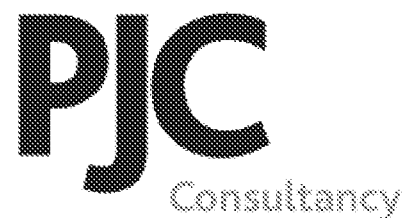


Arboricultural Method Statement

Land at Bilsham Road
Yapton
West Sussex

11th November 2020



PJC ref: 3867/15-03 Rev 02

This report has been prepared by
PJC Consultancy Ltd
on behalf of
Bilsham Road Development LLP

Prepared
by

Luke White FdSc Arboriculture M.Arbor.A

Luke is an arboriculturist with over seven years experience working within the arboricultural and forestry industry with the latter four years working within consultancy. He gained a foundation degree in arboriculture with distinction from the University of Brighton in 2012 and is a professional member of the Arboricultural Association.

Checked
by

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1. Tree Protection Plan
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1 INTRODUCTION

1.1 This method statement is written in conjunction with arboricultural impact assessment ref. PJC/3867/15-02.

1.2 **Instruction:** PJC Consultancy has been instructed by Bilsham Road Development LLP to provide an arboricultural method statement in accordance with BS5837: 2012 '*Trees in relation to design, demolition and construction – Recommendations*', to accompany the outline planning application for a proposed residential development on land adjacent to Bilsham Road in Yapton.

1.3 **Objective of this report:** In order to safeguard retained trees on site during development works it is necessary to implement a tree protection strategy. The objective of the following preliminary arboricultural method statement is to explain the principals of the tree protection methodology to be implemented during the construction phase of development. This report is concerned with the protection of all retained trees at the site including the above ground and below ground parts of the trees as well as their rooting medium.

1.4 **Limitations of report:** This is a preliminary arboricultural method statement based on the information available on the date of the report. The preliminary arboricultural method statement shall be updated to a detailed arboricultural method statement following the detailed design stage of planning, which shall take into account the final site layout, the routing of services and the construction management plan.

1.5 **Contents of report:** This report includes the following:

- Preliminary Arboricultural Method Statement
- Preliminary Tree Protection Plan

1.6 **Documents and information provided:** The following documents were used to aid the preparation of this report:

- 19284-P101 – Proposed Site Layout Full Site (*OSP, Nov 2020*)

1.7 **Limitations of report:** The following arboricultural impact assessment has been prepared using the plans and information listed in paragraph 1.6. The report should not be relied upon if the stated proposal or proposed design changes unless the author confirms the changes do not have a bearing on the arboricultural impacts or recommended mitigation measures.

2 PRELIMINARY ARBORICULTURAL METHOD STATEMENT

2.1 General requirements: The arboricultural method statement and Tree Protection Plan shall remain on site for the duration of construction and landscaping works and be available to site operatives at all times. All operatives at the site shall be briefed about tree related factors as part of their site induction.

2.2 Any variation from the methodology described in the detailed arboricultural method statement shall be discussed with the supervising arboriculturalist and agreed with the local authority arboricultural officer.

2.3 Phasing of works: To ensure trees are protected throughout the development, the proposed development shall occur in the following order:

Table 1: Phasing of works

Works Order	Operation	Notes
1	Initial tree works.	The tree works contractor shall undertake the tree removals and access facilitation pruning specified in the arboricultural impact assessment. Completion of these works will be required to enable the installation of tree protection barriers.
2	Installation of tree protection barriers.	Tree protection fencing shall be installed in the locations shown on the Tree Protection Plan and to the specification described in this method statement.
3	Pre-commencement meeting.	The project arboriculturalist shall attend a site meeting with the site manager. The local authority arboricultural officer shall be notified so they may also attend. The above pre-start arboricultural works shall be signed off by the project arboriculturalist during the meeting. The meeting shall occur before any plant activity, ground works or construction activities begin.
5	Construction phase.	The tree protection barriers shall be maintained, and the construction exclusion zones observed throughout the construction phase.
6	Installation of new engineered surface within the RPA of T8	Following completion of the main construction phase of development (including hard landscaping works but prior to soft landscaping works), the new engineered surface within the RPA of T8 shall be constructed sensitively as described in this method statement.
7	Soft landscaping phase.	The tree protection barriers shall be dismantled when external construction and hard landscape operations have been completed and plant machinery or excess construction materials have been removed from site. Soft landscape operations shall occur sensitively as described in this method statement.

2.4 Initial tree works: The tree removals listed in the arboricultural impact assessment shall be carried out as the first stage of development. Any requirements for access facilitation pruning which have not been anticipated prior to commencement shall be discussed at the pre-commencement meeting with the project arboriculturalist and agreed with the local authority arboricultural officer.

2.5 Tree stumps and vegetation located within the root protection areas of retained trees shall be cleared with controlled hand tools (e.g. stump grinder/brush cutter). Plant machinery shall not be

used to scrape vegetation or 'grub out' tree stumps within root protection areas, or access the site until the tree protection barriers have been installed.

2.6 If bonfires are lit to dispose of arising's from the vegetation or tree clearance works, an assessment of wind direction and strength shall be made to ensure flames cannot extend within 5m of any part of a retained tree. No bonfires shall be lit within a root protection area.

2.7 Trees should be checked for protected species before works are undertaken. It is against the law to disturb bats or their roosts under the Conservation of Habitat and Species Regulations. Nesting birds are protected by the Wildlife and Countryside Act. If protected species are discovered, Natural England should be contacted for advice.

2.8 The tree works contractors should carry out all tree works to BS3998: 2010 '*Tree works – recommendations*' as modified by research that is more recent. They should also carry relevant, adequate and up to date insurance.

2.9 It is recommended that an Arboricultural Association approved contractor carry out all tree works. Approved contractors are expected to work to industry best standards. The Arboricultural Association website (www.trees.org.uk) contains contact details and information on engaging a suitable contractor.

2.10 **Tree protection barriers:** The root protection areas of retained trees must be left free from disturbance, and protected from contamination or compaction during the proposed works. Protection shall comprise the formation of construction exclusion zones through the installation of tree protection fencing.

2.11 Tree protection fencing shall be installed in the locations shown on the Tree Protection Plan. The specification for tree protection fencing shall be heavy gauge, 2m tall galvanized tube and welded mesh panels, secured to standard scaffold pole uprights and cross-members with wire ties. The uprights shall be driven into the ground until secure (minimum of 0.6m) and supported by scaffold support bars that are clamped to further scaffold uprights (refer to Appendix 2). Any variation from this specification for tree protection fencing shall be discussed with the project arboriculturist and agreed in writing with the local authority arboricultural officer.

2.12 Signs shall be affixed to the tree protection fencing as shown in Appendix 3 to explain its purpose. The signs shall be affixed at a reasonable size and frequency to ensure they are easily visible to operatives at the site.

2.13 The areas protected by tree protection fencing (highlighted yellow on the Tree Protection Plan) shall be referred to as the construction exclusion zones. The following actions shall be prohibited within the construction exclusion zones:

- Vehicular access.
- Regular pedestrian access unless on suitable ground protection following prior agreement with the project arboriculturist.
- Storage of construction materials.
- Storage or handling of harmful chemicals.
- The lighting of bonfires.
- Any change in ground level unless undertaken under the supervision of the project arboriculturist.
- Construction activities including installation of new permanent hard standing unless otherwise stated in the detailed arboricultural method statement.

2.14 The tree protection fencing shall be installed before any plant activity, ground works or construction activities commence at the site. They shall be maintained in situ until the soft landscaping phase of development when all other construction activities in the vicinity have been completed, and excess construction materials and plant machinery have been removed from site. Any damage that occurs to the tree protection barriers during the construction period must be rectified immediately, prior to other construction activities recommencing in the vicinity.

2.15 **Storage and handling of harmful chemicals:** Provision needs to be made to avoid the storage and handling of harmful chemicals in proximity to trees. Harmful chemicals include fuels, oils, builder's sand (which has a high salt content) and cement. Provision shall also be made to avoid fuelling or the handling of cement from occurring in areas proposed for further planting. Cement mixing shall only occur where there is no potential for cement washings to leech into a root protection area. A designated fuelling station for plant machinery shall be selected that is either bunded or has provision to avoid spillages leeching into a construction exclusion zone.

2.16 **Contractor facilities:** A suitable location for site cabins, contractor parking and site facilities for operatives shall be agreed with the project arboriculturist during the pre-commencement meeting if not already specified in a construction management plan. These facilities must be located outside the root protection areas of all retained trees unless on adequate ground protection measures that have been signed off with the project arboriculturist (potentially including existing hard standing). Provision must be taken to prevent exhaust fumes or hot air from generators or kitchen facilities from damaging foliage within the crowns of retained trees.

2.17 **Constructing new hard standing within root protection areas:** Within the root protection area of T8, the new surface shall conform to an above ground, no-dig specification. The detailed specification (including levels) for the new hard standing to be constructed within root protection areas shall be provided by an engineer but must be signed off by the project arboriculturist before implementation to ensure the roots and rooting medium are adequately protected. Design for hard surfacing within root protection areas must adhere to the following basic specification (see also Appendix 4):

- Installation of the new engineered surfaced shall require removal of the tree protection barriers. Subsequently, it shall be installed as the final phase of development immediately prior to the soft landscaping phase. Installation shall be supervised by the project arboriculturist to ensure arboricultural requirements are adhered.
- Within the root protection areas, the hard standing shall be constructed directly onto the existing ground level without soil stripping. The surface vegetation (e.g. grass sward) shall be carefully removed using hand tools but the underlying soil must be fully retained and protected. If necessary, a layer of sharp sand (or other inert granular fill) may be used to fill divots to create a level surface onto which the hard standing can be constructed.
- The hard standing must be constructed onto a three-dimensional cellular confinement system (such as CellWeb TRP or equivalent product signed off by the project arboriculturist) filled with no-fines angular stone. This will provide a permeable base for the surface that will spread loads to reduce compaction of the soil beneath (compacting the rooting medium will have a significant detrimental impact on root function and the health of surrounding trees).
- CellWeb TRP is available from 75mm-200mm depth, depending on the soil conditions and the load it is designed to support. Further guidance should be sought from the geocell manufacturer when specifying the detailed surface design. In some cases, it may be necessary to lay additional sub-base beneath the cellular confinement system, however this must also be permeable and laid onto the existing ground level.
- The cellular confinement system shall be installed directly onto a geotextile membrane (such as a TreeTex® 300). A second membrane shall be installed above the cellular confinement system as well. These membranes will prevent soil, construction debris and other materials

migrating through the cellular confinement system, which would otherwise impact on the porosity of the completed surface. The membranes should also help filter pollutants from vehicles leeching into the rooting medium.

- The wearing course for the new surface must be permeable (loose gravel, resin bound gravel, porous asphalt or permeable block paving) to allow continued moisture ingress and gaseous diffusion with the rooting medium.
- Although a three-dimensional cellular confinement system should not in itself require edge supports, edge restraints may be needed for the wearing course. Standard kerb stones set in concrete haunches that are usually dug into the ground will not be suitable for use within root protection areas due to the likely damage to shallow tree roots. As an alternative, one of the following edging types may be used:
 1. Treated timber, peg and board edging.
 2. Proprietary metal or plastic edging strips.
 3. Railway sleepers affixed to the ground.
 4. Standard concrete kerbs on concrete-filled geocells (this method is only suitable if the concrete-filled geocells are installed above the existing ground level).
 5. Small concrete kerbs set in concrete (above existing ground level) and potentially also pegged into place.

2.18 Prior to construction of the surface, the existing ground vegetation (e.g. grass sward or up to 50mm of leaf litter) shall be removed using controlled hand tools such as a spade or turf cutter. The underlying soil must be fully retained and protected. Plant machinery may not be used to scrape vegetation unless under the supervision of the project arboriculturist and tree stumps should be removed from root protection areas carefully using a stump grinder. If obvious surface tree roots are present or if the soil is known to be shallow, then use of plant machinery will not be appropriate.

2.19 The surface shall be installed by a process of 'rolling out' the cellular confinement system. This means that as one section of the cellular confinement system is installed, it will provide ground protection and create access for plant machinery to allow the next section to be installed (a tracked excavator and dumper truck are usually required to install a cellular confinement system). Vehicular access onto exposed ground within the root protection areas of retained trees shall be prohibited at all times unless adequate temporary ground protection measures are agreed with the project arboriculturist.

2.20 If access is required onto a cellular confinement system before the wearing course installed, a temporary surface (such as thick plywood or metal boards depending on the load needing support) shall be installed above a geotextile membrane to prevent soil and other building debris blocking the airspaces in the cellular confinement system, which could otherwise reduce the porosity of the completed surface.

2.21 When the cellular confinement system has been filled with clean angular stone, this should not be compacted to the point it compacts the underlying soil. Four passes with a smooth roller (max weight 1000kg without vibration) or several passes by a tracked excavator should be sufficient. Checks should be made before laying the wearing course to ensure the infill is fully consolidated.

2.22 The finished level of the no-dig surface will be higher than the surrounding un-surfaced ground. To mitigate this, clean-screened topsoil may be banked around the edge of the surface. It is recommended that no less than a gradient of 1:3 is created as increasing the ground level within a root protection area can disrupt root function. It is also necessary to avoid banking soil around the buttresses or buttress roots of retained trees.

2.23 Installing new permanent fencing within root protection areas: Installation of permanent fences within the above root protection areas (the site boundary fencing and garden fences) will require access into the construction exclusion zones. Only pedestrian access will be permitted into the construction exclusion zones and scaffold board pathways shall be used in wet weather conditions. Ideally these works shall occur during the soft landscaping phase of development when it is safe to dismantle the tree protection fencing.

2.24 The fencing specifications are to be confirmed on the date of this report. Within root protection areas a fencing type that requires only postholes (no trenching) shall be used. The levels of the fences must also consider existing ground levels as there should be no re-grading of levels within root protection areas.

2.25 The postholes shall be hand excavated with care taken to avoid damaging or severing roots with a diameter greater than 25mm (potentially requiring the position of the fence posts to be altered slightly). The postholes shall be sleeved with impermeable sheeting before any concrete is added to prevent alkaline burn to retained roots. Cement mixing shall occur outside the construction exclusion zones.

2.26 Soft landscaping within root protection areas: New soft landscaping within the root protection areas of retained trees shall occur as the final phase of development. The detailed specification for soft landscaping is to be confirmed but will likely include turfing and tree/shrub planting within root protection areas.

2.27 Where new turf is to be laid within the root protection areas of retained trees, topsoil will likely need to be imported. The existing soil may be lightly tilled by hand but use of rotavators will be prohibited. A maximum increase of 150mm of topsoil should be introduced to a root protection area to avoid suffocating root growth. Care must be taken to prevent soil being piled against tree buttresses or buttress roots.

2.28 When soil or other materials are transported across a root protection area, scaffold board pathways must be used to prevent compaction of the rooting medium. It should be noted that even pedestrian traffic can compact the soil, particularly in wet conditions.

2.29 All planting pits within root protection areas shall be individually hand excavated (no trench planting). Care must be taken to avoid severing or damaging roots with a diameter greater than 25mm.

2.30 All planting stock, top soil and other soft landscaping materials shall be stockpiled outside the root protection areas of retained trees. If the tree protection fencing has been dismantled then the extents of the root protection areas shall be made clear to operatives at the site by other means (e.g. ground marker paint or similar). The standard restrictions to works within the construction exclusion zones will still apply.

2.31 Arboricultural supervision: Arboricultural supervision will be required for the following stages of development:

- Prior to commencement of works, the project arboriculturalist shall review and where necessary provide input into the construction management plan and construction logistic plan. The detailed arboricultural method statement and tree protection plan shall take into account the requirements of the construction management plan and construction logistics plan.
- Prior to commencement of works, the project arboriculturist shall review the routing of new services and either confirm there will be no encroachment into root protection areas, or

provide an arboricultural method statement detailing how the services can be installed sensitively. It will be the responsibility of the contractor to provide the details of new services to the arboriculturist.

- Prior to the commencement of works, the project arboriculturist shall review the detailed specification for the above ground, engineered surface within the root protection area of T8 and confirm that it complies with arboricultural requirements.
- A pre-commencement meeting shall be held between the contractors and the project arboriculturist. The local authority arboricultural officer shall be given reasonable notice of the pre-commencement meeting so they may also attend. The purpose of the pre-commencement meeting shall be:
 1. To clarify the tree protection methodology with the site manager.
 2. To sign off that the pre-commencement tree works have been completed as specified in the arboricultural impact assessment, and to agree any requirements for access facilitation pruning which have not been anticipated prior to the meeting.
 3. To sign off that the tree protection barriers have been installed in the correct locations and to the agreed specification.
- The project arboriculturist shall sign off that the prescribed methodology is followed for installing permanent fencing within root protections.
- The project arboriculturist shall supervise and sign off that the prescribed methodology is followed for installing the new engineered surface within the root protection area of T8.

2.32 In addition to the above, a system and programme of onsite monitoring by the appointed arboricultural consultant should be agreed with the Local Authority Arboricultural Officer. The form and frequency of site monitoring shall be agreed at the pre-commencement meeting

2.33 If significant root growth is disturbed during construction activities that are not within the scope of this report, the work shall cease until the project arboriculturalist has been consulted. Roots greater than 25mm in diameter or dense/matted fibrous roots shall be considered significant root growth. It should be remembered that whilst root protection areas are part of industry best practice, tree root growth is influenced by a number of factors and may not conform to expected ideals.

2.34 If at any time during the construction process, damage is inadvertently caused to a tree, the project arboriculturalist shall be notified to assess the likely implications and to prescribe potential remedial measures to be implemented. Damage can be in the form of chemical or fuel spillage, mechanical damage to either the above ground parts of the tree or the roots, fire or any other unforeseen circumstance.

2.35 The supervising arboriculturist shall be appointed by the contractor. It will be necessary for the arboriculturalist to report to the local planning authority on the outcome of the site visits as well as any unforeseen tree related issues.

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Date: 11th November 2020

APPENDIX 1

Tree Protection Plan

Key:

- Root protection area for tree to be retained
- Canopy of tree to be retained
- Tree protection fencing
- Construction exclusion zone
- Engineered, no-dig surface

Appendix 2, (Tree Survey Schedule) contained within the arboricultural impact assessment ref. PJC3887/15-02 contains further information for each tree.

This drawing should be viewed in colour.

Tree Protection Fencing Specification

Example Tree Protection Warning Sign

Drawing no: PJC3847/15/C Rev: 01 Sheet number: 1 of 4

Client and site:
Bilsham Road Development LLP
Land at Bilsham Road
Yarwood
West Sussex

Drawing title: Preliminary Tree Protection Plan

Date drawn: 10/11/2020

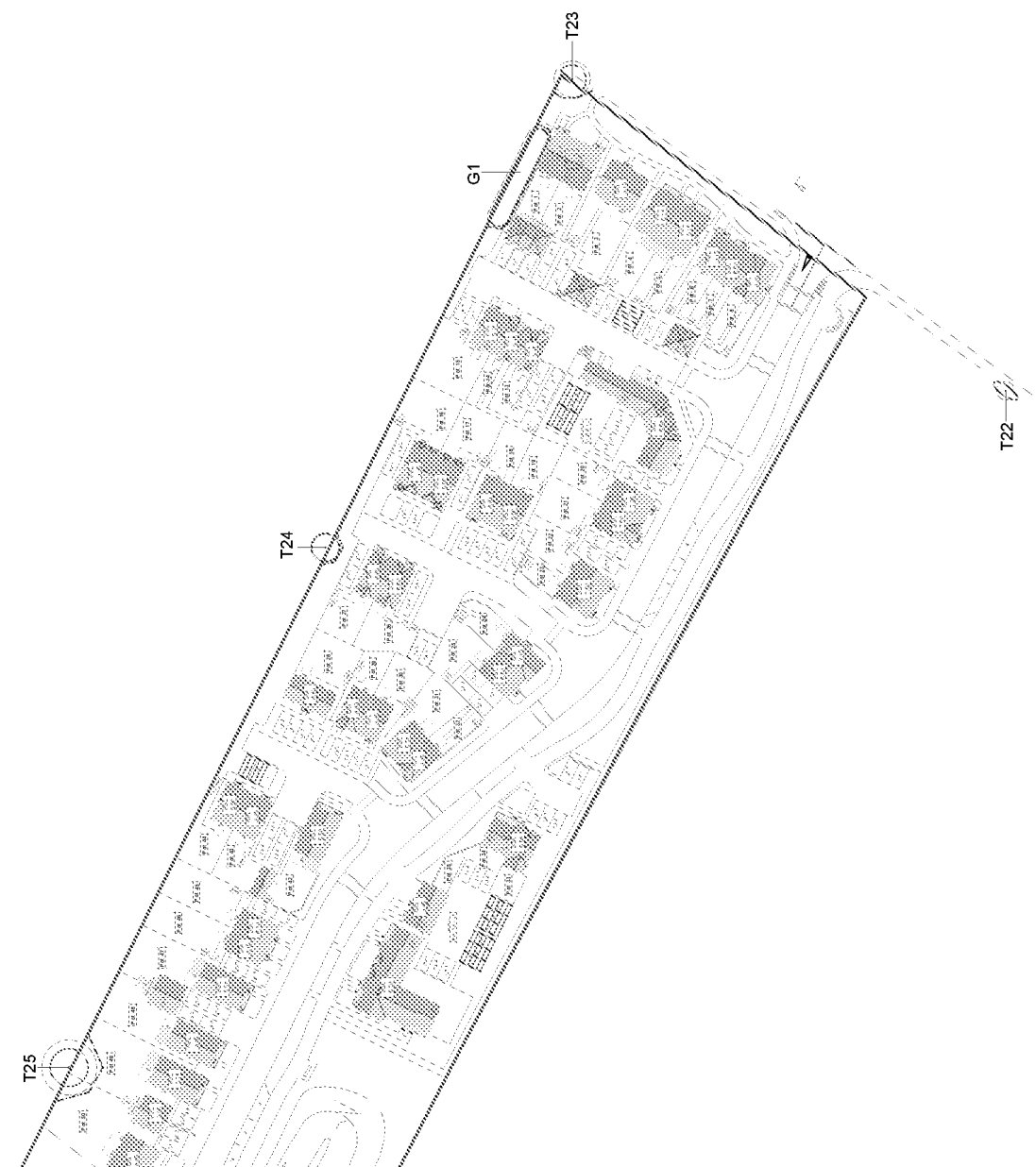
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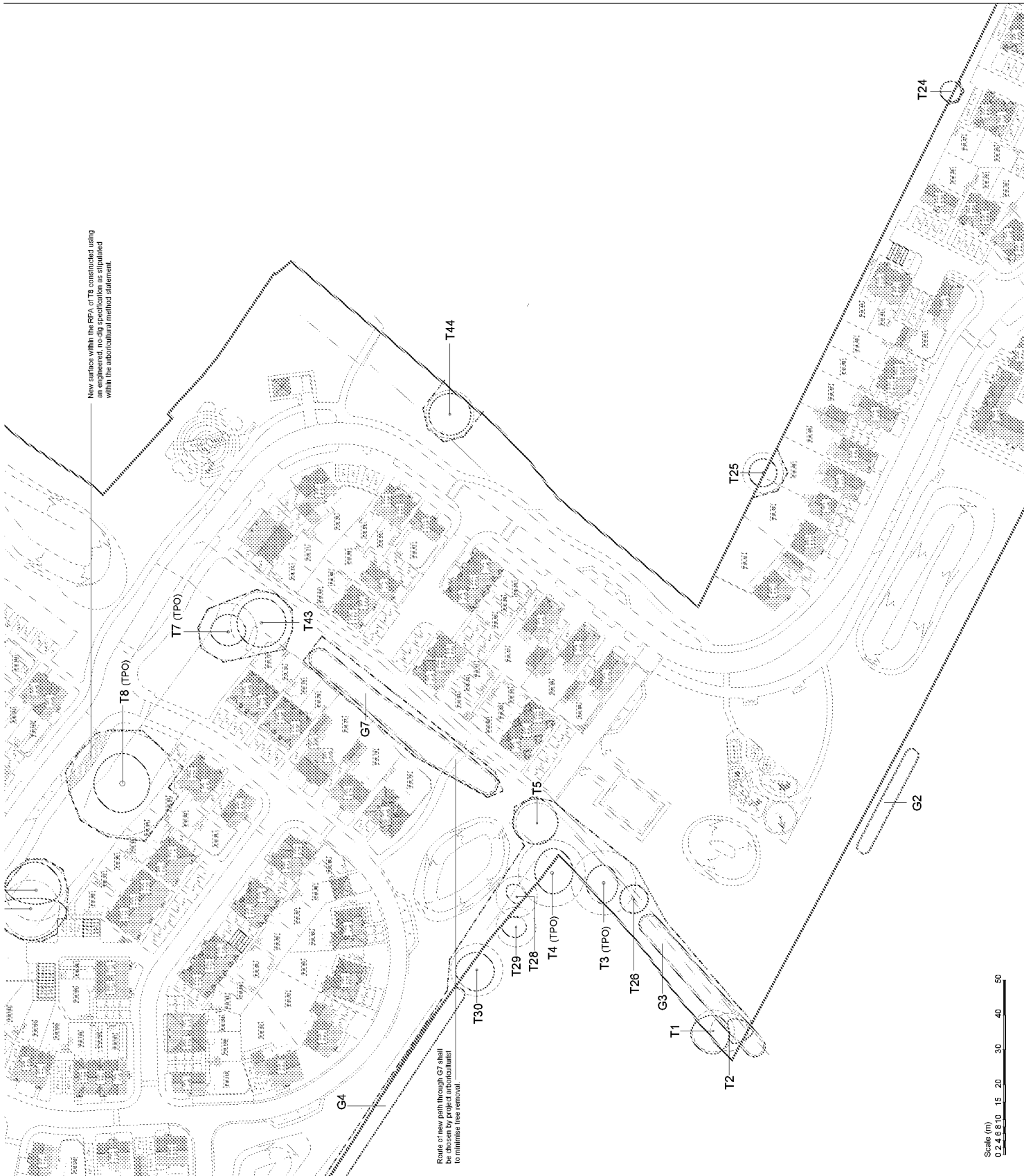
Drawn by: LW

Checked by: NB

PC

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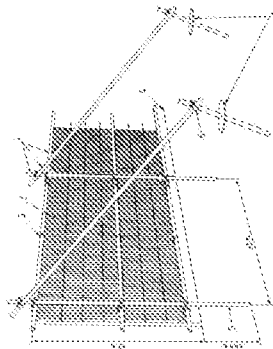
Key:

- Root protection area for tree to be retained
- Canopy of tree to be retained
- Tree protection fencing
- Construction exclusion zone
- Engineered, no-dig surface

Appendix 2 (Tree Survey Schedule) contained within the arboricultural impact assessment ref: PJC3857/15-02 contains further information for each tree.

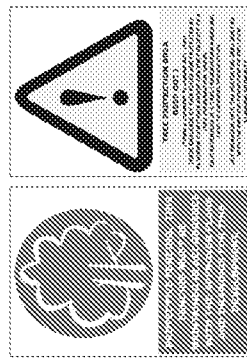
This drawing should be viewed in colour.

Tree Protection Fencing Specification



- See Appendix 2 for details of the following:
1. Tree Protection Fencing
 2. Tree Protection Fencing
 3. Tree Protection Fencing
 4. Tree Protection Fencing
 5. Tree Protection Fencing
 6. Tree Protection Fencing

Example Tree Protection Warning Sign



Drawing no: PJC/3847/15/C Rev: 01 Sheet number: 2 of 4

Client and site:

Bilham Road Development LLP

Land at Bilham Road

Yapton

West Sussex

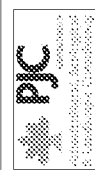
Drawing title: Preliminary Tree Protection Plan

Date drawn: 10/11/2020

Scale: 1:500 at A1

Drawn by: LW

Checked by: NB



ARUN DISTRICT COUNCIL
The Rocks Trail, Upton Road, Havant, Hampshire,
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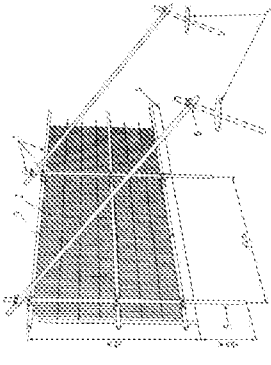
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- Key:
- Root protection area for tree to be retained
 - Canopy of tree to be retained
 - Tree protection fencing
 - Construction exclusion zone
 - Engineered, no-dig surface

Appendix 2, (Tree Survey Schedule) contained within the arboricultural impact assessment ref. PJC387/15-02 contains further information for each tree.

This drawing should be viewed in colour.

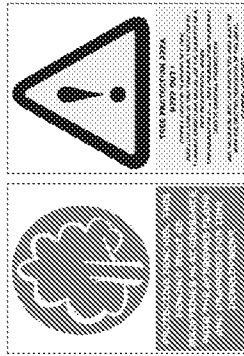
Tree Protection Fencing Specification



Notes:

1. Root protection area for tree to be retained
2. Canopy of tree to be retained
3. Tree protection fencing
4. Construction exclusion zone
5. Engineered, no-dig surface

Example Tree Protection Warning Sign



Drawing no: PJC384/15C Rev: 01 Sheet number: 1 of 4

Client and site:
Bisham Road Development LLP
Land at Bisham Road
West Sussex

Drawing title: Preliminary Tree Protection Plan

Date drawn: 10/11/2020

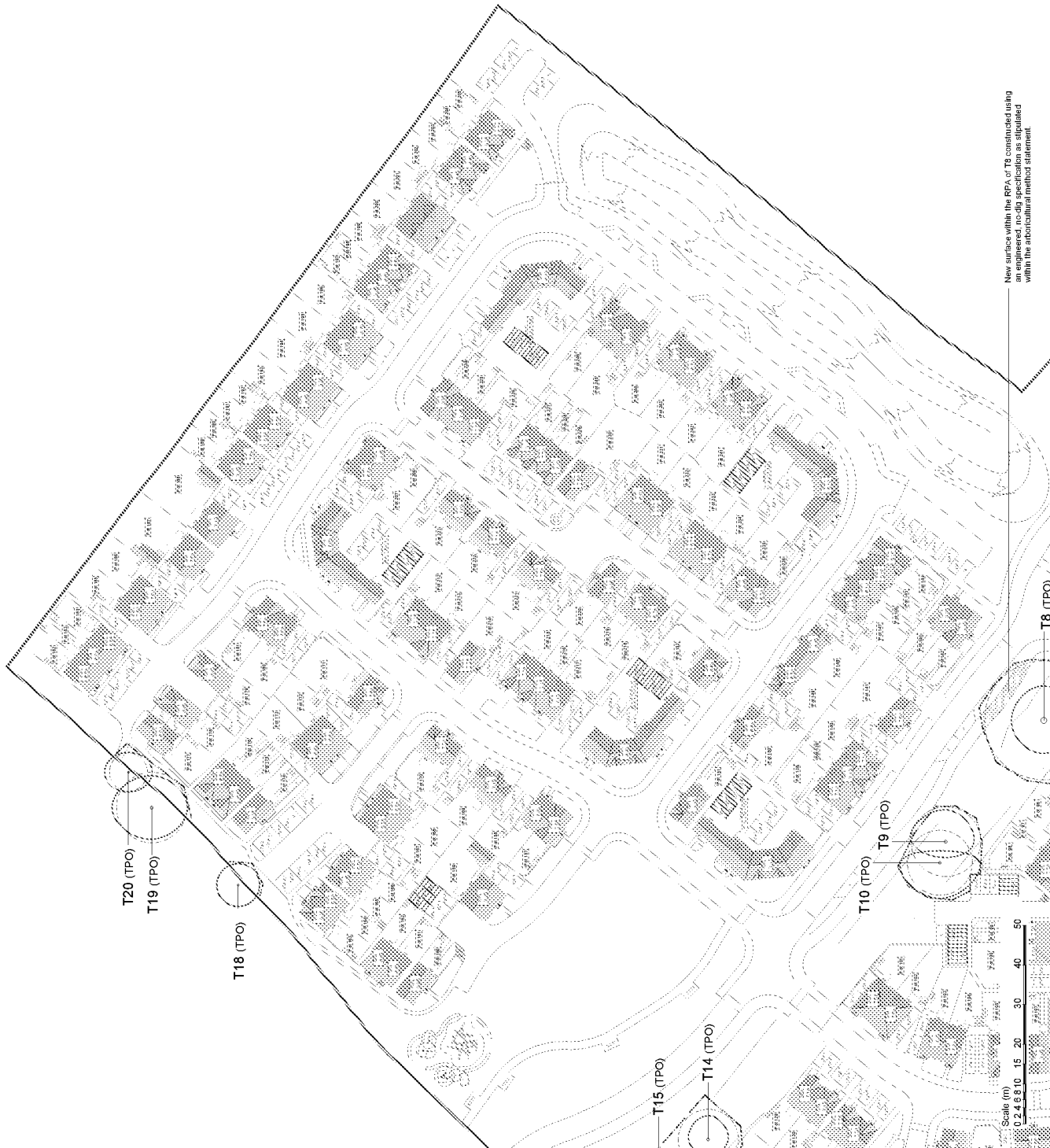
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Drawn by: LW

Checked by: NB



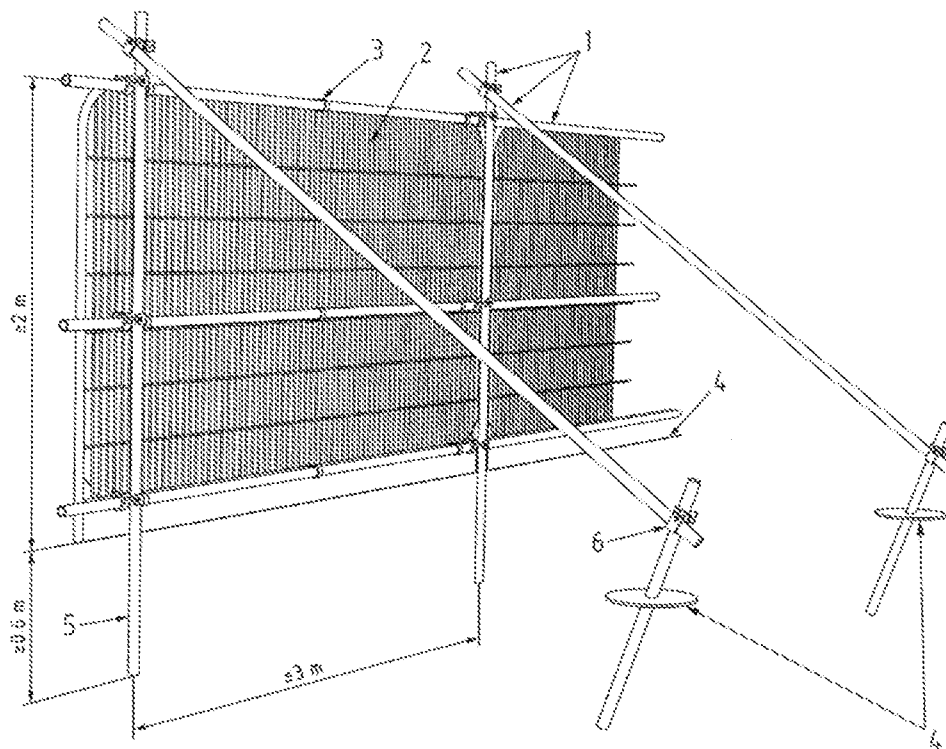
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www.pjc.co.uk



New surface within the BPA of T8 constructed using an engineered no-dig specification as stipulated within the arboricultural method statement.

APPENDIX 2

Example Tree Protection Fencing Specification

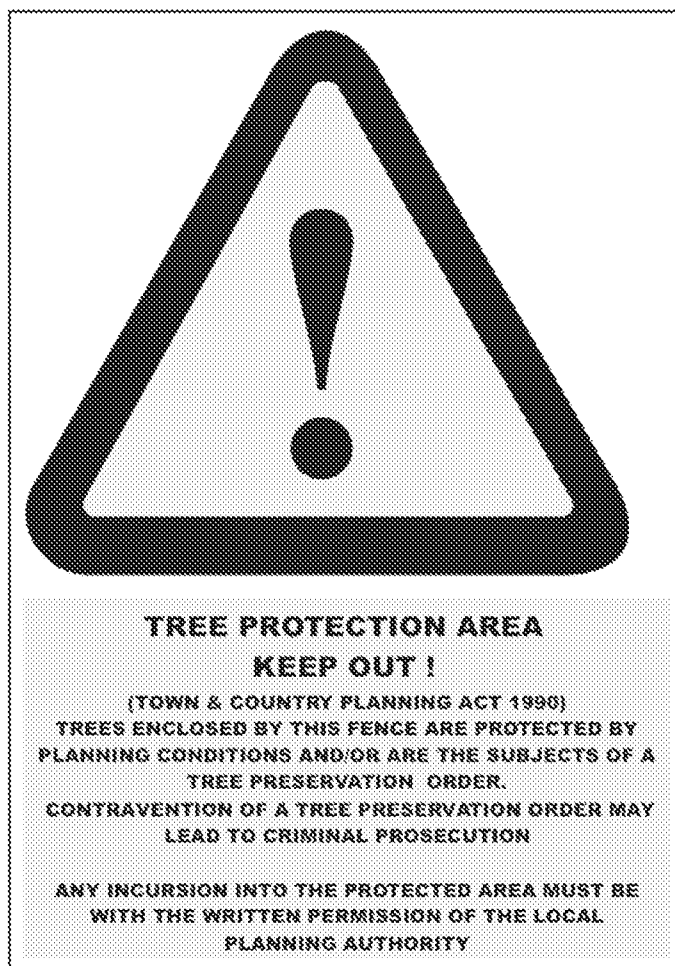


Key

- 1 Standard scaffold poles
- 2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
- 3 Panels secured to uprights and cross-members with wire ties
- 4 Ground level
- 5 Uprights driven into the ground until secure (minimum depth 0.5 m)
- 6 Standard scaffold clamps

APPENDIX 3

Example Protective Fencing Signs



APPENDIX 4

Example No-dig Surface Specification

