In this instance, it is recommended that a 'No-Dig' technique is used to prevent damage to the underlying RPAs.
- 4.6.2. The *No-Dig* technique involves construction of a surface with no excavation into the underlying sub-soil, soil stripping or site grading. The design of such a construction needs to consider the root structure below. No machinery that may compact the soil structure should be used within the RPA. The practicality of such a surface must be fully assessed by a suitably qualified structural engineer prior to implementation, as the surface must be able to adequately withstand any expected load.

- 4.6.3. Please see *Appendix 5* for an example of how to install the new hard surface on top of existing ground levels. The example shows a method for installing non-intrusive kerb edging to retain the hard surface.
- 4.6.4. It is essential that the existing tarmac surface within these RPAs is removed using hand tools down to underlying ground levels. Once existing ground level has been reached, the exposed ground level must be protected by temporary ground protection until the new hard surface has been installed.

Client: Renaker Build Limited
Project No: AIA.13242
Issue: 01

Date Issued: 22nd October 2021
Status: FINAL

Signed for on behalf of Godwins Arboricultural Limited:

R Godwin

Robert Godwin MSc MArborA.
Arboriculturist

Contact Details:

Godwins Arboricultural Limited
17 Wood Street
Bolton
BL1 1EB

www.godwins.co.uk
info@godwins.co.uk
0800 030 4045

Drawing 1. Tree Constraints Plan



T	G	H	W	S
INDIVIDUAL TREE	GROUP OF TREES	HEDGEROW	WOODLAND GROUP	SHRUB

	EXISTING LAYOUT
--	-----------------

TREE QUALITY ASSESSMENT CATEGORY

	CATEGORY 'A' HIGH QUALITY
	CATEGORY 'B' MODERATE QUALITY
	CATEGORY 'C' LOW QUALITY
	CATEGORY 'U' UNSUITABLE FOR RETENTION

Based on British Standard 5837:2012 Table 1.
Please refer to Appendix 2 of the arboricultural report for more detailed category definitions.

	ROOT PROTECTION AREA (RPA)
--	----------------------------

The Root Protection Area (RPA) is a layout design tool highlighting the underground tree constraints. Along with the tree stem and branches the RPA must be considered prior to and during development.

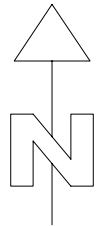
Written consent must be obtained from Godwins Arboricultural Limited before copying or using the data within this drawing other than for the purpose it was originally supplied.
Do not scale from this drawing.

GODWINS ARBORICULTURAL LIMITED
www.godwins.co.uk
info@godwins.co.uk
0800 030 4045

17 Wood Street
Bolton
BL1 1EB

PROJECT TITLE: Trinity Island, Water Street, Manchester		
DRAWING TITLE: TREE CONSTRAINTS PLAN	SCALE: 1:500 @ A1	ISSUE DATE: 21.10.21
DRAWING NUMBER: TCP.13242	REVISION: .01	DRAWN BY: RG

Drawing 2. Tree Protection Plan



T	G	H	W	S
INDIVIDUAL TREE	GROUP OF TREES	HEDGEROW	WOODLAND GROUP	SHRUB

EXISTING LAYOUT

PROPOSED TREE WORKS

	TREE PROPOSED FOR RETENTION
	TREE PROPOSED FOR PRUNING
	None
	TREE PROPOSED FOR REMOVAL (ARBORICULTURAL REASONS)
	G23 & T27
	TREE PROPOSED FOR REMOVAL (TO ENABLE DEVELOPMENT)
	T1, T2, T3, T4, T5, T6, G11, G12, G14, T19 G21, G22, G24, T25, T26, T28, T29 & T30

Please refer to Appendix 1 of the Arboricultural Impact Assessment for details on tree condition and proposed works.

ROOT PROTECTION AREA (RPA)

The Root Protection Area (RPA) is a layout design tool highlighting the underground tree constraints. Along with the tree stem and branches the RPA must be considered prior to and during development.

TREE PROTECTION MEASURES

	TEMPORARY PROTECTIVE BARRIER Refer to Appendix 4 of the Arboricultural Impact Assessment for specification details.
--	--

Written consent must be obtained from Godwins Arboricultural Limited before copying or using the data within this drawing other than for the purpose it was originally supplied.
Do not scale from this drawing.

GODWINS ARBORICULTURAL LIMITED
www.godwins.co.uk
info@godwins.co.uk
0800 030 4045

17 Wood Street
Bolton
BL1 1EB

PROJECT TITLE:
Trinity Island, Water Street, Manchester

DRAWING TITLE: TREE PROTECTION PLAN	SCALE: 1:500 @ A1	ISSUE DATE: 21.10.21
DRAWING NUMBER: TPP.13242	REVISION: .01	DRAWN BY: RG

Appendix 1. Tree Schedule

Tree No.	Species	Age	Stems at 1.5m	Stem Dia (mm)	Height (Crown Hgt) (m)	FSB (D) (m)	Branch Spread (m)				Observations	Cond	Life Exp	Tree Works Required to Enable Development	Root Protection Area (RPA)		Retention Category
							N	E	S	W					Radius (m)	Area (m²)	
T 1	Salix caprea (Goat Willow)	Semi-mature	10	120	7(1)	2(N)	5	4	3	5	Asymmetrical crown. Self-seeded specimen. Multi-stemmed from ground level. Limited inspection - restricted access. Tree RPA located within ground level change.	Fair	20+	Remove to enable the construction of the proposed development.	4.6	65.1	C
T 2	Sorbus aucuparia (Rowan)	Semi-mature	2	100	4(2)	2(N)	1	2	1.5	1.5	Asymmetrical crown. Twin-stemmed from ground level. Limited inspection - restricted access.	Good to Fair	40+	Remove to enable the construction of the proposed development.	1.7	9.0	C
T 3	Fraxinus excelsior (Ash)	Young	1	120	6(2.5)	2.5(N)	1	2	1.5	1	Asymmetrical crown. Self-seeded specimen. Limited inspection - restricted access.	Fair	40+	Remove to enable the construction of the proposed development.	1.4	6.5	C
T 4	Salix caprea (Goat Willow)	Semi-mature	7	180	11(4)	5(N)	5.5	5	4	3	Asymmetrical crown. Self-seeded specimen. Multi-stemmed from ground level. Limited inspection - restricted access.	Fair	40+	Remove to enable the construction of the proposed development.	5.7	102.4	C
T 5	Acer pseudoplatanus (Sycamore)	Semi-mature	9	180	10(1.5)	1.5(N)	5	4	4	6.5	Asymmetrical crown. Self-seeded specimen. Multi-stemmed from ground level. Limited inspection - restricted access.	Good to Fair	40+	Remove to enable the construction of the proposed development.	6.5	131.9	C
T 6	Sorbus aucuparia (Rowan)	Semi-mature	4	150	7(2)	2(E)	3	3	2.5	2.5	Asymmetrical crown. Multi-stemmed below 1.5m. Limited inspection - restricted access.	Good to Fair	40+	Remove to enable the construction of the proposed development.	3.6	40.7	C
T 7	Acer platanoides (Norway Maple)	Young	1	160	5.5(2)	2(E)	2.5	2.5	2.5	2.5	Balanced crown. Limited inspection - restricted access.	Good to Fair	40+	No action required.	1.9	11.6	C
T 8	Prunus sp. (Cherry)	Semi-mature	2	140	6(1.5)	1.5(E)	3	2	2.5	2.5	Asymmetrical crown. Limited inspection - restricted access.	Good to Fair	40+	No action required.	2.4	17.8	C
T 9	Sorbus aucuparia (Rowan)	Semi-mature	4	100	5.5(2)	2.5(E)	2	2	2	2	Balanced crown. Multi-stemmed below 1.5m. Limited inspection - restricted access.	Good to Fair	40+	No action required.	2.4	18.1	C
T 10	Sorbus intermedia (Swedish Whitebeam)	Semi-mature	6	120	5.5(1)	1.5(E)	3	2.5	3	2.5	Asymmetrical crown. Multi-stemmed below 1.5m. Limited inspection - restricted access.	Good to Fair	40+	No action required.	3.5	39.2	C

Tree No.	Species	Age	Stems at 1.5m	Stem Dia (mm)	Height (Crown Hgt) (m)	FSB (D) (m)	Branch Spread (m)				Observations	Cond	Life Exp	Tree Works Required to Enable Development	Root Protection Area (RPA)		Retention Category
							N	E	S	W					Radius (m)	Area (m²)	
G 11	Sorbus intermedia (Swedish Whitebeam)	Semi-mature	4	100	6(1)	1.5(E)	2.5	2.5	2.5	2.5	Multi-stemmed from ground level. Limited inspection - restricted access. Individuals crowns restricted by group.	Good to Fair	40+	Remove to enable the construction of the proposed development.	2.4	18.1	C
G 12	Prunus sp. (Cherry)	Young	1	120	6(1.5)	1.5(E)	2	2	2	2	Multi-stemmed from ground level. Limited inspection - restricted access. Individuals crowns restricted by group.	Good to Fair	40+	Remove to enable the construction of the proposed development.	1.4	6.5	C
T 13	Sorbus intermedia (Swedish Whitebeam)	Semi-mature	2	120	4.5(1)	2(E)	2	1.5	2	2.5	Asymmetrical crown. Twin-stemmed below 1.5m. Limited inspection - restricted access.	Good to Fair	40+	No action required.	2.0	13.1	C
G 14	Sorbus aucuparia (Rowan)	Young	1	100	4(1)	2(E)	1.5	1.5	1.5	1.5	Limited inspection - restricted access. Balanced crowns.	Good to Fair	40+	Remove to enable the construction of the proposed development.	1.2	4.5	C
T 15	Sorbus intermedia (Swedish Whitebeam)	Young	4	100	5(1)	2(E)	2	1.5	2	2	Asymmetrical crown. Multi-stemmed below 1.5m. Limited inspection - restricted access.	Good to Fair	40+	No action required.	2.4	18.1	C
T 16	Sorbus intermedia (Swedish Whitebeam)	Semi-mature	1	150	5(1.5)	2(E)	2	2	2	2.5	Asymmetrical crown. Limited inspection - restricted access.	Good to Fair	40+	No action required.	1.8	10.2	C
T 17	Sorbus intermedia (Swedish Whitebeam)	Semi-mature	3	160	7(1.5)	2(E)	2	3.5	2.5	3	Asymmetrical crown. Multi-stemmed below 1.5m. Limited inspection - restricted access.	Good to Fair	40+	No action required.	3.3	34.6	C
T 18	Sorbus aria (Whitebeam)	Semi-mature	4	120	6.5(1.5)	2(E)	3	2.5	1.5	3	Asymmetrical crown. Multi-stemmed below 1.5m. Limited inspection - restricted access.	Good to Fair	40+	No action required.	2.9	26.1	C
T 19	Sambucus nigra (Elder)	Mature	3	120	4(1)	2.5(E)	2	2	2	2.5	Asymmetrical crown. Self-seeded specimen. Multi-stemmed below 1.5m. Limited inspection - restricted access.	Good to Fair	40+	Remove to enable the construction of the proposed development.	2.5	19.6	C
T 20	Salix caprea (Goat Willow)	Young	5	75	3(1)	1.5(E)	2	1.5	2	2	Asymmetrical crown. Self-seeded specimen. Multi-stemmed below 1.5m. Limited inspection - restricted access.	Good to Fair	40+	No action required.	2.0	12.8	C

Tree No.	Species	Age	Stems at 1.5m	Stem Dia (mm)	Height (Crown Hgt) (m)	FSB (D) (m)	Branch Spread (m)				Observations	Cond	Life Exp	Tree Works Required to Enable Development	Root Protection Area (RPA)		Retention Category
							N	E	S	W					Radius (m)	Area (m²)	
G 21	Salix caprea (Goat Willow)	Young	7	90	5(1.5)	1.5(E)	3	3	3	3	Multi-stemmed from ground level. Limited inspection - restricted access. Individuals crowns restricted by group. Self-seeded specimens.	Good to Fair	40+	Remove to enable the construction of the proposed development.	2.9	25.7	C
G 22	Prunus sp. (Cherry), Sorbus aucuparia (Rowan)	Young	1	75	3(0.5)	1(E)	1	1	1	1	Limited inspection - restricted access. Individuals crowns restricted by group. Linear boundary group. Occasional self-seeded saplings.	Good to Fair	40+	Remove to enable the construction of the proposed development.	0.9	2.6	C
G 23	Buddleia sp. (Buddleia)	Semi-mature	3	50	3(0.5)	1(E)	1	1	1	1	Limited inspection - restricted access. Individuals crowns restricted by group. Linear boundary group. Self-seeded specimens.	Fair	10+	Remove for arboricultural reasons.	1.0	3.4	U
G 24	Sorbus aucuparia (Rowan)	Young	1	50	3(0.5)	1(E)	1	1	1	1	Limited inspection - restricted access. Self-seeded specimens.	Fair	40+	Remove to enable the construction of the proposed development.	0.6	1.1	C
T 25	Prunus sp. (Cherry)	Young	1	180	7(2)	2(E)	2.5	0.5	1.5	2	Asymmetrical crown. Self-seeded specimen. Limited inspection - restricted access.	Fair	40+	Remove to enable the construction of the proposed development.	2.2	14.7	C
T 26	Sorbus aria (Whitebeam)	Semi-mature	1	170	5(2)	2(W)	2	2.5	2.5	2	Asymmetrical crown. Tree RPA located within ground level change. Tree RPA located within existing hard surface area.	Good to Fair	40+	Remove to enable the construction of the proposed development.	2.0	13.1	C
T 27	Sorbus aria (Whitebeam)	Semi-mature	1	170	4.5(2)	2(W)	2	3	2.5	1	Asymmetrical crown. Stem lean (north). Tree RPA located within ground level change. Tree RPA located within existing hard surface area.	Fair to Poor	10+	Remove for arboricultural reasons.	2.0	13.1	U
T 28	Sorbus aria (Whitebeam)	Semi-mature	1	200	5(2)	2(W)	2.5	3	2.5	2	Asymmetrical crown. Stem lean (north). Tree RPA located within ground level change. Tree RPA located within existing hard surface area.	Fair	20+	Remove to enable the construction of the proposed development.	2.4	18.1	C
T 29	Sorbus aria (Whitebeam)	Semi-mature	5	60	3.5(0.5)	0.5(W)	1.5	2	2	2	Asymmetrical crown. Multi-stemmed below 1.5m. Tree RPA located within ground level change. Tree RPA located within existing hard surface area.	Fair	20+	Remove to enable the construction of the proposed development.	1.6	8.1	C
T 30	Sorbus aria (Whitebeam)	Semi-mature	1	120	4.5(2)	2(W)	1.5	2.5	1.5	0.5	Asymmetrical crown. Stem lean (north). Tree RPA located within ground level change. Tree RPA located within existing hard surface area.	Fair	20+	Remove to enable the construction of the proposed development.	1.4	6.5	C

Appendix 2. Explanatory Notes

A2.1. Tree statistics and measurements

Survey record	Description
<i>Tree No.</i>	Unique tree reference number. (T) = Individual tree, (G) = Group of trees or woodland that form cohesive arboricultural features, (H) = Hedgerows and substantial internal or boundary hedges.
<i>Species</i>	Species listed by scientific name, with (common name).
<i>Age</i>	Life stage – Young, Semi-mature, Early-mature, Mature, Over-mature and Veteran.
<i>Stem Count</i>	Number of stems recorded at 1.5m above ground level.
<i>Stem Diameter</i>	Stem diameter recorded in millimetres at 1.5 meters above ground. Where the tree is multiple stemmed, each stem has been recorded.
<i>Height (Crown Height)</i>	Height of the tree in metres – to the closest 0.5m. Average canopy height in brackets, e.g. 10(3).
<i>First Significant Branch</i>	Existing height above ground level of first significant branch and direction of growth, e.g. 3(N)
<i>Branch Spread</i>	Branch spread, taken as a minimum at the four cardinal points – North, East, South and West.
<i>Observations</i>	General observations, particularly of structural and/or physiological condition (e.g. the presence of any decay, physical defect or historic pruning).
<i>Cond</i>	Condition of the tree recorded as Good, Good to Fair, Fair, Fair to Poor, Poor or Dead.
<i>Life Exp</i>	Life Expectancy - classed as less than 10 years, 10 plus years, 20 plus years, or more than 40 years.
<i>Tree Works Required to Enable Development</i>	Tree works specifically required to enable the proposed development, or to reduce significant risk of harm. The term 'No action required' does not mean that general post development arboricultural management works are not required.
<i>RPA Radius</i>	Radius of the root protection area, when plotted as a circle centred on the base of the stem.
<i>RPA Area</i>	Total area of RPA in metres squared, e.g. 100m ² .
<i>Retention Category</i>	See below – A2.2.

A2.2. Tree retention categories

Retention category and definition	Criteria
<i>U (marked in red on the Tree Constraints Plan) = trees for removal.</i>	Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.
<i>A (marked green on the Tree Constraints Plan) = Trees of high quality</i>	Trees of high quality with an estimated remaining life expectancy of at least 40 years.
<i>B (marked in blue on the Tree Constraints Plan) = Trees of moderate quality</i>	Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
<i>C (marked in grey on the Tree Constraints Plan) = Trees of low quality</i>	Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.

Appendix 3. Report Limitations & General Guidelines

- A3.1 Where the inspection of trees was limited (*see Appendix 1*), the 'Tree statistics and measurements' (*Appendix 2.1*) are estimated, and observations, condition and life expectancy are based on an inspection from the available vantage point.
- A3.2 It is recommended that qualified and experienced companies are sought when appointing tree work contractors and they should be approved under the Arboricultural Association Approved Contractors scheme. It is essential that all appointed tree work contractors have adequate Public Liability, Products Liability and Employers Liability Insurance. All tree works must conform to the current BS 3998 "*Recommendations for Tree Work*".
- A3.3 Godwin's Arboricultural Ltd will not accept liability for works undertaken by third party companies. All necessary checks must be made by the appointed tree work contractor prior to undertaking any works to ensure that no statutory tree protection measures or relevant laws are contravened.
- A3.4 The validity, accuracy and findings of this report are directly related to the accuracy of the information made available prior to and during the inspection process. No checking of independent third party data will be undertaken. Godwin's Arboricultural Ltd will not be responsible for the recommendations within this report where essential data are not made available, or are inaccurate.
- A3.5 The assessment and works recommendations relate to conditions found at the time of our inspection. Any significant alteration to the site post our site inspection but pre submission for planning that may affect the trees present, or have a bearing on the planning implications (including level changes, hydrological changes, storms, extreme climatic events or site works) will necessitate a re-assessment of the trees and the site.
- A3.6 This report has been carried out in order to inform the planning process, and not to assess the potential hazards and risks posed by trees. Where clear and obvious hazards have been observed to accessible trees, these have been addressed in the works recommendations. Where inspections were limited by restrictions such as stem ivy, understory vegetation, limited access, epicormic growth or being located on adjacent land, any form of tree condition assessment was restricted. A full assessment of the levels of risk posed by trees can only be informed by considering site use together with assessing any hazards present within a tree.
- A3.7 Trees are dynamic structures that continue to develop and decline; in addition, changes in site use are likely to occur during and as a result from the proposed development. On this basis, regular tree risk assessments are advised.
- A3.8 Godwin's Arboricultural Ltd plans are to scale whenever possible but care should be taken when measuring from a plan without first checking the original data.

Appendix 4. Protective Barrier Construction

- A4.1 The default specification for protective barriers should consist of a vertical and horizontal scaffold framework, well braced to resist impacts, as illustrated below. The vertical tubes should be spaced at a *maximum* interval of 3 m and driven securely into the ground. Onto this framework, welded mesh panels should be securely fixed. Care should be exercised when locating the vertical poles to avoid underground services and, in the case of the bracing poles, also to avoid contact with structural roots.

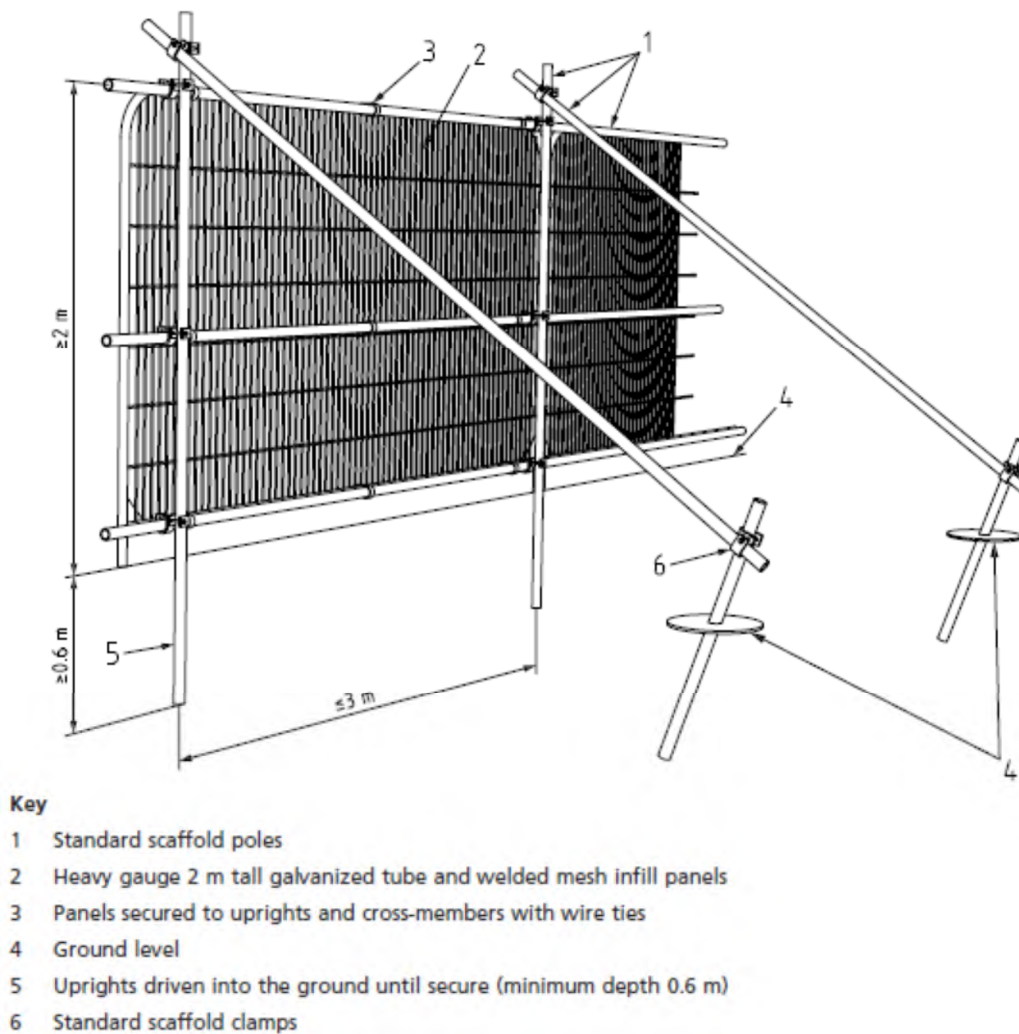


Figure 1. Default protective fencing barrier as detailed in BS 5837: 2012.

- A4.2 Where the site circumstances and associated risk of damaging incursion into the RPA do not necessitate the default level of protection, an alternative specification may be adopted. This system includes 2 m tall welded mesh panels on rubber or concrete feet, secure enough to provide an adequate level of protection from cars, vans, pedestrians and manually operated plant. In such cases, the fence panels should be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The distance between the fence couplers should be at least 1 m and should be uniform throughout the fence. The panels should be supported on the inner side by stabilizer struts, which should normally be attached to a base plate secured with ground pins (Figure 2a). Where the fencing is to be erected on retained hard surfacing or it is otherwise unfeasible to use ground pins, e.g. due to the presence of underground services, the stabilizer struts should be mounted on a block tray (Figure 2b).

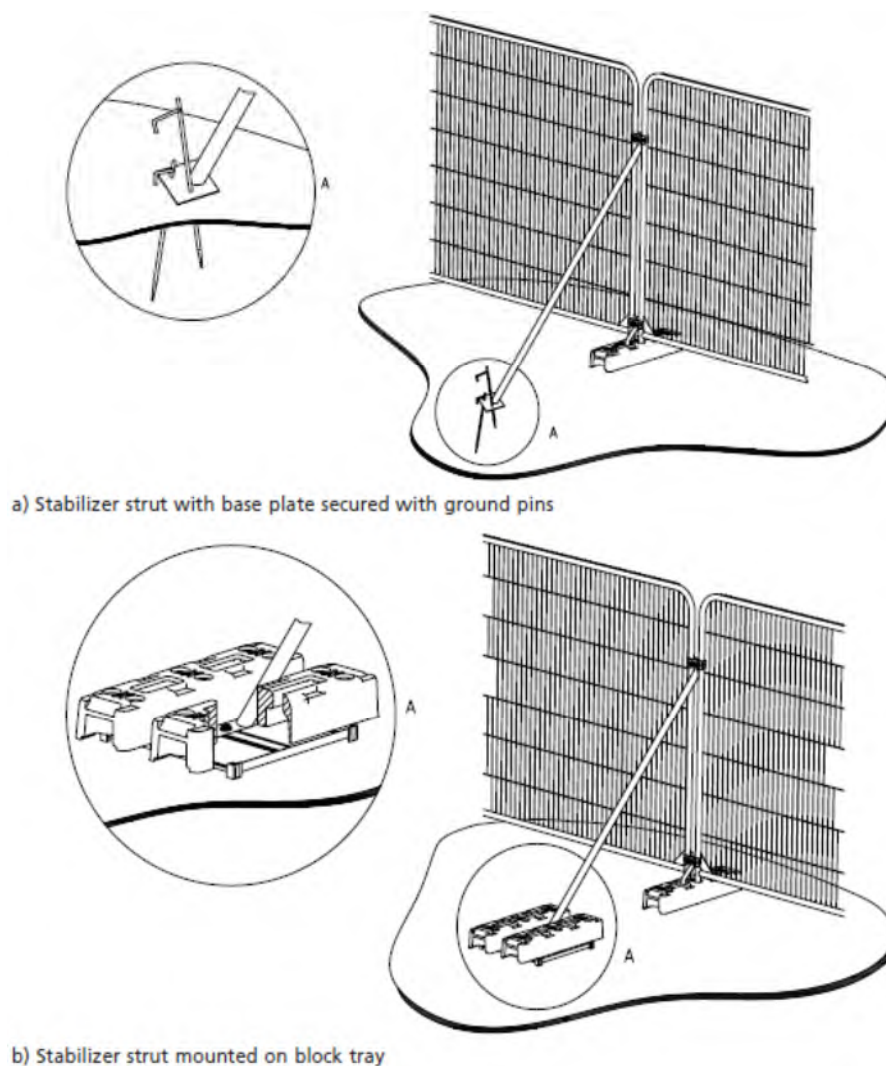


Figure 2. Examples of above-ground stabilizing systems

Appendix 5. 'No-Dig' Technique

Cellweb® TRP

Tree Root Protection

Cellweb® TRP is a 3D cellular confinement tree root protection system. The system provides a 'no dig' solution for the construction of new hard surfaces within root protection areas (RPAs). Cellweb® TRP has been designed and independently tested to comply with recommendations made in Arboricultural Practice Note 12 and BS 5837 2012 – Trees in relation to design, demolition and construction.



Cellweb® TRP Key Functions

Cellweb® is a 'no dig' solution which is constructed directly on the existing ground surface. This eliminates the requirement for excavation, preventing root severance.

Cellweb® is a completely porous system allowing continued water permeation and gas exchange between the rooting environment and atmosphere.

Cellweb® spreads point loads, minimising increases in soil compaction within the rooting environment. This maintains an open graded soil structure allowing continued root growth, water, gas and nutrient migration.

The Cellweb® TRP system comprises the following three components

Treetex™ Geotextile. Following minimal ground preparation the Treetex™ is laid onto the existing ground and top soil. This acts as a separation layer, separating the system above from the soil and rooting environment below. Treetex™ performs as a hydrocarbon pollution control measure in accordance with BS5837, holding 1.7lt of oil per square meter.

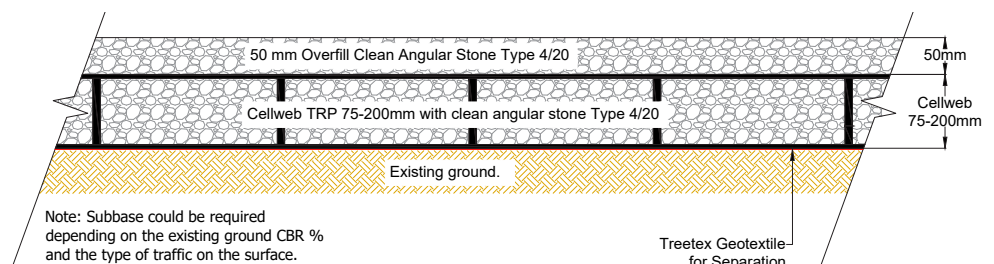
Cellweb® 3D Cellular Confinement. The Cellweb® is installed on top of the Treetex™ layer. This is fixed to the ground using ten steel J pins per panel. The panels can be cut to the required shape and adjoining panels can be connected using heavy duty staples or cell ties.

4-20mm Clean Angular Stone. The expanded Cellweb® is infilled with a 4-20mm clean angular stone. The confined angular stone locks together to produce a rigid stone mattress, while maintaining air pockets for continued water permeation and gas exchange. The low fines content of the stone prevents the Treetex™ layer from becoming blocked over time.

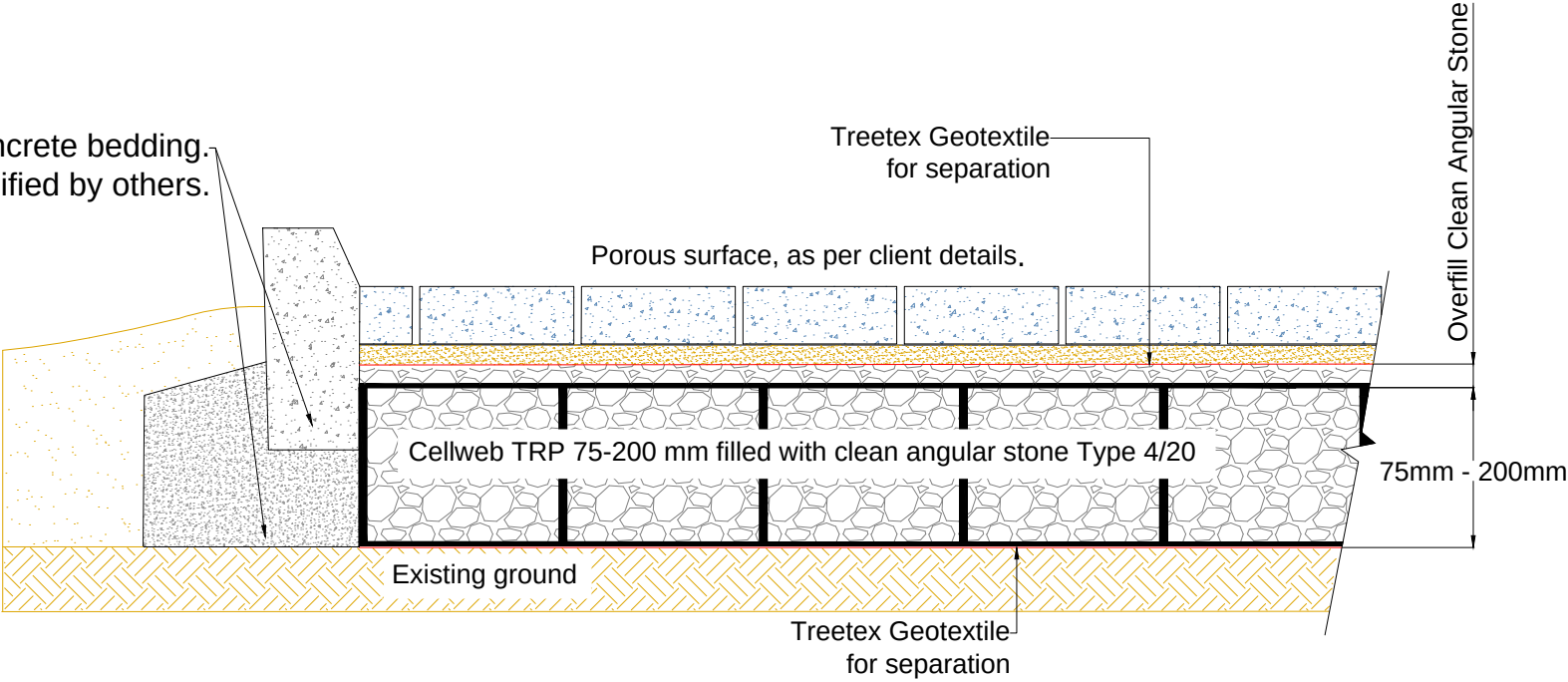
Which depth of Cellweb® TRP?

The Cellweb® System is provided in four different depths; 200mm, 150mm, 100mm and 75mm. The depth required is determined by the proposed traffic loadings and the site ground conditions. Geosynthetics in house engineering department can provide a free site specific technical recommendation. For free technical and engineering support please contact Geosynthetics Ltd 01455 617139 or the full installation guide can be found on our website www.geosyn.co.uk.

Indicative Cellweb with overfill



Standard HB Kerb with concrete bedding.
Specified by others.



Note: Subbase could be required depending on the existing ground CBR %
and the type of traffic on the surface.

Godwins Arboricultural Limited © 2021
Tree Surveys and Tree Reports

info@godwins.co.uk | www.godwins.co.uk