



ARBORICULTURAL IMPACT ASSESSMENT, PROTECTION PLAN AND METHOD STATEMENT

SITE:	17-29 NEWCASTLE ROAD, READING RG2 7TN
SURVEY DATE:	1 JUNE 2021
REPORT DATE:	5 AUGUST 2022
OUR REFERENCE:	221-1695 16/3/22
ON BEHALF OF:	Phil Brett, Brett Property Developments Ltd.
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CONTENTS

1. INTRODUCTION	3
2. TERMS OF REFERENCE	3
3. DOCUMENTS SUPPLIED	6
4. PROTECTION STATUS	6
ARBORICULTURAL IMPACT ASSESSMENT.....	7
5. DEVELOPMENT / SITE APPRAISAL	7
6. TREE CATEGORISATION	7
7. DEVELOPMENT IMPLICATIONS.....	8
8. SERVICE RUNS	8
9. SITE PARKING, SITE HUTS, MIXING AND MATERIAL STORAGE AREAS.....	9
10. TREE PROTECTION	9
11. GROUND PROTECTION.....	11
12. CONSTRUCTION CONSIDERATIONS.....	14
13. SOFT LANDSCAPING WORKS	16
14. INSTALLATION OF BOUNDARY FENCES.....	16
15. POST DEVELOPMENT PRESSURES	17
ARBORICULTURAL METHOD STATEMENT (PRELIMINARY).....	18
16. METHOD AND PHASING OF WORKS	18
17. CONTACTS	19
18. DECLARATION	19
19. CONCLUSION	20
APPENDIX A – TREE SCHEDULE	21
APPENDIX B – GENERIC INFORMATION.....	27
APPENDIX C – BARRIER INFORMATION	29
REFERENCES	31
DIGITALLY APPENDED TREE PROTECTION PLAN (IN PDF FORMAT)	

ABBREVIATIONS

AIA	Arboricultural Impact Assessment	CMS	Construction Method Statement
AMS	Arboricultural Method Statement	RICS	Royal Institute of Chartered Surveyors
BRE	Building Research Establishment	RPA	Root Protection Area
BS	British Standard	TPBE	Trees and People in the Built Environment
CCS	Cellular Confinement System	TPO	Tree Preservation Order
CEZ	Construction Exclusion Zone	TPP	Tree Protection Plan



1. INTRODUCTION

- 1.1. Harrison Arboriculture Ltd. was commissioned to provide an arboricultural report to include an arboricultural impact assessment, tree protection plan and preliminary method statement for development proposals at 17-29 Newcastle Road, Reading RG2 7TN by Paul Sehmi of PSD Architectural Services on behalf of Brett Property Developments Ltd.
- 1.2. The site co-ordinates are 51°26'23.4"N 0°57'39.7"W which lies within the administrative area of Reading Borough Council.

2. TERMS OF REFERENCE

- 2.1. To provide an assessment of the trees on and around the site regarding their suitability for retention within the context of the development based on the details provided. It assesses which of those will either have an impact on and be impacted upon by the development. The report includes methods by which those impacts can be mitigated if they are available and adheres to the recommendations provided in British Standard 5837:2012 'Trees in relation to design, demolition and construction - Recommendations' (BS 5837)
- 2.2. The report includes:

An Arboricultural Survey

The survey provides a plan indicating the size and positions of the trees. The dimensions scaled based on the general topographical and building features indicated by the Ordnance Survey plan © Crown Copyright and database rights 2018 OS 100047474, the final plan will be at 1:500 or larger as per RICS (Royal Institute of Chartered Surveyors, 2014) specification, it provides:

- Identification details and assessment of the current condition of trees within and close to the red line site.
- Recommendations for remedial works necessary and available to maintain their health and/or safety within the context of the development (for trees within the ownership of the applicants).



- Categorisation as per BS 5837 : 2012.

An Impact Assessment (AIA) / Constraints Plan

Based on the tree survey and proposed layout as illustrated by drawing reference Land to Rear of Newcastle Road 28-07-22 provided by PSD Architectural Services. The impact assessment provides:

- Details of tree loss and works (if any) required in implementing the proposed design.
- Identification of both above and below ground activities proposed in the vicinity of retained trees which may be potentially damaging e.g. removal of existing structures, the installation of hard surfacing, services installation and the location and dimensions of all proposed excavations or changes in ground level, including those necessary for the implementation of the recommended mitigation measures.
- The practicability of the scheme regarding access, adequate working space and provision for the storage of materials.
- Theoretical Root Protection Areas (RPA's) denoted as nominal circular areas centred on the trunk for all trees categorised A and B will be listed in the tree schedule.
- The RPA's for trees categorised C will be included in the tree schedule but will only be relevant where they are not under the ownership or management of the applicant or where they are to be retained within the development.

A Tree Protection Plan (TPP)

This will provide:

- Recommendations for the construction and positioning of suitable tree protection. It includes barrier fencing and both permanent and temporary ground protection where appropriate based on the AIA.
- The report will include possible methods to mitigate the adverse impacts of the development. The TPP illustrates the areas within or close to the RPA's within which measures are necessary to protect the root areas of retained



trees.

Predicted impacts plan

- The predicted impacts are provided on plan reference 221-1695 28/7/22 TPP and assess the expected impacts of the retained trees for the period of around 5 years post development. The shade prediction is based on guidance provided by Building Research Establishment (BRE) in Site Layout Planning For Daylight and Sunlight - A guide to good practice (BRE, 1991) and the predicted canopy growth on data provided by Trees and People in the Built Environment II (TPBE II) paper - Determining tree growth in the urban forest (Rogers et al, 2014)

An Arboricultural Method Statement

This will provide a precautionary approach appropriate to the proposals. It will describe the methods and sequence of tree protection that should be adopted in order to demonstrate that the operations can be undertaken with minimal risk of adverse impact on trees to be retained. It may require relevant information from other specialists. It will include some or all of the following:

- any operations proposed within the RPA (or crown spread where this is greater);
- removal of existing structures and hard surfacing;
- installation of temporary ground protection ;
- excavations and the requirement for specialised trenchless techniques ;
- installation of new hard surfacing including materials, design constraints and implications for levels;
- specialist foundations including installation techniques and the effect on finished floor levels and overall height;
- retaining structures to facilitate changes in ground levels;
- preparatory works for new landscaping;
- An auditable/audited system of arboricultural site monitoring, including a



process by which adherence to the agreed methods and phasing within this report can be monitored;

- A schedule of specific site events requiring specialist arboricultural input or supervision; and
- A list of contact details for the relevant parties.

2.3. The scope and limitations of the report are listed in Appendix B – Generic Information.

3. DOCUMENTS SUPPLIED

Table 1 - Document summary

Document Title	Provided by	Reference
Topographic Survey	Pulse Mapping	210317
Layout Plan	PSD Architectural Services	-

4. PROTECTION STATUS

4.1. Trees subject to constraints such as Tree Preservation Orders and Conservation Areas are protected under the law. Harrison Arboriculture was not instructed to investigate whether trees on or adjacent to the site are protected. It is suggested that written confirmation from Reading Borough Council is sought formally establishing the legal status of these trees prior to any works being undertaken outside the remit of an approved planning application.



ARBORICULTURAL IMPACT ASSESSMENT

5. DEVELOPMENT / SITE APPRAISAL

- 5.1. The site is an empty plot previously rear gardens at 17-29 Newcastle Road, Reading RG2 7TN. It was surveyed on 1 June 2021.
- 5.2. The development proposal is for the construction of a residential estate with access through what is presently number 19 Newcastle Road. Site topography is broadly flat across the site which overall slopes upwards slightly from south to north. There are a number of mature trees situated on the adjacent land to the north and semi/early mature trees growing through an informal boundary hedge to the north-east.
- 5.3. The development does not require any significant level changes in proximity to the off-site retained trees.

6. TREE CATEGORISATION

- 6.1. The method of categorisation as provided by BS5837 can be found at Appendix A. The following is a summary of the trees present on the site and their grade (table 1). A and B category trees are a material consideration in the development process; the subcategories 1, 2 and 3 are intended to reflect arboricultural, landscape and cultural values respectively.

Table 2 - Tree Category Summary

C1	2		A	0
C2	0		B	6
C3	0		C	2
B1	2		U	0
B2	4		Total	8
B3	0			
A1	0		T	6
A2	0		G	0
A3	0		H	2
U	0		W	0



Total	8		Total	8
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7. DEVELOPMENT IMPLICATIONS

- 7.1. The primary criterion, in Arboricultural terms, is the retention of as many appropriate trees as practicable, allowing development to proceed whilst providing them with space and protection both during and subsequent to the completion of the development. The following is an assessment of the likely impact of the development on trees which are worthy of retention and guidance on the type and extent of protection required to ensure their continued wellbeing within the proposed development and the future landscape.
- 7.2. The gardens to the northern side of the proposed dwellings lay within the RPAs of offsite trees no. 1 – 4. Most tree roots are typically found in the upper 600mm of soil and any excavation of the ground within these areas has the potential to damage roots and impact the future health of the nearby trees. Soil levels over the tree root areas must be left largely unaltered and excavation avoided.
- 7.3. Footpaths providing access to the rear of the rear gardens and sheds/cycle stores are proposed within the RPAs of trees no. 1 – 4. A Cellular confinement system (CCS) installed using “no dig” techniques and of a sufficient depth appropriate to the traffic expected, i.e. pedestrian and cycle will minimise root and soil damage. Examples of suitable CCS providing a surface with sufficient rigidity to spread loads and prevent soil compaction or rutting are described in section 10. Water permeation into the root area will be maintained by the use of a permeable surface.

8. SERVICE RUNS

- 8.1. We have not been provided with details of underground services at this stage of the project. The electricity, gas and foul and grey water drains will require routing well outside the protection areas of trees which are to be retained. It is unknown whether there are existing services from which supplies might be taken to feed the proposal. However in any case, where it is unavoidable that underground services pass within the RPA's of the retained trees. Prohibitions on excavation within the



RPA's also applies to service installation and a specific method statement will be required describing the method to be used to minimise any root damage. These may potentially involve hand digging within the root areas and laying pipework between any significant roots or moling from a position outside the RPA's

9. SITE PARKING, SITE HUTS, MIXING AND MATERIAL STORAGE AREAS

- 9.1. All deliveries, material storage and contractor parking shall make use of the proposed new access from Newcastle Rod and hard surfaces. Materials must not be stored within or close to the root protection areas indicated on plan reference 221-1695 28/7/22 TPP. If additional space is required for the storage and/or mixing of building materials within or close to the RPA's of the retained trees, sufficient ground protection must be installed to prevent soil compaction and/or contamination by any spillage.
- 9.2. It is not known whether site huts are required for the site at this stage. If site huts are to be used they shall be sited away from the RPA's of retained trees. Site huts in close proximity to the existing tree protective barrier line which require siting on unsurfaced ground, shall have appropriate footings or be situated on a temporary surface. This is to reduce the potential for ground compaction. Site huts can be used as part of the protective barrier boundary, and in some cases, can be beneficial where installation does not conflict with the aerial parts of the tree.
- 9.3. If it is proposed that site huts, ground protection or stores are to be located within the RPA of retained trees for more than 3 months, a temporary irrigation and aeration system will be installed to ensure that the rooting environment is maintained in a good condition. The system will include a compressible layer of composted wood chip or forest bark over a geotextile separation layer, on which ground protection or site huts can be placed. Watering will depend on permeability of the soil, weather conditions and the extent of the area covered, but should include weekly watering from April to September, when no rainfall has occurred for more than four consecutive days.

10. TREE PROTECTION



10.1. Exclusion of construction activity from the unprotected recommended root protection areas from the outset will ensure those trees identified for retention are maintained in a safe and healthy condition preventing the following. They should be retained in place for the duration of the development to prevent:

- Root severance
- Damage to the bark, branches and trunks
- Compaction of the soil within the Construction Exclusion Zone
- Alterations in soil level
- Soil contamination by phytotoxic materials such as herbicides, petrol, oils, diesel, cement and concrete washings or other construction additives

Barrier Fence

10.2. Tree protection barriers will be erected prior to the construction process and shall remain in place until completion of the development. Signs will be attached informing all site staff that the area is to remain fenced, examples of signage can be found at the end of this document which can be laminated or generic signs can be purchase on line.

10.3. The position of the Tree Protection Fencing is shown on the Tree Protection Plan reference 221-1695 28/7/22 TPP appended at the end of this document.

10.4. The barrier fence in accordance with BS5837 2012 Section 6 Figure 3 (figure 1) is considered fit for purpose for this site given the size of the development and the degree of works taking place in proximity to the retained trees. The position of the Tree Protection Fencing is shown on the Tree Protection Plan reference is 221-1695 28/7/22 TPP appended at the end of this document. This should be constructed with weld mesh panels, at least 2m high, securely fixed together with wire or scaffold clamps and braced with to ground anchored supports at a maximum spacing of one every two Heras panels (every 6m) to brace the fence sufficiently to resist impacts. The BS figure has been reproduced at the end of this section.

10.5. Any adjustments or removals of the tree protection measures will only be carried

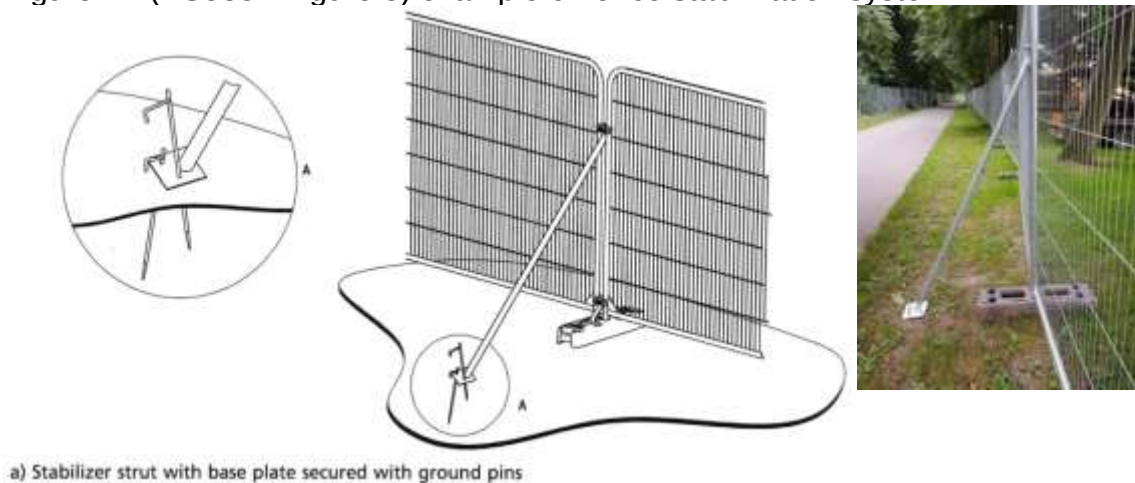


out following consultation and agreement with the project arboriculturalist and/or the Local Authority tree officer.

10.6. The following shall apply to the areas within the tree protection area:

- No mechanical excavation and excavation by other means only with Arboricultural supervision
- Hand digging shall only be carried out following a written method statement approved by the project arboriculturalist
- No adjustment to ground levels,
- No storage of plant or material,
- No storage or handling of any chemicals including cement washing,
- No vehicular access,
- No fires.

Figure 1 - (BS5837 Figure 3) example of fence stabilization system



11. Ground Protection

11.1. Ground protection will be required where construction activity within or access across the RPA's is necessary. This is to prevent root damage and soil disturbance or compaction and is required for the duration of the development. This will be temporary where incursion is to facilitate the construction and



permanent where traffic over the root area is required subsequent to the completion of the development.

- 11.2. Permanent ground protection is required to facilitate a footpath access over the RPAs of trees no 1 – 4 and temporary protection to provide sufficient work space and scaffold base to the rear of plot 2 – 4 and to the west of plot 8.

Permanent Ground Protection

- 11.3. Most tree roots are typically found in the upper 600mm of soil and the traditional construction of roads and paths which require excavation of the soil and compaction of multiple load bearing sub layers is not available within such areas. In addition increasing the depth of soil over the roots can impede the movement of oxygen and water to the root area. Therefore soil levels over tree root areas must be left largely unaltered.
- 11.4. Where construction activity is necessary close to trees for example roads, driveways, paths and parking areas (within or close to the recommended RPA's) ground protection is required to prevent root damage, disturbance of the soil structure and/or compaction.
- 11.5. A Cellular confinement system (CCS) allows a “no dig” solution, providing a surface with sufficient rigidity to spread loads and prevent significant soil compaction and rutting. Cellweb TM or ACO Ground Guard (figure 2) are examples of suitable systems.
- 11.6. When installing a CCS using ‘no dig’ techniques it should be a minimum distance of 500mm from the tree base, no more than 5m wide and there must be:
- No excavation within the root protection area – roots must not be cut, ripped, broken or severed.
 - No soil stripping or grading within the root protection area – ground levels must not be changed
 - No compaction within the root protection area – all traffic must be excluded from the area
 - CCS construction should not be undertaken while soil is saturated as it is less prone to compaction when dry.
- 11.7. Prior to commencing any construction, including surface protection, protective fencing must be erected around trees as per section 9 in positions denoted on



plan reference 193/1550/5/15/2021 TPP to form an exclusion zone. This will ensure roots within the exclusion zone will not be severed and the soil will not be compacted during the construction work, allowing continued water permeation and oxygen diffusion to the soil beneath.

Permanent Ground Protection Construction

- 11.8. The CCS must be installed at ground level. High spots must not be graded off and hollows should be filled with clean sharp sand. This may raise final levels which should be considered by architects and designers. In this case the existing drive will not support root growth and it can be removed to the current base layer using the intact drive surface as a platform for any machinery to break up and remove the existing drive.
- 11.9. Once the surface layer has been removed there should be no vehicular movement over the root area until the CCS has been installed and then only those for which it has been designed.
- 11.10. The CCS will be installed in the following sequence.
 - Following the removal of the existing surface layer the structure will be constructed over a geotextile separation layer placed on the ground. This prevents material being pressed into the underlying soil.
 - The prohibition on excavation within the RPA also applies to kerbing. Kerbing may be concrete or wooden but in any case must lie over the existing ground level and pegged into place using spikes through the geotextile separation layer. This will contain the cellular confinement system preventing lateral spread.
 - A three dimensional CCS made out of High Density Polyethylene (HDPE) and conforming to ISO 13426-1:2003 is placed over the geotextile separation layer. The CCS requires expanding to its maximum and secured to the kerbing and filled with no fines angular aggregate.
 - The required thickness of CCS is dependent on the California Bearing Ratio (CBR) of the soil. Typically 100mm in depth is sufficient to support light traffic such as cars and light vans for soil with a CBR >3 and 200mm in depth if heavier vehicle use is expected. The project engineer should specify the appropriate depth based on the CBR.
 - A further geotextile is to be placed over the CCS and the final porous wearing layer laid over the top of that.



Figure 2 - Example specification for permanent ground protection (Cellweb)

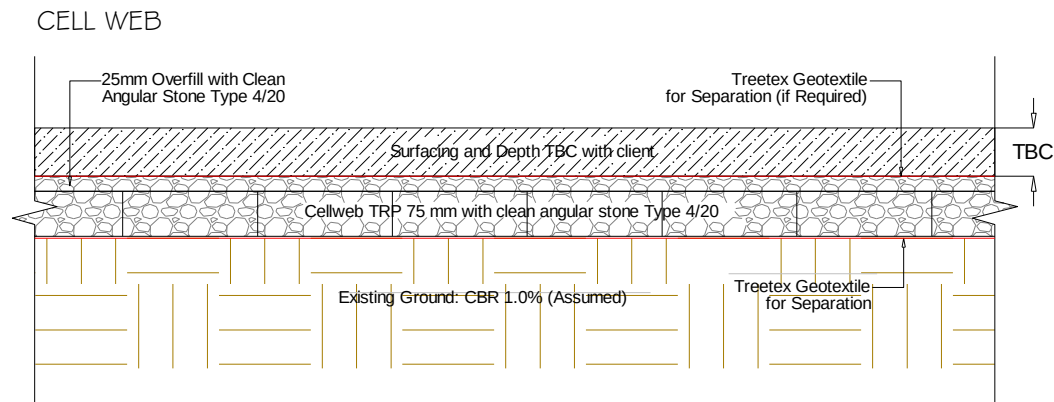
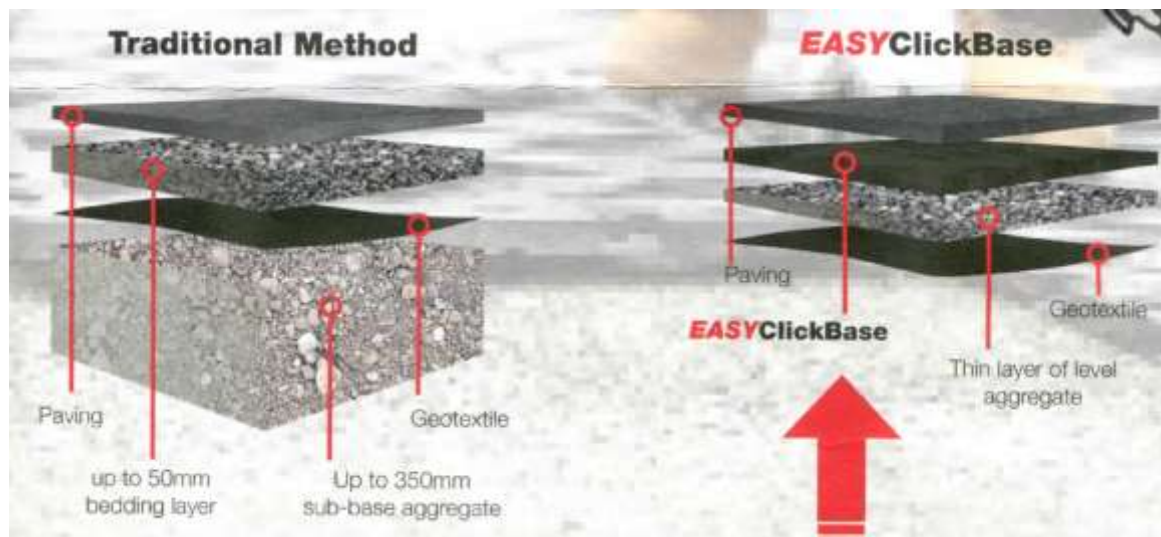


Figure 3 - Example specification for permanent ground protection (Azpects Easy Click)



Temporary Ground Protection

11.11. The principle of ground protection is to spread the weight of anything using the area to prevent rutting or soil compaction and prevent any spillage leaching into the soil. It must be fit for purpose and designed to support the expected traffic. It

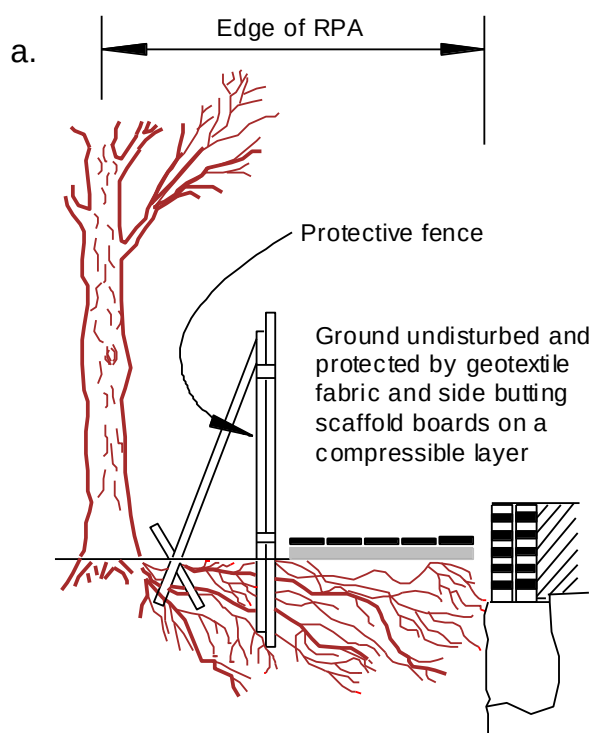


should consist of a rigid surface layer over a compressible base (e.g. wood chip) laid over a separation membrane typically of geotextile.

The ground protection might comprise one of the following:

- a. for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane;*
- b. for pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane;*
- c. for wheeled or tracked construction traffic exceeding 2 t 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. (British Standards Institute, 2015).*

Figure 4: a. Diagrammatic illustration of ground protection within the RPA b. example of temporary ground protection.



b.





12. Construction Considerations

- 12.1. The building footprints are a sufficient distance from the RPAs of the retained trees such that special engineering techniques or methods are not required.

13. SOFT LANDSCAPING WORKS

- 13.1. Any soft landscaping works within the development area should be in accordance with the approved landscape plan, and any specification of such works approved by the local planning authority which should adhere to the following British Standard Specifications and Codes of Practice:

- Trees should be supplied packaged in accordance with the recommendations of BS 3936:1992 Part 1 Nursery Stock - Specification for trees and shrubs;
- BS 4428:1989 - Code of Practice for General Landscaping Operations (excluding hard surfaces);
- BS 8545:2014 Trees from Nursery to Independence in the Landscape;
- The Code of Practice for Plant Handling 2002 (Horticultural Trades Association).

- 13.2. The construction exclusion zone will remain off limits for all site plant and machinery unless fit for purpose ground protection is installed. Pedestrian traffic must be kept to an absolute minimum only permitted for the ground preparation and landscape installation work.

- 13.3. The landscaping works will need to be undertaken in such a way as to avoid level changes, deep digging or mechanical rotovation. Excavation of planting pits within the RPA can cause serious harm the root system of retained trees. Planting pits within the RPA of retained trees will be excavated by hand to avoid damage to roots greater than 25mm and masses of smaller roots.

14. INSTALLATION OF BOUNDARY FENCES

- 14.1. Access within the CEZ for fence construction purposes can also result in soil



compaction and deterioration of the soil structure. Concrete used to support the posts is poisonous to plants and which, if not controlled, can leach into the surrounding soil.

- 14.2. Fencing will need to be designed and constructed to minimise the need for excavation and allow minor variations of up to 300mm between post spacing to allow repositioning of posts where roots which are greater than 25mm are discovered during the excavation of postholes within the RPA of retained trees.
- 14.3. Postholes within the RPA should be excavated by hand and lined with heavy gauge polythene to prevent contamination of the rooting environment.
- 14.4. Fencing should be installed during period of dry weather so as to maintain soil structure and prevent compaction of the rooting environment.
- 14.5. Where significant traffic over the RPA's is required to install the boundary fence, fit for purpose ground protection will be placed along the line of construction to prevent compaction of the rooting environment of retained trees.
- 14.6. Where tree canopies hang low along the line of the proposed fence crown raising to facilitate construction may be required. This must be undertaken by an arboriculturist.
- 14.7. Bracing any part of the boundary fence from retained trees will not be permitted under any circumstances

15. POST DEVELOPMENT PRESSURES

- 15.1. The expected shading cast by the trees is based on guidance provided by Building Research Establishment (BRE) in Site Layout Planning for Daylight and Sunlight - A guide to good practice (BRE, 1991). The shade predictions are illustrated on the Tree Protection Plan reference 193/1550/5/15/2021 TPP appended at the end of this document.

The design of the site does not present any unreasonable impacts or pressures on future residents and no post development pressures for removal are expected.



ARBORICULTURAL METHOD STATEMENT (Preliminary)

16. METHOD AND PHASING OF WORKS

PRE CONSTRUCTION

- 16.1. Prior to the start of any demolition or construction, including material storage, protective barrier will be erected as per BS5837 figure 3 as illustrated in section 10.
- 16.2. It will be positioned as denoted on the tree protection plan reference 221-1695 28/7/22 TPP.
- 16.3. Signage informing all site workers that the area is to remain protected for the duration of the development is to be attached to the fence. An example of signage can be found at the end of this document which can be printed, laminated and securely attached to the barrier fence if required.
- 16.4. The project arboriculturalist will be on hand to provide advice and/or supervision if required.

CONSTRUCTION

- 16.5. All barrier fence and ground protection is to remain serviceable and in position for the duration of the development including demolition of the existing building (no. 19). No adjustments are to be made unless with the written agreement of the planning/arboricultural officer.
- 16.6. Temporary ground protection will be installed prior to the start of construction ground works. This is to provide protection to the ground underlying trees 1-4 and T6 providing a platform from which works can be undertaken. Any spoil resulting from the excavation of the footings must not be stored over the root area.
- 16.7. Landscaping works may be necessary prior to the completion of the build. In this case prohibitions on traffic and movement over the Construction Exclusion Zones will remain in effect and activity will require additional fit for purpose temporary



ground protection, no machine movements and the transport of materials into these areas will be made manually.

- 16.8. The project arboriculturalist will be on hand to provide arboricultural advice if it is needed.

POST CONSTRUCTION

- 16.9. Barrier fence and temporary ground protection is to be removed.
- 16.10. Site reinstatement and landscaping will be undertaken. Prohibitions on traffic and movement over the Construction Exclusion Zones will remain in effect and activity will require additional fit for purpose temporary ground protection, no machine movements and the transport of materials into these areas will be made manually.

17. CONTACTS

Organisation	Contact Name	Contact number	Email / online contact
Applicant	Phil Brett - Brett Property Developments Ltd.	-	-
Agent	Paul Shemi – PSD Architectural services	01252 372 100	Paul@psd-arch.co.uk
Harrison Arboriculture	Mark Harrison	07915 847 367	mark@harrisonarboriculture.co.uk
Reading Borough Council	Case officer	0118 9373787	-----@reading.gov.uk

18. DECLARATION

- 18.1. The statements in this report are based on information provided by the client. It does not take into account, the effects of extremes of climate, vandalism or accident. Harrison Arboriculture cannot accept liability in connection with these factors, nor where prescribed work is not carried out in a correct and professional manner in accordance with current good practice.
- 18.2. The authority of this report is effective for two years from the date of the survey or when any site conditions change, or pruning or other works unspecified in the



Report are carried out to, or affecting, the subject tree(s), whichever is the sooner. It is recommended that a new survey be carried out after twelve months or following any severe weather event or change in the site.

19. CONCLUSION

- 19.1. It is my conclusion that no tree removals are required to facilitate. The proposed development would not have adverse impacts on the long-term vitality of the retained trees providing the methodology set out in this document are followed.



APPENDIX A – TREE SCHEDULE

Site: 17-29 Newcastle Road, Reading RG2 7TN

Date: 1 July 2021

* Recommendations are provided based on the initial survey independent of the proposal by default. Recommendations in italics within parentheses relate to works required to facilitate the development as identified by the impact assessment.

Type	Tree no	Species	Height/m	Diameter/mm	Age	Condition		Life Exp	Canopy Height/m				First Significant Branch Hgt/m	Canopy Spread/m				Comments	Recommendations	Category	Root protection	
						Physiological	Structural		N	E	S	W		N	E	S	W				Radius/m	Area/sqm
T	1	Quercus robur (Common Oak)	23	1250	Mature	Fair	Fair	20+	6	10	12	10	6(SW)	9	11	9	10	Off site. Diameter estimated. Major deadwood in crown. Main stem fire damaged	Remove major deadwood (overhanging the site.)	B2	15	706.95
T	2	Acer campestre (Field Maple)	15	600	Mature	Fair	Fair	20+	6	5	2	6	6(W)	5	6.5	7	5	Off site. Diameter estimated. Ivy on tree. Unable to inspect stem due to Ivy.	None required at time of inspection.	B2	7.2	162.88
T	3	Crataegus monogyna (Hawthorn)	8	200	Mature	Fair	Fair	20+	1	1	1	1		2.5	3	2.5	2	Off site. Diameter estimated. Ivy on tree. Unable to inspect stem due to Ivy. Major deadwood in crown.	None required at time of inspection.	C1	2.4	18.1
T	4	Quercus robur (Common Oak)	23	600	Early Mature	Fair	Fair	20+	1.5	2	4	15	3(NE)	8	6	7	4	Off site. Diameter estimated. Unable to inspect stem due to undergrowth. Major deadwood in crown. Minor deadwood (major dead over adjacent land. Dead ivy up stem, previously severed.)	None required at time of inspection.	B2	7.2	162.88
T	5	Quercus robur (Common Oak)	15	250	Early Mature	Fair	Fair	20+	1.5	2	4	15	3(NE)	6	5	4.5	5	No significant defects noted. Off site. Diameter estimated. Unable to inspect stem due to undergrowth.	None required at time of inspection.	B1	3	28.28
T	6	Acer campestre (Field Maple)	10	300	Early Mature	Fair	Fair	20+	3	4	3	2	1(S)	3	3	4.5	4	Off site. Diameter estimated. Unable to inspect stem due to undergrowth. Major deadwood in crown. Minor deadwood.	None required at time of inspection.	B1	3.6	40.72



Type	Tree no	Species	Height/m	Diameter/mm	Age	Condition		Life Exp	Canopy Height/m				First Significant Branch Hgt/m	Canopy Spread/m				Comments	Recommendations	Category	Root protection	
						Physiological	Structural		N	E	S	W		N	E	S	W				Radius/m	Area/sqm
H	7	Acer campestre (Field Maple), Crataegus monogyna (Hawthorn), Corylus avellana (Hazel), Prunus spp (cherry)	8	300	Early Mature	Fair	Fair	20+										Off site. Diameter estimated. Unable to inspect stem due to undergrowth.	None required at time of inspection.	B2	3.6	40.72
H	8	Crataegus monogyna (Hawthorn), Prunus spp (cherry), Quercus cerris (Turkey Oak), Fraxinus excelsior (Ash)	8	300	Early Mature	Poor	Fair	<10										Off site. Diameter estimated. Unable to inspect stem due to undergrowth.	None required at time of inspection.	C1	3.6	40.72



Key

1. Tree Ref No:

This relates to the numbers on the plan. Where trees have been tagged, the tag number will be used as the tree reference number. Individual trees are not prefixed and prefixed with a G, W or H represent a group, woodland or hedge respectively.

2. Species:

The name given is the Latin name by default. Where common names are given they are shown in parentheses.

3. DBH (Diameter at breast height):

This is the stem diameter at 1.5 metres (breast height') above ground level, given in millimetres. Where trees are multi-stemmed trees the square root of the combined stem diameter is calculated.

4. H (Height):

The height of the tree measured where possible or estimated and recorded in metres.

5. Canopy Spread (Crown radius):

The average crown spread taken from the centre of the trunk to the tips of the live lateral branches given in metres. Measurements following the compass points North, East, South and West.

6. Canopy height:

Ave - Average Crown Height Clearance: (HaB Height above ground) — ground clearance of the canopy for each cardinal point given in metres.

7. First significant branch

The height of the first significant branch the direction of which is shown in parentheses.

8. Age:

Age assessment is based on growth stages rather than actual age in years and are recorded as follows

Y Young



SM Semi Mature – having reached up to 1/3 life expectancy

EM Early mature - having reached 1/3 of the expected life expectancy and is transitioning into maturity.

M Mature - over 2/3 life expectancy

OM Over-mature - fully mature, past peak condition and beginning to decline

V Veteran - trees of interest biologically, aesthetically or culturally because of significant age.

9. Condition

Physiological – Assessment of the overall health and vigour of the tree compared to what would normally be considered typical of a healthy tree of the species.

Condition categories are given as good, fair, poor or dead.

Structural – Assessment of the structural stability of the tree based on visible signs of decay, damage, genetic weaknesses or faults. Structural categories are given as good, fair, poor or dead

10. Life Expectancy:

An estimate of the potential worthwhile remaining contribution – future life expectancy of the tree(s) in the present setting given normal circumstances, given in years (< = less than > = greater than) categorised <10 years, 10 – 20 years, 20 – 40 years and > 40 years.

11. Category:

A quality assessment of the trees based on criteria detailed in BS5837:2012 Table 1

U: Trees unsuitable for retention

A: Those of high quality and value

B: Those of moderate quality and value

C: Those of low quality and value

Assessments are based on their condition on the day of inspection and cannot account for future changes in circumstances.

12. Recommendations:

Preliminary management recommendations in relation to the proposed



development are made where appropriate. These may include remedial tree works that are deemed necessary to improve the quality of the tree or for safety reasons. Recommended tree works will be required to be in accordance with British Standard 3998:2010 Tree Work.

13. Root Protection

Radius – nominal circle centred at the stem centre providing the recommended radius of a circular area necessary for the continue wellbeing of the tree based on recommendations provided in British Standard 5837:2012

Area – The area necessary for the continue wellbeing of the tree based on recommendations provided in British Standard 5837:2012



Table 1

Category and definition	Criteria			Identification on plan
Category U Those in such a condition that 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 <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve</i>			DARK RED
TREES TO BE CONSIDERED FOR RETENTION				
Category and definition	Criteria — Subcategories			Identification on plan
	1 Mainly arboricultural values	2 Mainly landscape values	3 Mainly cultural values, including conservation	
Category A Tree 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 essential components of groups, or of 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)	LIGHT GREEN
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 remediable defects including unsympathetic past management and minor storm damage) such that they are unlikely to be suitable for retention beyond 40 years; of trees lacking the special quality necessary to merit A categorisation	Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features (e.g. trees of moderate quality within an avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality	Trees with material conservation or other cultural benefits	MID BLUE
Category C. Trees of low quality with an estimated life expectancy of at least 10 years, or younger 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 landscape value, and/or trees offering low or only temporary screening benefit	Trees with very limited conservation or other cultural benefits	GREY
	NOTE Whilst C category trees will usually not be retained where they would impose a significant constraint on development, young trees with a stem diameter of less than 150 mm should be considered for relocation			



Appendix B – Generic information

TREE SURVEY

Scope and Limitations of Survey

1. This survey and report are concerned with the arboricultural aspects of the site only.
2. Only trees of significant stature were surveyed. Trees with a stem diameter of less than 75mm when measured at 1.5m above ground level (DBH) have been excluded unless they have particular merit that warrants comment.
3. The survey is restricted to trees that will be affected by the development within and adjacent to the site in accordance with guidelines detailed in British Standard 5837:2012 and with good practice as promoted by the Arboricultural Association and Arboricultural and Forestry Advisory Group (AFAG).
4. This survey is based on a ground level tree assessment and examination of external features only — described as the 'Visual Tree Assessment' (Mattheck and Breloer, The Body Language of Trees, DoE booklet Research for Amenity Trees No. 4, 1994). Although the structural conditions of the trees are considered and remedial action may be recommended it does not constitute a comprehensive Health and Safety report and if one is required it should be commissioned separately. No tissue samples were taken or internal investigations carried out.
5. No soil samples were taken or soil analyses carried out and the risk of tree-related subsidence to structures has not been assessed.
6. Consideration should be given to the timing of the proposed tree works to avoid the active growing period of trees. Tree work should ideally be carried out during the dormant period from November through to February and then again from June to August.
7. Although considered and wildlife habitat potential highlighted, no specific wildlife assessment has been carried out. It should be noted that The Wildlife and Countryside Act 1981, as amended by the Countryside Rights of Way Act 2000 and Conservation - Natural Habitats -Regulations 1994 provides statutory



protection to birds, bats and other species that inhabit trees.

8. This report should be read in conjunction with the Tree Protection Plan. The position of all trees and existing or proposed features are based on the plans provided by the client or other instructed professionals. Where trees have been omitted from the plans provided their position has been estimated or where possible plotted by triangulation.

Survey Method

1. In order to provide a systematic and consistent evaluation of the trees situated on the site, the following methodology was used in accordance with BS 5837: 2012.
2. The stem diameters of single stemmed trees were measured in millimetres at 1.5m above ground level (DBH). Multi-stemmed trees were measured at 1.5m above ground level and the RPA arrived at as per section 4.6a BS 5837:2012.
3. The height of visible trees was measured using a clinometer and estimated visually where view to the upper canopy obstructed.
4. The crown radii were measured where possible or estimated where access is restricted and are given for each cardinal point.
5. Where access to trees was obstructed or obscured, dimensions have been estimated.
6. Each tree has been assessed in terms of its arboricultural, landscape, cultural and conservation values in accordance with BS 5837: 2012 which are detailed in the Tree Schedule.



CONSTRUCTION EXCLUSION ZONE

BARRIER FENCE MUST NOT BE MOVED

**THE FOLLOWING IS PROHIBITED WITHIN THE
PROTECTED AREA**

No excavation, mechanical or otherwise

No adjustment to ground levels

No storage of plant or material

No storage or handling of any chemicals

No vehicular access

No fires



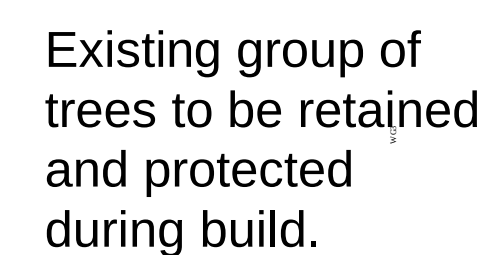
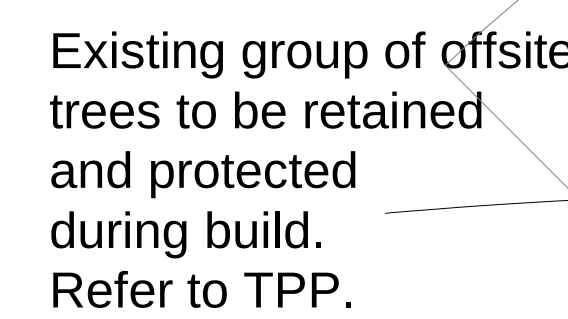
Additional examples of suitable signage





REFERENCES

- BRE. (1991). *Site Layout Planning For Daylight and Sunlight - A guide to good practice*. Construction Research Communications Ltd.
- British Standards Institute. (2015). Surveying for Bats in Trees and Woodland. *BS 8596*. British Standards Institute.
- Countryside Rights of Way Act . (2000). London: HMSO.
- H., M. C. (1994). *The body language of trees, Research for Amenity Trees no. 4*. HMSO.
- K. Rogers, V. L. (2014). Trees and People in the Built Environment II. *Determining Tree Growth in the Urban Forest*, (p. 84).
- Lonsdale, D. (2001). *Priciples of Tree Hazard Assessment and Management*. London: HMSO.
- Rogers etal. (2014). TPBE II paper - Determining tree growth in the urban forest. Institute of Chartered Foresters.
- Technical Committee B/213, Trees and tree work. (2010). *Tree work - Recommendations*. London: BSI Standards Limited.
- Technical Committee B/213, Trees and tree work. (2012). *Trees in relation to design, demolition and construction - Recomendations*. London: BSI Standards Limited.
- Wildlife and Countryside Act. (1981). London: HMSO.



No soakaway to be used within the tree root zone.
All drainage to site to connect to drainage in road, in line with drainage engineer design.

Minimum 1.8m high close boarded fence between plots and boundary.

Minimum 1.8m high close boarded fence to all site boundaries.

All paths Part M compliant.

All parking spaces on site to be min. 2.5m x 5.0m in line with parking and transport consultant report.

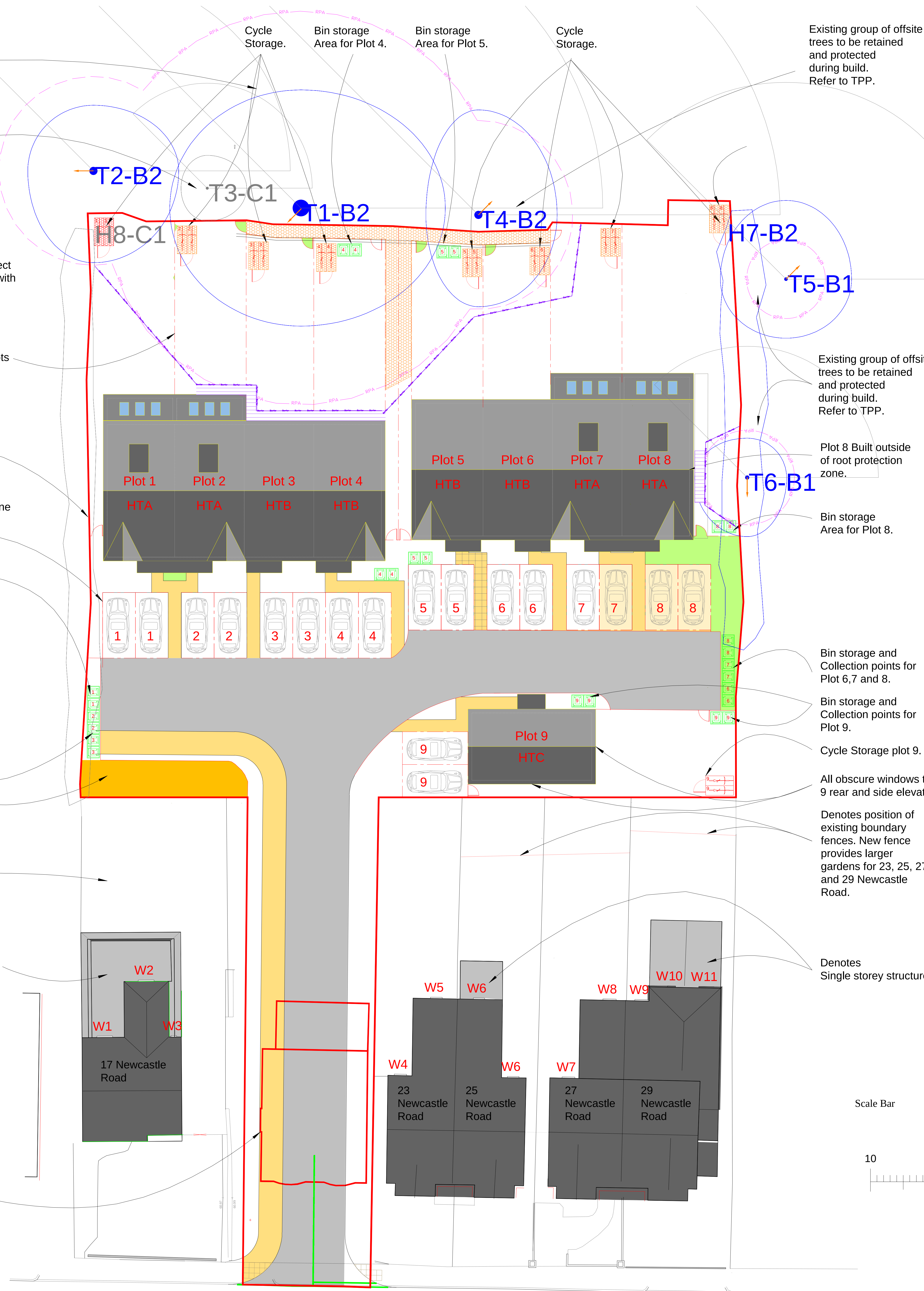
Bin storage and
Collection points for
Plot 1,2 and 3.

Natural wild flowers.

Retained Garden area
to No.17 Newcastle Road.

Denotes
Single storey structure.

Red dashed outline denotes existing dwelling at 19 Newcastle Road to make way for new access road into development.



Existing group of offsite trees to be retained and protected during build.
Refer to TPP.

Existing group of offsite trees to be retained and protected during build. Refer to TPP.

zone.

Bin storage
Area for Plot 8.

Bin storage and
Collection points for
Plot 6,7 and 8.

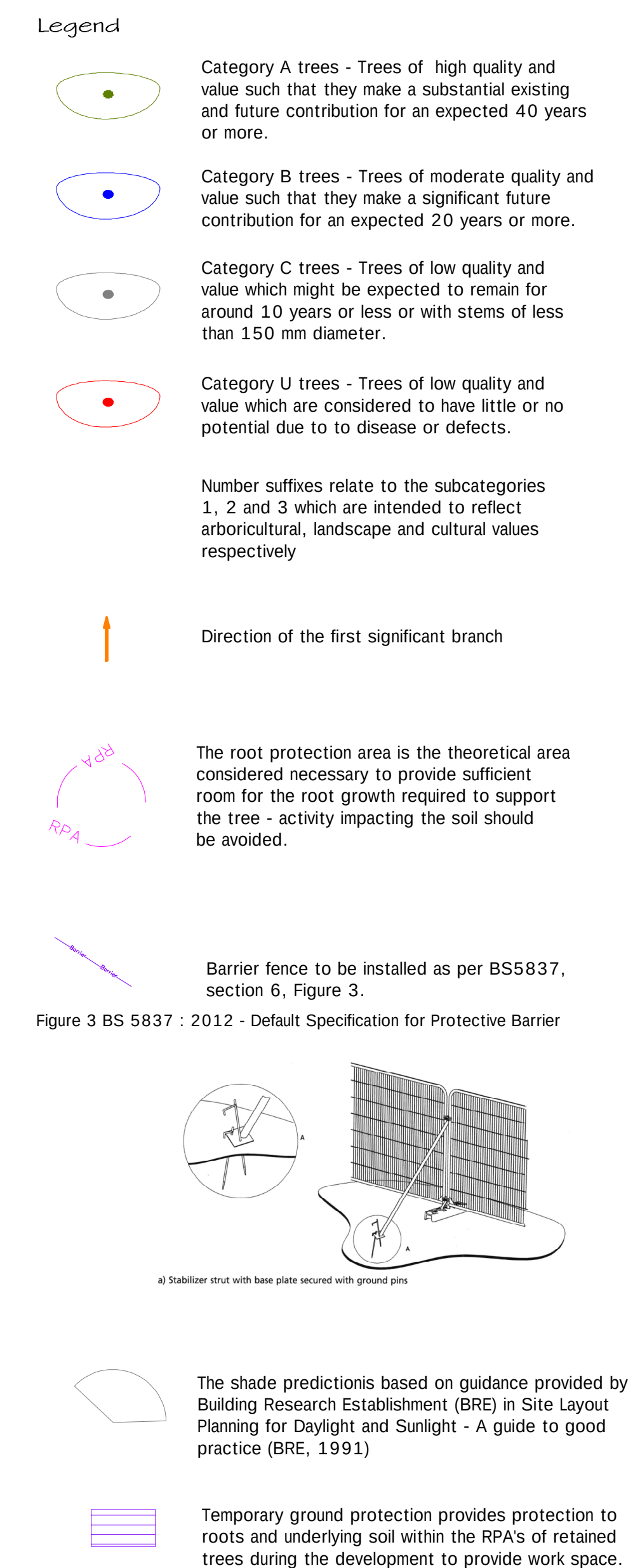
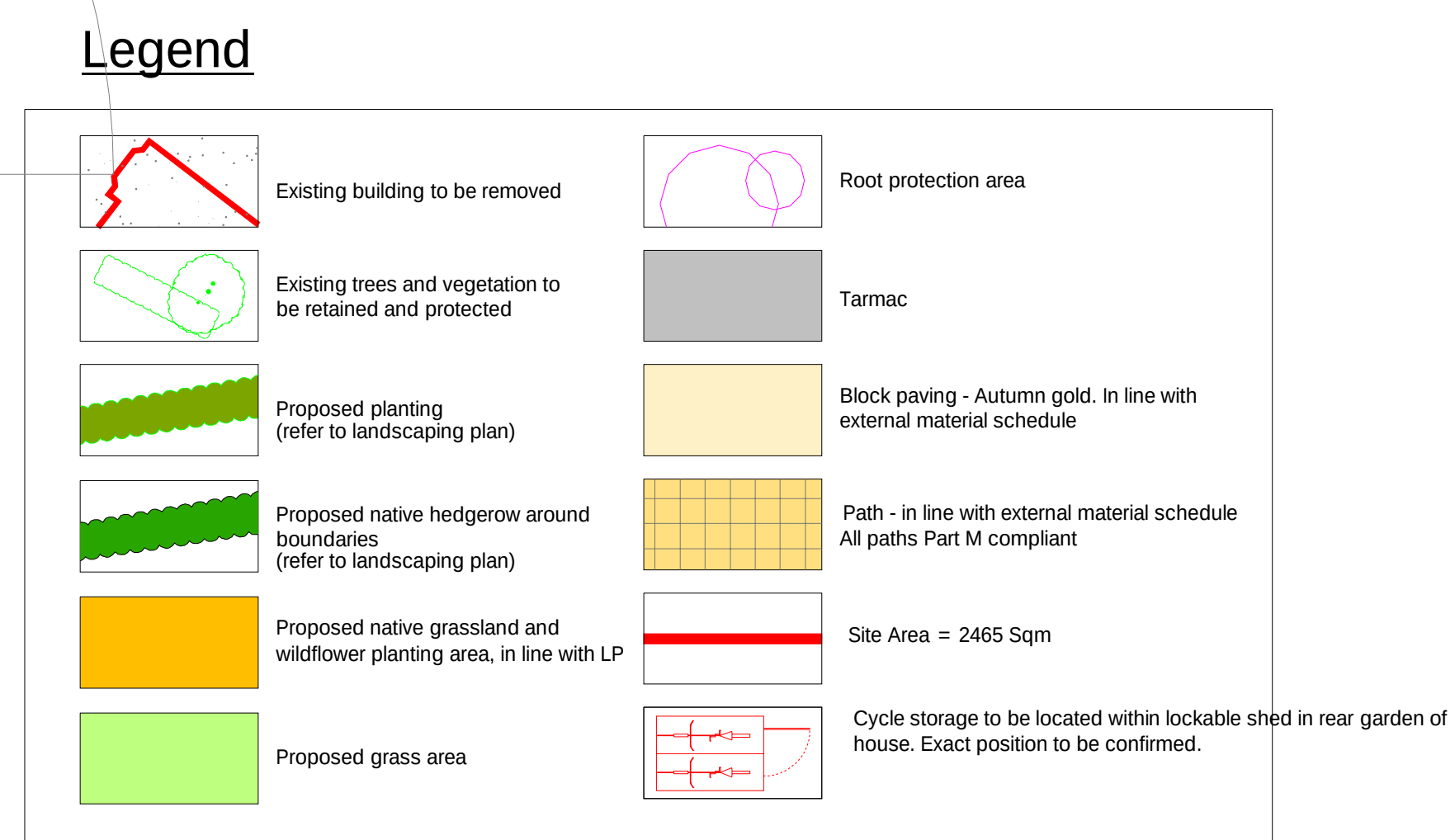
Bin storage and
Collection points for
Plot 9.

Cycle Storage plot 9.

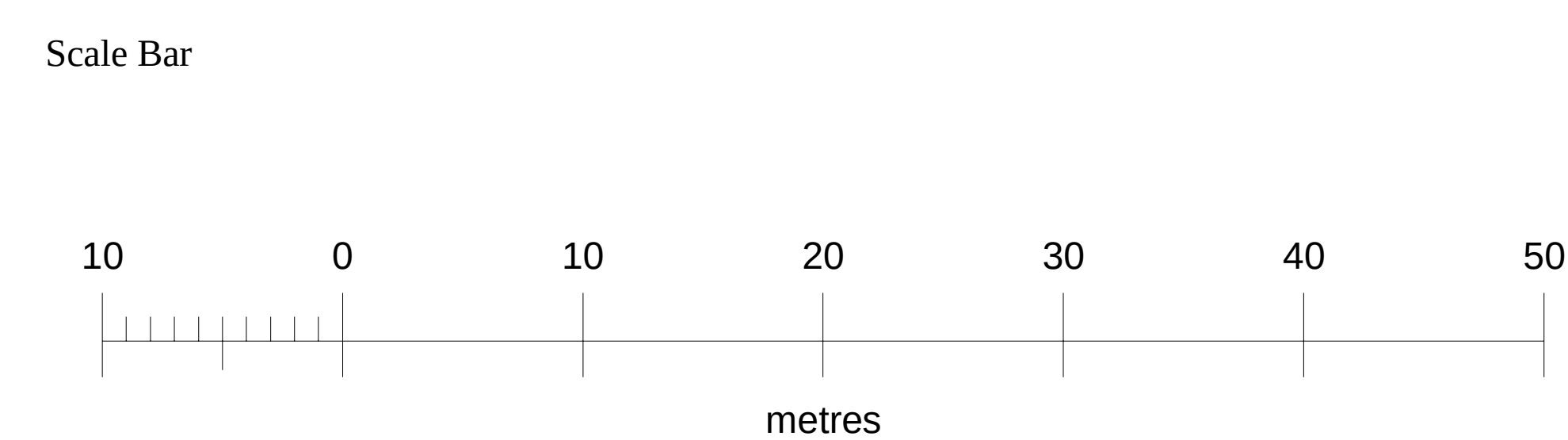
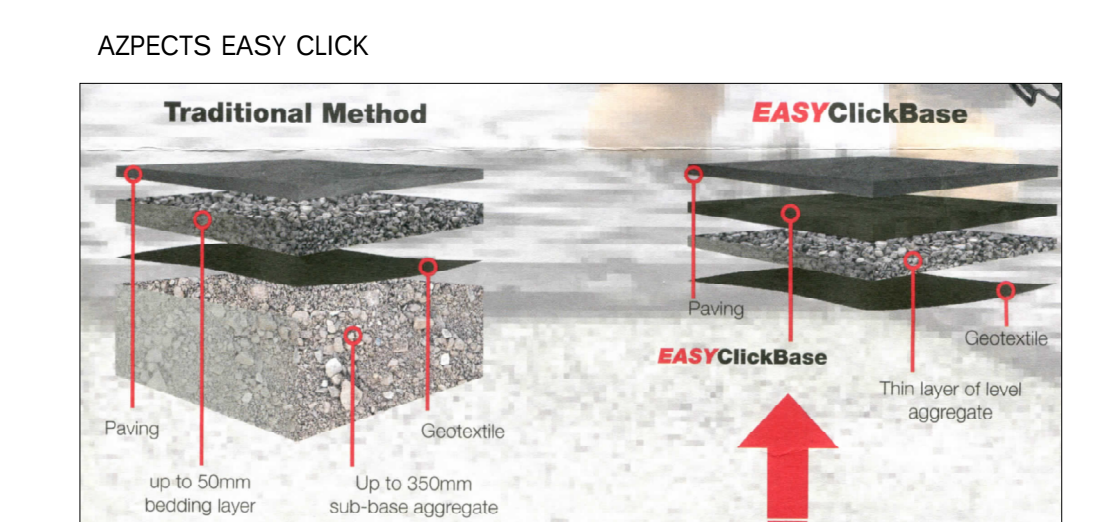
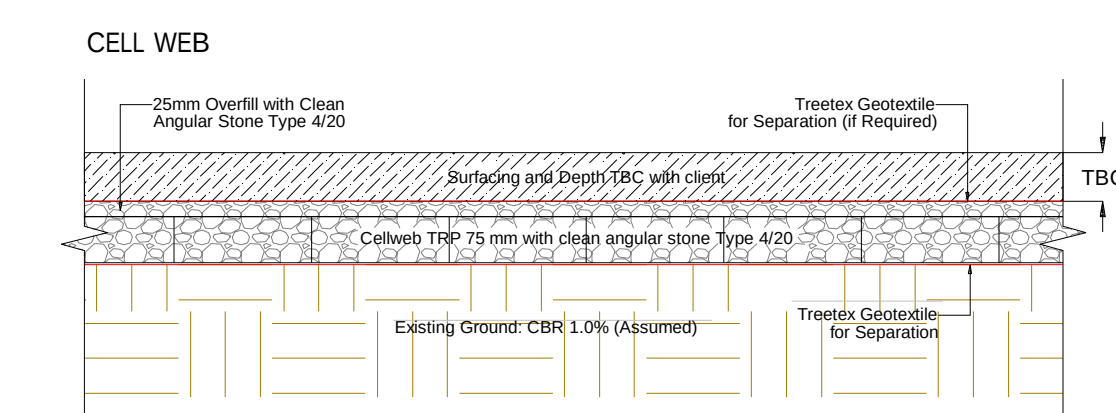
All obscure windows to plot
9 rear and side elevation.

Denotes position of existing boundary fences. New fence provides larger gardens for 23, 25, 27 and 29 Newcastle Road.

Denotes
Single storey structure.



INDICATIVE FOOTPATH CROSS-SECTION BUILD-UP OPTIONS



CIENT	PSD Architecture									
SITE	17-29 NEWCASTLE ROAD, READING, RG2 7TN.									
DRAWING	Title	Tree Protection Plan								
	Version	0.1			Revision	A				
	Base plan ref.	Land to rear Newcastle Road 28-7-22								
	DRAWING NO.	221-1695 16/3/22 TPP								
	SCALE	1:250 @ A0								
DATE	3 August 2022									
DRAWN BY	M.Harrison									
Harrison Arboriculture Ltd.  Telephone - 07915 847 367 email - admin@harrisonarboriculture.co.uk										