Arboricultural Report

Planning and Development

Arboricultural Appraisal and Implications Assessment

Project Name and Address	**The Moorings, Eel Pie Island, Twickenham**		
Prepared for	Clive Chapman Architects	**Project Ref**	-
ACS Ref	ha/aiams1/19/themoorings	**Client**	Mr Beck & Ms Calam
Prepared by	Hal Appleyard Dip. Arb (RFS), F.Arbor. A. MICFor RCArborA		
Report Date	21st June 2019		

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Hal Appleyard is an Arboricultural Association Registered Consultant and a Chartered Forester

ACS (TREES) Consulting

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Appendices

Executive Summary

The proposed construction of a cabin-style garden studio is positioned near to retained trees within a conservation area. The extent of the construction for the studio structure within the BS rooting areas of the retained trees, amounts to 0.5% and 1.6% of T1 and T2 respectively. This study assesses the impact of the proposed construction project upon the trees as negligible (neutral). Standard tree protection measures as set out in principle in this report will secure the safe protection of the trees in this conservation area.

1.0 Introduction and Scope

1.1 A planning application for the construction of a single-storey garden room and single-storey rear extension is to be submitted for consideration by the Local Planning Authority.

1.2 The proposed construction is to be undertaken in the vicinity of trees within a conservation area. The implications upon the trees and the methods for tree protection and preservation during ground works, demolition and construction are set out in this report and which includes a requisite a tree protection plan.

1.3 I have been appointed on behalf of the site owners as a competent and qualified arboricultural consultant to provide this report and to supervise any works that may have the potential to affect the protected and retained trees.

1.4 The trees have been inspected on 29th May 2019. The details are provided in accordance with the guidance set out in BS 5837:2012 'Trees in relation to design,

demolition and construction- Recommendations' (the BS) and an extract from that guidance is appended herewith. The root protection areas (RPAs) of the relevant trees are indicated upon the plans. Some RPAs may be modified from the standard circle by the presence of structures in the ground e.g. foundations, roads or kerbs.

2.0 The Site and Trees

2.1 The site comprises the rear garden of an existing single storey residential dwelling on Eel Pie Island. The rear garden area supports young and mature trees but is predominantly flat lawn, which leads down to the River Thames upon the northern boundary.

Fig. 1 The site - looking North (toward the River)

2.2 The BS details of the trees are provided within the tree survey schedule at **Appendix 1** and their corresponding positions are shown on the tree protection plan included at **Appendix 2**.

2.3 The trees, which are most relevant to this project include two mature Weeping Willow trees Nos T1 and T2. The other trees are detailed with the schedule and are remote from the proposed construction area but are included for site context.

2.4 T1 is subordinate to T2, which is the more symmetrical tree. Typically, both trees, possess some dead wood but recent pruning has pruning has been effective in maintaining the trees in good order. The trees are a significant feature of this part of the local landscape.

Fig. 2 The proposed garden room will be obscured from public vantage points by the presence of the trees T1 and T2

Proposed Construction and associated works

2.5 The proposal involves the construction of a single storey garden room, which take the form of a light-weight wooden structure. Paved paths from the house to the garden room and additional decking for seating are proposed.

2.6 Subject to the implementation of the tree protection measures from the outset of construction, the trees of importance to the landscape, will not be adversely affected by the proposals.

Table 1 Summary of Implications of Construction on Trees*

Tree Ident.*	Landscape Contribution	Implications /Impact	Mitigation measures	***Tolerance[1,2]	Impact Assessment**
T1, T2	High	Construction within RPAs 0.5 and 1.6%	1. Erect tree protection and install ground protection	High	Neutral

* Main trees selected for comment included above. Refer to previous notes on other trees.

** Negative – adverse impact upon trees and landscape; Neutral – no material impact (negative or positive); Positive – improvement (potential) to tree quality and landscape

*** Tolerance to proposed work within extent of RPA, in association with proposed tree protection – High - No adverse impacts; Medium - Temporary reduction in vitality only; Low - Susceptible to longer-term reduction in vitality and likely to require follow-up management.

1. Matheny. N, Clark. J. R, 1998. '*Trees and development; A technical guide to the preservation of trees during land development*'. ISA
2. Costello, L.R, Jones. K. S, 2003. '*Reducing infrastructure damage by roots: A compendium of strategies.*' ISA Western Chapter.
3. Roberts. J, Jackson. N, Smith. M, 2006. '*Tree roots in the built environment*.' TSO DCLG
4. Lindsey, P. Bassuk, N. 1991 *'Specifying soil volumes to meet the water needs of mature urban street trees and trees in containers'*. Journal of Arboriculture vol. 17 No 6.
5. Harris et al, 1999 *'Arboriculture, Integrated Management of Trees, Shrubs and Vines'* Third Edition Prentice Hall
6. Watson, G.W., Costello, L., Scharenbroch, B. & Gilman, E. 2008 *The landscape below ground III* The international society of arboriculture

3.0 Recommended Tree Protection Methods

3.1 In order to afford protection from general construction processes associated with the building of the new studio room and associated paths, it will be necessary to erect robust tree protection fences/barriers (normally wire mesh panels) in the position indicated on the Tree Protection Plan at **Appendix 2** (TPP1_TM). A recommended example of the type BS grade tree protection is included at **Appendix 3**.

3.2 Following erection of the tree protection fencing/barriers and following the completion of the tree works, I recommend installing the ground protection (refer to the TPP) to ensure that roots under the surface are not damaged by compaction during regular passing by operatives and light machinery. I have included recommended examples of ground protection at **Appendix 3** also.

NOTE: THE APPOINTED ARBORICULTURAL SUPERVISOR IS TO BE CONSULTED BEFORE ANY WORK, EITHER SCHEDULED OR UNSCHEDULED, IS CONSIDERED WITHIN THE EXCLUSION ZONE OR ROOT PROTECTION AREAS OF ANY RETAINED TREE. FAILURE TO DO SO MAY LEAD TO ENFORCEMENT ACTION BY THE LPA.

3.3 In order to ensure that the tree protection measures are implemented effectively, a site monitoring exercise will be undertaken to confirm:

i) The efficacy and accuracy of the fencing and ground protection
ii) Maintenance of tree and ground protection

An example of a site record (tree protection) is provided at **Appendix 4**. In this case, the form will be used as confirmation that all practical precautions have been undertaken in accordance with this method statement.

3.4 A copy of this method statement is to be retained on site for the duration of the build process together with a scaled, colour copy of the Tree Protection Plan.

3.5 The details pertaining to tree protection as set out in this method statement, specifically include:
i) erection of tree protection barriers:
ii) the installation of ground protection;
iii) lines of communication and incident reporting,
are to be explained to the Site Agent at the pre-commencement site meeting. It will be the responsibility of the Site Agent to ensure that all personnel working on site are aware to the tree protection measures processes. A copy of this method statement is to be retained on site for the duration of the build process together with a scaled, colour copy of the Tree Protection Plan.

3.6 Key times for site supervision include:

1. Completion of agreed/necessary tree works
2. Erection of tree protection barriers
3. Installation of ground protection
4. Works within RPAs of retained trees
5. Landscaping

3.7 Effective site monitoring will be undertaken from the outset of the project and at agreed intervals thereafter. The frequency of monitoring may well decrease

following the proper installation of all tree protection measures. Below is a recommended programme of arboricultural supervision. (This programme may alter dependent upon site circumstances or by agreement.)

3.8 The process for recording the tree protection measures will involve:

i) Site Agent to contact Arboricultural Supervisor with a minimum of 5 days' notice of any site work commencement.
ii) Arboricultural Supervisor to monitor site to agree tree protection fencing
iii) When all tree protection is installed in accordance with the tree protection plan, the Arboricultural Supervisor is to arrange with LPA tree officer and relevant contractors **the pre-commencement site meeting** in order to agree the tree protection and subsequent works within RPAs of retained trees and importantly the lines of communication between the on-site contractors, the Arboricultural Supervisor and the LPA tree officer and incident reporting,
iv)Arboricultural Supervisor to record all site visits and distribute reports to LPA tree officer and contractors for their records
v)Subsequent to completion, Arboricultural Supervisor to sign-off and complete.
vi) Any incidents resulting in potential tree damage are to be reported in line with the 'Incident Reporting Flow Chart in **Appendix 4**.

Table 3 Preliminary site supervision schedule

Stage	Action	Arboricultural Supervisor (AS) (Required – Y/N)	Notes
1	Pre-commencement meeting*	Y	Site Agent(SA) and LPA tree officer, contractor to attend
2	Tree works	Y	Following completion of tree works
3	Installation of tree protection and ground protection	Y	PRIOR to ground/demolition works
4	Ground works and Construction phase	Y	AS to monitor tree protection at agreed and suitable intervals
5	Remove tree protection fencing/ground protection	N	No tree protection to be removed without prior agreement with the AS
6	Hard landscaping	Y	Brief landscape company & sign off

3.9 The frequency of tree protection monitoring depends upon the nature of the project. In this case, it will be appropriate for the SA to organise with the AS monitoring visits to be twice in the initial 28 days from commencement and thereafter once every 28 days for two months.

Table 4 Contact List (to be completed **PRIOR** to commencement)

Interested Party	Name	Company/LPA	Contact Number(s)	Comment/ Responsibilities
Site Agent	TBA			Day to day site management; co-ordination of timings; **contact with project Arboriculturist**
Main Contractor	TBA			Legal and administrative running of the project; finance; appointment of and liaison with all project consultants
Arb. Supervisor	TBA			Tree protection and management; dissemination of tree-related information
LPA Tree Officer	Mr C Ruddick	L B Richmond		Tree protection and enforcement
Site Engineers	-	-	-	Technical advice and design
Architects	Mr C Chapman	Clive Chapman Associates	020 8891 3437	Design

TBA – to be advised

***Pre-commencement means i) before any works including tree felling or pruning and ii) before any ground works or demolition commences and upon completion of the initial installation of the tree protection, including ground protection.**

4.0 General site care (trees)

4.1 No fires will be lit on site.

4.2 No access will be permitted to within the fenced or otherwise protected areas (unless for site accommodation or Authorised agreement) at any stage during construction.

4.3 No materials, equipment or debris will be stored within the fenced areas unless agreed with the arboricultural supervisor.

4.4 Areas for mixing are to be located beyond RPAs of trees and contained to prevent leaching into the soil.

4.5 A copy of this report and the Tree Protection Plan is to remain on site at all times.

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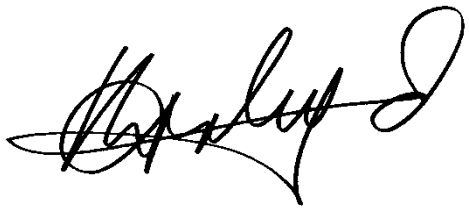
Please note that all relevant planning approvals and approval to planning conditions must first have been issued by the relevant planning authority in order for this report to become effective. We strongly advise that you consult your planning advisors before implementing any recommendations set out in this report.



Hal Appleyard
Date:21st June 2019

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APPENDIX 1

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No.	Species	Height	Trunk Dia.	Radial Crown Spread	Crown Clear-ance	Height to 1st Branch	Life Stage	Physi-ology	Struct. Condition	Landscape Value	Est. Years	Cate-gory	Comments	RPA Radius	RPA m2
T1	Weeping willow *(Salix X chrysocoma)*	12m	820mm	N8m E10m S7m W3m	1m	3m	M	Good	Fair	High	20+	B (12)	Errs east; minor deadwood; storm damage in crown.	9.8m	304.2m²
T2	Weeping willow *(Salix X chrysocoma)*	15m	880mm	N8m E5m S5m W7m	1m	3m	M	Good	Good	High	20+	B (12)	Minor dead wood; low branches; feature at riverside.	10.6m	350.3m²
G3	Evergreen magnolia *(Magnolia grandiflora)*	3m	Avg 100mm	2m	0m	3m	Y	Good	Good	Low	20+	C (1)	Garden ornamentals; screen trees.	1.2m	4.5m²
G4	Holm oak *(Quercus ilex)*	4m	Avg 100mm	2m	2m	2m	Y	Good	Good	Low	40+	C (12)	Young screen trees; some dead wood and foliage.	1.2m	4.5m²
T5	Holly *(Ilex aquifolium)*	6m	100mm	1m	1m	1m	SM	Good	Good	Low	20+	C (12)	Of some boundary screening value.	1.2m	4.5m²
T6	Holly *(Ilex aquifolium)*	7m	100mm 100mm	2m	2m	2m	SM	Fair	Good	Low	20+	C (12)	Garden ornamental; sparse crown; chlorotic foliage.	1.7m	9.0m²

Note: Trunk Diameter (e) = Estimated

Refer also to 'Notes to the Schedules'

Notes to the tree survey schedule

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Notes:

1. No refers to the tree identification number e.g. T1, T2 etc. numbers preceded by 'G' refer to Groups and 'H' refer to Hedges
2. Species refers to the tree name as an English and botanical. (Sometimes the botanical name will not be included)
3. Height describes the approximate height of the tree in meters from ground level.
4. Trunk Diameter is the diameter of the stem/trunk measured in millimetres at 1.5m from ground level. The diameter may be estimated (e), where access is restricted. An average (a) may be taken for tree groups. A full inspection is always recommended.
5. Radial Crown Spread refers to the crown's radius in meters from the stem centre. This dimension is estimated.
6. Crown Clearance is the height in meters of crown clearance above ground level together with the height and direction of the lowest branch
7. Height to first branch is the height in metres from ground level to the first main branch
8. Life stage is the tree's maturity **Y**oung; **S**emi **M**ature, **E**arly **M**ature, **M**ature, **O**ver **M**ature, **V**eteran
6. Physiology describes the tree's general vitality as **Good** (normal), **Fair** (sub normal), **Poor** (weak), **Dead**.
8. Structural Condition - **Good** (no or only minor defects), **Fair** (remediable defects), **Poor** - Major defects present or suspected.
9. Landscape Value (Contribution) - **High** (prominent landscape feature), **Medium** (visible in landscape), **Low** (secluded/among other trees).
10. Estimated Years – Estimated remaining useful years: **10yrs+**, **20yrs+**, **40yrs+**
11. Category - refers to the British Standard 5837:2012 Table 1 Category and refers to the tree/group quality and value; **'A'** - **High**, **'B'** - **Moderate**, **'C'** - **Low**, **'U'** - **Remove or very poor quality**. The sub-category in brackets refers to the retention criteria values where **1** is **Arboricultural**, **2** is **Landscape** and **3** is **Cultural** including **Conservation/ecological, historic and commemorative**.
12. Comments include observations regarding tree condition, setting and function/properties and characteristics
13. RPA radius refers to the radial distance measured in metres from the trunk centre. It is a function of the tree's diameter (s). RPA means root protection area
14. RPA m^2 means the area of the BS standard root protection area derived from the RPA radius.

NB: Column headings may alter and some of the above notes are not applicable to the schedule in question.

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

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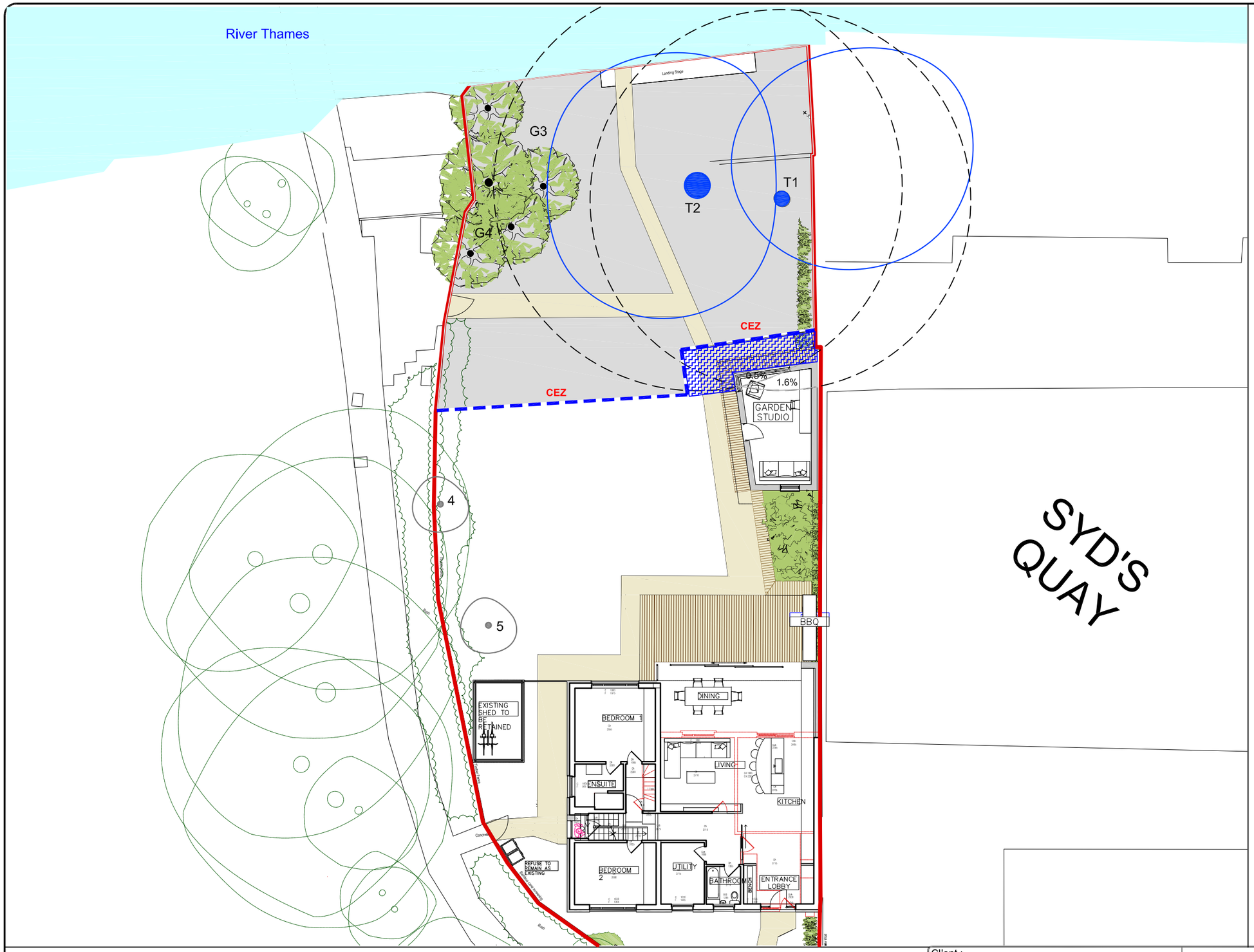

ACS (Trees) Consulting LEGEND

Indicative

BS Root Protection Area, (RPA) shown uniform (above left) but site features such as roadways, retaining walls and foundations, may modify root patterns and therefore the RPA shape.

A grade trees

C grade trees

B grade trees

U grade trees

CEZ — Position of tree protection barriers; denotes **C**onstruction **E**xclusion **Z**one for the duration of the project.

Area for effective ground protection suitable for the project

Tree Management Methods to be adopted on site.

1. Undertake pre-commencement site meeting to agree tree protection methods and timings.
2. Carry out any permitted tree works - ask before beginning.
3. Install all tree and ground protection (see Appendix 3).
4. Undertake demolition and ground works.
5. Construction phase.
6. Remove tree protection and carry out landscaping.

0 5 m 10 m 20 m

Scale: 1:200

Client : Mr & Mrs Beck

Project : The Moorings, Eel Pie Island, Twickenham

Title : Tree Protection Plan

Scale : 1: 200 A3

Dwg No : TPP1_TM

Rev : -

Date : June 2019

Do not scale from this drawing. Any discrepancies are to be reported to ACS (Trees) Consulting.
This drawing is to be used when printed to scale & in colour.

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APPENDIX 3

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Tree Protection Barriers

Specifications (specifically identified by outline box and shading)

2.4m Hoarding

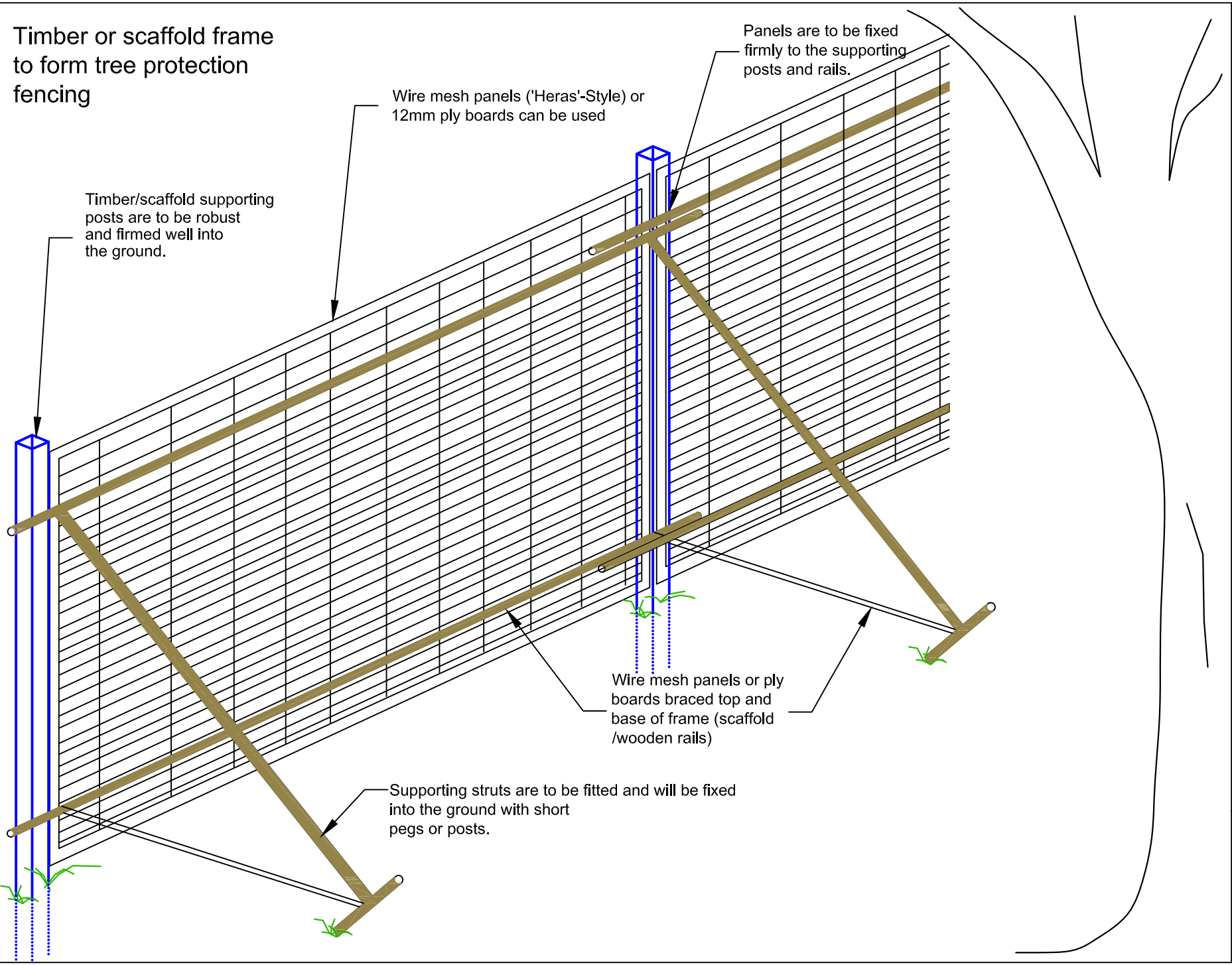
3.0m 100 X 100mm square wooden posts
3 X 38 X 87mm wooden rails affixed to posts
2.4m X 1200 outside grade ply panels (12mm) affixed to rails.
50 X 100mm angled supporting struts affixed internally (quantity as required).

(Supporting posts fixed into position using concrete. All post holes to be hand excavated. Post holes to be no larger than 300 X 300mm.)

'Heras' (Style) Fencing

'Heras' fencing describes the 2.4m galvanised steel mesh panelled fencing normally supplied with block bases and block trays. Block bases are to be used in conjunction with angled scaffold struts only. The use of blocks only is not effective. For extra barrier vertical stability, scaffold poles set at a 45^0 angle upon the 'tree-side' of the barrier and fixed to the ground at the end of each panel. Up-right supporting posts will be braced at the top and the base for added support.

Timber or scaffold frame to form tree protection fencing



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Title:

Example of Tree Protection Fencing

Note:

Steel scaffold or timber can be used to support boards or wire mesh panels

Date: Jan. 07

Ref:

Note: Sketch Plan Only - Not to Scale

Tree Protection Fencing

Scaffold Framework supporting ‘Heras’ type panels with signs attached.

Wooden Framework with ‘Heras’ type panels attached.

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APPENDIX 4

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Arboricultural Site Supervision

ACS CONSULTING

Site:	Project Site Address/Name
Inspected By:	Arboricultural Supervisor (AS)
Client:	Client
Site Agent:	Site Agent's Name (SA)
Date of Inspection:	24/02/2017
Time of Inspection:	8:15:00

Tree Protective Fencing

Tree protection in correct location

Comments/Action

Ground protection - temporary concrete and existing paving

Agreed Construction Exclusion Zone

No debris within construction exclusion zone

Comments/Action

Amendments to Documentation Required

No amendments required

Comments/Action

Remedial Works

Robust hoarding and temporary concrete ground protection

Tree protection Hoarding and ground protection over sharp sand.

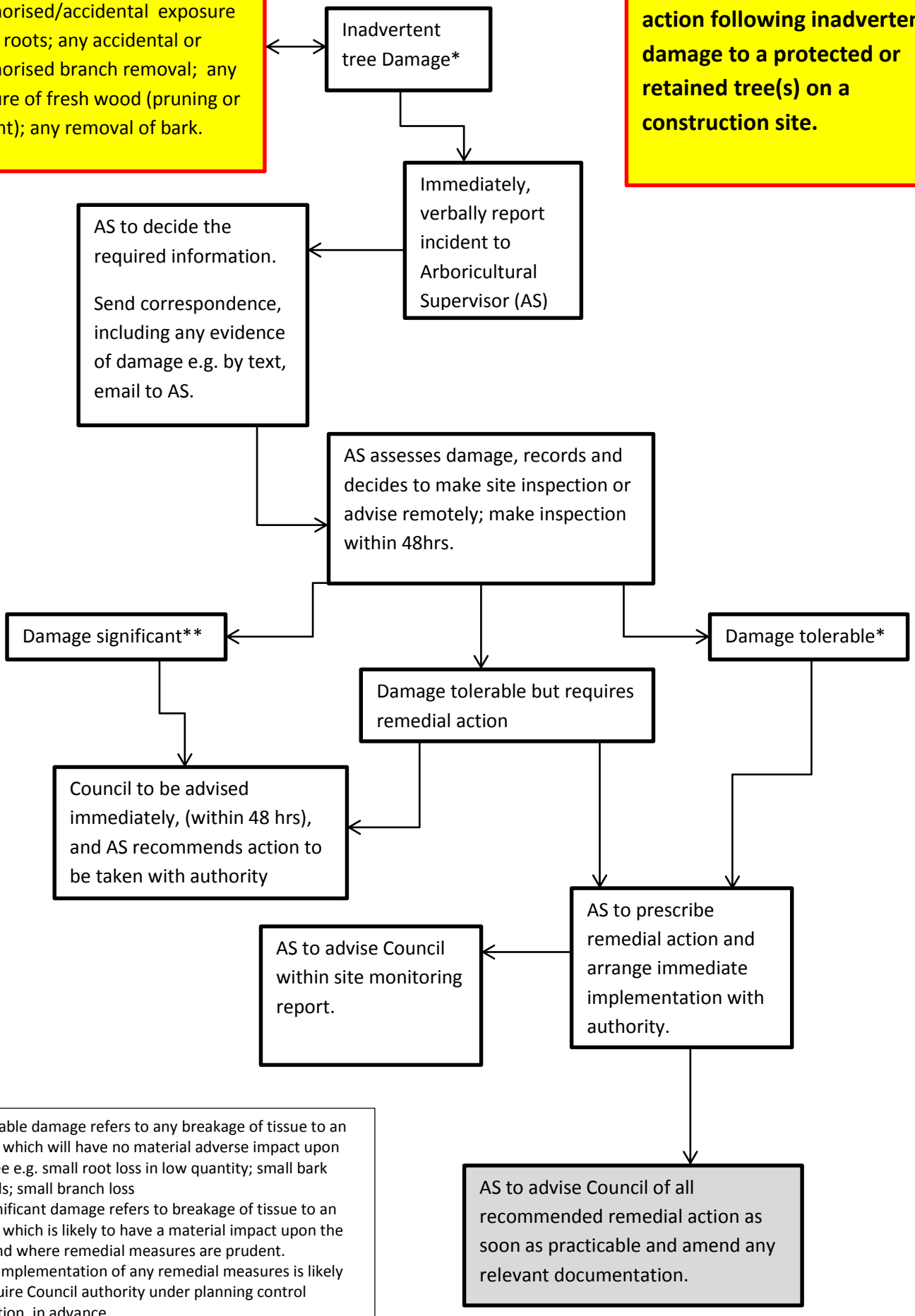
General Comments

1. Tree protection in position and effective
2. Position of site huts used as tree protection for T7 and T10
3. Temporary concrete used for ground protection for T10
4. Hoarding style tree and ground protection effective and in position

Next Inspection April 2017

*Tree Damage is defined as: any unauthorised/accidental exposure of tree roots; any accidental or unauthorised branch removal; any exposure of fresh wood (pruning or accident); any removal of bark.

Procedure for reporting and action following inadvertent damage to a protected or retained tree(s) on a construction site.



*Tolerable damage refers to any breakage of tissue to an extent which will have no material adverse impact upon the tree e.g. small root loss in low quantity; small bark wounds; small branch loss

** Significant damage refers to breakage of tissue to an extent which is likely to have a material impact upon the tree and where remedial measures are prudent.

Note: Implementation of any remedial measures is likely to require Council authority under planning control legislation, in advance.

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