



Arboricultural Method Statement

West Hoathly Brickworks, Sharpthorne – BS5837

Report Type:	Hi-Line Reference:	Delivered:
Tree Constraints Plan		
Arboricultural Method Statement	RSKHL_8464.24_AMS	05/03/2025
Planting Scheme & Landscape Proposals <i>(if required)</i>		
Site Monitoring & Watch Briefs		



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Arboricultural Method statement

Prepared by: Mark Read

RSK Hi-Line

For:

RSK Environment Ltd.

SITE ADDRESS (THE SITE):	West Hoathly Brickworks, Hamsey Road, Sharpthorne, East Grinstead, West Sussex, RH19 4PB
LOCAL PLANNING AUTHORITY:	Mid Sussex District Council

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RSKHL_8464.24 – RSK Environment Ltd. – West Hoathly Brickworks - (BS:5837 2012) - AMS.

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1. INSTRUCTION

- 1.1. Hi-Line received written instruction (email) from the client (via Mr Greig Higham of RSK Environment Ltd.) to provide an Arboricultural Method Statement (AMS) to inform and support the development of land at West Hoathly Brickworks, Sharpthorne, East Grinstead.
- 1.2. The framework for this report and the associated plans is the British Standard 'BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*' as this is the standard used by local planning authority officers when considering trees affected by development activities. Comment is also made with regard to the risk presented by the subject trees as it is relevant to any potential adverse impacts on the proposals.

2. REPORT LIMITATIONS

- 2.1. **Reliance** – This Arboricultural Report has been prepared for the Client and may only be relied on by the Client. This Arboricultural Method Statement is based on a survey and associated Arboricultural Implications Report by SJA Trees, dated July 2023. Information contained within this AMS report is dependent on the accuracy of such third party survey and data collection; no liability for inaccuracy can be assumed.
- 2.2. **Period of Reliance** - Unless agreed otherwise by Hi-Line in writing, the information and findings in this Arboricultural Report shall remain valid for a period of twelve months from the date of the relevant survey.
- 2.3. **Third Party works/services** - Hi-Line shall have no liability to the Client (or any third party) for any works, services and/or recommendations set out in this Arboricultural Report to the extent that any such works, services and/or recommendations are carried out or otherwise implemented by a third party not being Hi-Line.
- 2.4. **Limitation of liability** - Subject to any limitations that are not permitted by law, the aggregate liability of Hi-Line under and in relation to this Arboricultural Report in respect of all claims, losses or damages, whether arising from negligence, breach of contract or otherwise shall be limited to the proceeds of insurance that Hi-Line receives from its insurers in respect of the relevant claims, losses or damages.
- 2.5. **Site conditions** – Any physical alterations to the condition of the site after the date of the most recent arboricultural survey will have the potential to invalidate the findings and recommendations in this Arboricultural Method Assessment. To the extent that such physical alterations do take place then the Client should contact Hi-Line.
- 2.6. **Subsidence** – This Arboricultural Report is intended as a guide to identify key tree related constraints to site development only, and the potential influence of trees upon existing or proposed buildings or other structures resulting from the effect of their roots abstracting water from shrinkable load-bearing soils is not considered. Issues of subsidence and heave have not been considered or addressed in this Arboricultural Report and soil samples have not been taken. If the Client does wish for issues of subsidence to be assessed and reported on, then the Client should contact Hi-Line.
- 2.7. **Weather, vandalism and accident** – This Arboricultural Report does not take account, or provide any advice in respect of, extremes of weather/climate, vandalism or accident whether the same are physical, chemical or fire related and Hi-Line accepts no liability in respect of the same. For example, and without limiting the foregoing, snow and/or flood conditions can place unpredictable and therefore unforeseen physical strains on trees and vegetation.
- 2.8. **Adjacent property** - Trees on adjacent property may have been inspected from within the confines of the site (in this case, by third-party surveyors); this inspection may have been limited due to available access and the report will highlight obvious issues only.

3. PLANNING CONSTRAINTS

- 3.1. Excluding specific exceptions (including the granting of full planning permission) it is an offence to carry out any works to a tree that is subject to a Tree Preservation Order (TPO) without having first applied to and obtained the approval of the Local Planning Authority (LPA).
- 3.2. Exceptions exist to the need to apply for permission to undertake works on protected trees or within conservation areas, including the granting of full planning permission. The exception to the need to apply only exists insofar as it is necessary to implement the detailed permission where this might directly and significantly affect retained trees. It is not permitted to fell trees or undertake pruning where trees are not directly affected by the proposed works.
- 3.3. According to the Technical Appraisal report by RSK LDE (RSK Land and Development Engineering), dated March 2024; referencing Report ref. SJA air 22377-01b - Arboricultural Implications Report (2023), the following applies to the subject site:

No trees located on site are covered by a tree preservation order (TPO) and the site is not within a conservation area, in this respect there are no constraints relating to existing trees. There are no hedgerows on site that would meet the criteria to be deemed "Important" in the context of the landscape and wildlife criteria of the Hedgerows Regulations, 1997. In addition, there are no trees within or abutting the site that can be classified as 'Ancient' or 'Veteran.'

4. STATUTORY WILDLIFE CONSIDERATIONS

- 4.1. Although preliminary visual checks from ground-level of likely wildlife habitats are made at the time of survey, detailed ecological assessments of wildlife habitats are not made by the arboriculturist and fall outside the remit of this report.
- 4.2. The Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000) provides statutory protection to birds, bats and other species that inhabit trees. All tree work operations are covered by these provisions and advice from an ecologist must be obtained by the tree owner or person responsible, before undertaking any works that might constitute an offence.

5. SITE DETAILS

- 5.1 The 16.35ha site is located on the northern edge of Sharpthorne village, east of the Bluebell Railway line. The western boundary is defined by the railway line and the rear

gardens of houses on Hamsey Road, which provides access to the site. The southern boundary is woodland, beyond which lies more of Sharpthorne's residential area. Open land borders the site to the north and east. The western half of the site is the former brickworks, characterized by hardstanding, open storage, and various buildings including offices, manufacturing, and storage sheds. The eastern half is the former quarry, now filled in and featuring a pond and significant tree cover. The brickworks area is relatively level, except for steep banks along the north and west edges. The former quarry area has more undulating terrain due to earthmoving.

Arboricultural Overview

- 5.2 According to the survey data and information collated by SJA Trees, on which this report is based, the survey area comprises 62 individual trees, 29 tree groups, a hedge, and an area of woodland, all within or bordering the subject site. The trees are primarily native broadleaved species, largely young and semi-mature, often self-seeded. They grow in scattered groups within the brickworks area and in belts along the site's edges. Common species include goat willow, silver birch, and alder, reflecting the site's past industrial use and apparent high water table.
- 5.3 The eastern half of the site, the former quarry, has the most extensive tree cover. While young and semi-mature trees in groups are prevalent here as well, there are also more established and mature trees, notably English oak and ash. These more mature areas, including ancient woodland, two areas of secondary woodland, and the tree belt along the northern boundary, contrast with the generally more "scrubby" character of the trees elsewhere on the site. Though native broadleaved trees dominate, some non-native species, such as red oak and cypress, are present. The cypress trees were planted in rows along the north, west, and south boundaries, likely for screening purposes. In general, the trees on the site are consistent in character and quality with the trees in the surrounding landscape.

6. THE PROPOSAL

- 6.1 The proposed site development works include the demolition of existing structures and redevelopment of the site to provide 108 residential dwellings (Class C3) and associated works, including the provision of an on-site SANG (Suitable Alternative Natural Greenspace), access roads and footpaths, landscaping, parking and associated works at West Hoathly Brickworks, Sharpthorne, West Sussex. The proposed works will fall within the vicinity of trees throughout the site (retained trees concentrated around the site boundary, predominantly), however provisions have been made at the design phase to incorporate and work around existing trees, as well as adding to the existing

soft landscape, such that the natural landscape will, upon completion of the project, be enhanced overall.



Insert: Redline site boundary and existing site layout, as per plan 1000 by Omega Architects, March 2003.



Insert: Redline site boundary and proposed site layout, as per plan 1005 by Omega Architects, March 2003.

7. FINALISED TREE PROTECTION PLAN:

7.1. A Tree Protection Plan has been produced to accompany this report, as appended.

8. ARBORICULTURAL METHOD STATEMENT:

8.1. This Arboricultural Method Statement (AMS) has been prepared on the assumption that the scheme will proceed as per the plans and instructions provided, and that the arboricultural and site survey data, as collected by third-parties, is accurate at the time of writing. The AMS should be discussed in detail prior to the commencement of works on site. Any amendments deemed necessary as a result of construction drawings/standards/specification, or any other modifications, should be made prior to the commencement of any works on site. The table below lists the outline phasing covered by the AMS.

Action	Input	Timing	Supervision or monitoring
Pre-commencement meeting; tree work (where necessary) and setting out root protection areas/TPF	PAC / PC	Prior to the commencement of any works	Y
Demolition of existing buildings (following tree removals)	PC	Site Preparation	N
Construction phase – excavations within the RPA of retained trees	PAC / PC	Construction	Y
Construction phase – post-excavation laying of new surfaces within the RPA of retained trees	PC	Construction	N
Construction phase – laying of above-ground footpaths within RPAs of trees	PAC / PC	Construction	Y
Construction phase – construction of development following completion of works within RPA of trees	PC	Construction	N

PAC = Project Arboricultural Consultant, PC = Principal Contractor, E = Engineer, A = Architect

8.2. It is the responsibility of the appointed principal contractor (PC) to ensure the tree protection measures within this document are implemented and followed for the duration of the project.

8.3. Should there for any reason be a requirement to deviate from the specifications within, advice must be sought from the Project Arboricultural Consultant (PAC).

8.4. The AMS and tree protection plan (TPP) must be made available to all site staff, including subcontractors, who must also be briefed as to the tree protection requirements and necessary working methods.

8.5. Prior to the commencement of any works in proximity to the subject trees, there is to be a site meeting attended by the PC, client and PAC. The purpose of the meeting is to ensure that all parties are conversant with the TPP and AMS.

9. TIMING OF OPERATIONS

- 9.1. Ground/soil compaction is a foreseeable concern in the case of all trees in proximity to the works and as such, the operations should be undertaken in dry weather (if possible) when the ground is driest and least prone to damaging compaction. Ideally this should be between May and October, although due to other logistical demands this may not be possible. Ground protection will be utilised in order to mitigate the risk of soil compaction and root damage.
- 9.2. Tree work and general vegetation clearance should be completed outside of bird nesting season, where possible; generally between March and August (Natural England advice). The nesting period may however start before this and extend beyond it, in some cases. Ecological watch briefs/nest checks prior to commencement may be required in this instance.

10. PRE-COMMENCEMENT TREE WORKS

- 10.1. All relevant Arboricultural plans and reports are to be reviewed and signed off by the PC and PAC. Any amendments to be made and a copy of all revised documents are to be sent to the local planning authority where necessary. A signed-off copy is to be held on file in the site office for the duration of construction works. Pre-commencement tree works, including tree removals as identified, must be completed prior to commencement of any demolition and construction activities.
- 10.2. Table of required pre-commencement tree work.

Tree/Group reference	Required works
T3 – T9, T19, T28, T29, T31, T50 – T53, T60, T61, T62, T63.	Trees to be removed
G1, G2, G5, G6, G8, G9 (partial removal), G11, G14, G16 (partial removal), G17, G18, G19, G20 (partial removal), G21, G22, G23	Tree groups to be removed

Note: No pre-commencement tree pruning works have been deemed necessary.

11. CONSTRUCTION EXCLUSION AND PRECAUTIONARY ZONES

- 11.1. Areas encapsulated by protective fencing or designated on site within areas of protected ground/existing hard surfacing are collectively considered the construction exclusion zone (CEZ). The CEZ comprises retained trees' root protection areas (RPA).

The RPA are merged where necessary. The accompanying plans (RSKHL_8464.24_TPP) detail the extent of the CEZ.

- 11.2. RPA/CEZ have been designated for trees and tree groups as detailed within the TPP due to the trees' proximity to the works and/or extent of the RPAs. Access and works will be necessary in the vicinity of trees around the perimeter of the site (predominantly), however ground protection, above-ground footpath construction methodologies and tree protection fencing (TPP) will ensure activities do not adversely impact tree health or condition. On-site arboricultural supervision has been advised where works within the trees' RPAs is unavoidable/planned in order to ensure retention of significant tree roots and/or management thereof.

The relevant guidance as it pertains to temporary measures for ground protection and plant machinery on soft surfaces (from page 22, Section 7 of BS5837:2012), is as follows:

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

- 11.3. Please note the following operations and actions are known to cause harm to trees and their rooting environments:

- soil level changes, excavation or fill
- traffic and/or parking of vehicles and plant
- mixing of cement and associated run off
- storage of materials (to include topsoil)
- fires
- trenching for underground services
- installation of hard surfaces
- use of high sided vehicles, cranes and lifting equipment.

- 11.4. Should an occasion arise where operations are required within the CEZ or Precautionary Zone (PZ) which will potentially expose soils beneath to loads in excess of the design loads, advice must be sought from the PAC/project engineer. It may be necessary to use additional materials or methods aimed at reducing loading, thus mitigating for adverse impacts on significant, retained trees. Written permission from

the LPA may be required in order to undertake any additional works within the CEZ or PZ.

- 11.5. The construction measures within the CEZ and PZ will be controlled by this Arboricultural Method Statement and following details supplied to, and approved by the Local Planning Authority.

12. MONITORING OF OPERATIONS

- 12.1. Due to the nature of the operations, monitoring to ensure the recommendations within this method statement are adhered to, is advised, where stipulated. Site visits (watch briefs) at specified stages of development should be undertaken in accordance with the following:

- Pre-commencement meeting to set out tree protection measures (where applicable) including a toolbox talk to brief the site team on precautions set out in this method statement.
- PAC to remain in contact to advise site team on the phone/by email as required.
- PAC to complete site inspection record at each monitoring site visit – copy to be forwarded to the site management and Local Authority tree officer for reference where necessary.
- Any recommendations are to be followed up on the subsequent site visit to ensure these are being adhered to.

13. TREE PROTECTION FENCING (TPF)

- 13.1. Tree protection fencing in the form of 3500mm weldmesh panels is deemed to be appropriate in order to clearly mark and separate the areas of work from the trees to be protected. Fencing should be installed such that the outer-edge of the RPA of retained trees/groups is protected, or where space is limited, to ensure as much of the RPA as possible is protected. Where space for the use of TPF is unavailable, e.g. for the construction of SANG footpaths within the RPA of retained trees, above-ground or otherwise, supervision by the PAC is advised. The location of TPF with regard to specific trees/groups is referenced within the Tree Protection Plan that accompanies this AMS.
- 13.2. It is important to note that, at several locations throughout the perimeter of the site (as detailed within the TPP), TPF will be assigned two positions relating to the timing of two stages of works; site demolition and construction activities, and construction of footpaths within trees' RPAs. Please see section 14.2.

- 13.3. To protect the Root Protection Areas (RPAs) of trees located outside the construction zone boundary, protective fencing compliant with BS5837:2012, as outlined in Appendix A, will be erected prior to the commencement of demolition or construction activities. This measure will prevent encroachment by plant machinery, material storage and mixing, and other construction-related activities that could negatively impact tree root systems. Specifically, along the eastern boundary of the proposed residential development, this protective fencing will be aligned with the designated Suitable Alternative Natural Greenspace (SANG) boundary.
- 13.4. Following the completion of the residential development's construction phase, specific sections of the aforementioned protective fencing will be moved to facilitate the planned SANG works. These works include the installation of the SANG fence, footpaths, and other proposed features. The arboricultural consultant must be notified in advance of any planned fence removal or relocation. This notification will allow the consultant to be present on-site, where necessary, to verify that appropriate fencing, suitable for the continued protection of trees during the SANG construction phase, remains in place.

14. TEMPORARY REPOSITIONING OF TREE PROTECTION FENCING

- 14.1. Temporary repositioning of TPF may only be undertaken where adequate ground protection is in place, such that soil compaction is avoided, and/or where arboricultural supervision is employed, or where footpath construction within trees' RPAs is proposed (see below, the TPP and Section 22 of this report). No machinery or vehicles are to be used within the RPA or CEZ where appropriate ground protection is not in place or where planned exemptions apply. If TPF is to be temporarily moved, i.e. to allow pedestrian access and to construct the proposed footpaths, TPF must be replaced immediately upon completion of the necessary activity at each specific location.
- 14.2. When demolition and construction activities are ongoing, tree protection fencing must remain in such a location as the RPAs of retained trees are fully protected. This guidance applies primarily to trees along the north east and northwestern aspects of the site perimeter (see Section 22). At the stage of development where footpath construction within trees' RPAs is necessary, TPF should be relocated to allow such construction activities to take place whilst ensuring protection of trees' RPAs is maintained to the maximum area possible. Upon completion of footpath construction (above and below ground, as stipulated), TPF must be replaced to its original positioning, i.e. to protect the full RPA of retained trees, as a minimum area. The above detail as it relates to individual trees and groups, is detailed within the TPP and the table in Section 22 of this report.

15. RELOCATION OF EXISTING UNDERGROUND SERVICES

- 15.1. Information on the installation, modification or relocation of any proposed underground services within the RPA of retained trees as part of this project, remains unconfirmed at the time of writing.

16. CONSTRUCTION OF NEW SURFACES WITHIN THE RPA

- 16.1. To protect retained trees during hard surface and footpath construction within Root Protection Areas (RPAs), a 'no-dig' method is advised, where stipulated, e.g. a cellular confinement system (detailed within Appendix D) or other above-ground methodology such as shuttered mulch/gravel above-ground footpaths.
- 16.2. Any proposed hard surfaces (or pedestrianised routes such as designated footpaths) located within the Root Protection Areas (RPAs) of retained trees must adhere to the guidelines outlined in Section 7.4 of *British Standard 5837:2012, "Trees in relation to design, demolition and construction – Recommendations."* Specifically, the installation process should involve the following measures to protect tree roots:

Any existing turf layer will be carefully removed by hand. Beyond this, the new surface will be constructed either at or above the existing soil level, or, if replacing an existing surface, will not extend deeper than the base of that existing surface. This approach ensures that the underlying soil remains undisturbed and no roots are severed. To further minimise soil compaction within the root zone, a suitable ground covering, potentially consisting of a 'Geogrid', a 'Geoweb', or a combination of both, will be placed beneath the sub-base layer. Finally, any required edge supports for the hard surface will also be installed at or above the existing soil level. Such edging may also be utilised to contain an above-ground mulch/bark or gravel footpath. A cellular confinement system (as detailed within Appendix D) may also be used, particularly in areas where frequent pedestrian and/or light vehicle traffic is expected. Please refer to the table at Section 21 of this AMS, Appendix D, and the accompanying TPP for trees to which a no-dig approach is advised.

- 16.3. Footpath construction will be located primarily around the perimeter of the site and comprise a combination of above-ground cellular confinement system (CCS) and Hoggin types. The SANG footpaths are to comprise trodden earth with bark chippings, installed above the existing soil level and aligned within existing tracks where applicable. Where necessary, parts of the footpath may require the installation of a boardwalk, i.e., in areas of persistently waterlogged ground. A hoggin footpath construction

(methodology detailed within Appendix D) is proposed for the proposed residential footpath within the northern extent of the 15m buffer of Grinstead Wood, outside the RPA of nearby trees. Footpath construction within the RPAs of retained trees, e.g. above-ground methodologies, are detailed with respect to affected trees, within the TPP and the table in Section 22 of this AMS.

Proposed footpath types and associated RPA incursion:

Tree no.	Species	Incursion	Extent of incursion	% of RPA
11	English oak	Proposed site perimeter footpath	17.3m ²	15.6%
12	Ash	Proposed site perimeter footpath	10.6m ²	15.7%
14	English oak	Proposed SANG footpath	44.2m ²	21.1%
32	Goat willow	Proposed site perimeter footpath	7m ²	9.7%
35	Crab apple	Proposed site perimeter footpath	11.5m ²	16%
36	Ash	Proposed site perimeter footpath	17.3m ²	14.7%
38	English oak	Proposed site perimeter & SANG footpaths	33.6m ²	13%
39	Ash	Proposed site perimeter & SANG footpaths	21.4m ²	15.6%
40	English oak	Proposed SANG footpath	48.1m ²	13.9%
41	English oak	Proposed SANG footpath	25.3m ²	13.4%
42	English oak	Proposed site perimeter footpath	17.1m ²	9.5%
44	English oak	Proposed site perimeter footpath	1.9m ²	4.6%
45	English oak	Proposed site perimeter footpath	4.4m ²	4.2%
46	English oak	Proposed site perimeter footpath	2.4m ²	2.8%
64	English oak	Proposed SANG footpath	14.4m ²	13.8%
65	English oak	Proposed SANG footpath	18.6m ²	11.4%
66	English oak	Proposed SANG footpath	7.2m ²	3.5%
67	English oak	Proposed SANG footpath	14.6m ²	5.1%

Insert: Table from AIA report by SJA, 2023.

17. ROOT PRUNING

- 17.1. Due to the proximity of trees to proposed works, namely the construction of new access roads and footpaths around the site perimeter trees/groups, it is likely that tree roots will be encountered. Excavations for the purpose of footpath construction will however be minimised due to manual excavation (including the use of compressed air, spade/pick) and the proposed above-ground footpath construction methodologies recommended where within the RPA of significant retained trees. If surface roots (>25mm diameter) are encountered in areas not currently identified for above-ground footpath installation, such methods may be used to bridge large tree roots. As the RPAs of retained trees shall be protected via tree protection fencing and/or by the highlighted

arboriculturally-sensitive construction methodologies, the necessity for root pruning is expected to be minimal.

17.1.1. Where the pruning of tree roots is unavoidable, a methodology for root pruning is included below (note; root pruning, where necessary, will be undertaken by the supervising arborist during works in close proximity to trees, as detailed within Appendix A):

1. Pruning of exposed roots to take place using sterilised tools only - bypass secateurs or pruning saw.
2. Pruning of all fibrous roots and woody roots <25mm may proceed without expert arboriculturist consultation (NB: any fibrous roots will likely be severed by hand-held tools regardless of degree of caution used) using a clean cut 50mm **outside** the edge of the excavation.
3. Pruning of roots >25mm diameter only permitted following consultation with the PAC and then using a clean cut 50mm **outside** the edge of the excavation.
4. Clumps of fibrous roots must be treated with the same precautions as large diameter roots – where the collective mass of roots exceeds 25mm diameter, retention is desirable and consultation with the PAC will be required should the need arise to prune these.
5. Roots which have been pruned shall not be left uncovered – soil from site shall be used to re-cover exposed roots to prevent drying.
6. Retained roots which need to be left uncovered must be kept moist by use of hessian sacking, wrapped double around roots and kept moist during working hours – this includes large diameter individual roots and larger clumps of fibrous roots.

17.2. In the unlikely event that significant tree roots will be encountered, a photographic record and plan detailing the location of such roots which have been pruned, should be kept. A monitoring plan which records the condition of the subject tree(s) is also recommended where large diameter roots have been removed; 12-month intervals are suitable, with a photographic record included.

17.3. The accompanying Tree Protection Plan contains additional advice and should also be referred to.

18. CONTRACTORS PARKING

18.1. Parking will be predominantly within the site (outside the CEZ). Details relating to a dedicated compound car parking area have not been confirmed at the time of writing. No special measures are required in relation to trees on or around the site (beyond TPF as detailed within this report and the accompanying TPP).

19. SITE HUTS/OFFICES AND TOILETS

- 19.1. There is sufficient space within the site to accommodate such facilities, outside the zone of influence for retained trees.

20. STORAGE OF MATERIALS, TOOLS AND MACHINERY

- 20.1. There is sufficient space within the site to accommodate storage space and any materials, tools or machinery. At no time will the CEZ (or RPA) of any tree be used to store materials, tools, machinery or waste materials.

21. ADDITIONAL PRECAUTIONS

- 21.1. Materials which may contaminate the soil must not be discharged within 10m of any tree stem. When undertaking the mixing of any materials, it is essential that any slope of the ground does not allow contaminants to run towards a tree root area. For the purposes of this project, no additional detail has been provided regarding potentially harmful materials, as the use of such materials is not expected to be necessary.
- 21.2. No notice boards, cables or other services will be attached to any tree.
- 21.3. No herbicide use is required on this site.

22. TREE PROTECTION RECOMMENDATIONS

Please refer to the following table for specific tree/group protection recommendations, in conjunction with the Tree Protection Plan (TPP) which accompanies this report:

Ref. (Bold type indicates TPO) Tree (T) Group (G)	Arboricultural Constraints	Protection Recommendations
Northwestern to Northeastern boundary line (inclusive): T33 – T67 Western boundary line: T10 – T25, T24 – T20 Southern boundary line: T2, G16 – G20 Eastern site boundary: G20 to adjoin T39 on the northern boundary line (via the western aspect of G14 following removal).	Trees in close proximity to works (general/various) on the perimeter of the construction zone and site boundary.	Tree protection fencing to be erected, located at the outermost edge of the respective tree/tree group’s RPA, as a minimum distance, as shown on the accompanying TPP. T35 – T39 (NW) & T42 – T46 (SE): TPF to be relocated to allow construction of footpaths within RPAs where identified, and must remain in place until footpath completion, at which point TPF must be relocated to its previous position such that the trees’ full RPAs remain protected.
T11, T12, T14, T35, T36, T38, T39, T40, T41, T42, T44, T45, T46, T64-T67.	Footpath construction within RPA of trees/tree groups	Employment of above-ground / no-dig footpath construction methodology (e.g. CCS, as detailed within Appendix D).
T32	Necessary excavation works within RPA relating to footpath construction.	Manual digging along the footpath footprint edge at closest point to the tree’s stem, such that roots may be severed by hand tools and avoid tearing/damage by mechanical excavator. TPF to protect full RPA until footpath construction commences. TPF to protect remaining RPA whilst footpath construction ongoing.

Root Protection Areas (RPAs) of all potentially affected trees on site:

<i>Tree No.</i>	<i>Species</i>	<i>RPA</i>	<i>RPA Radius</i>
1	European lime	162.9m ²	7.2m
2	Leyland cypress	113.1m ²	6.0m
3	Purple plum	6.5m ²	1.4m
4	Leyland cypress	35.5m ²	3.4m
5-6	Ash and Goat willow	22.9m ²	2.7m
		15.5m ²	2.2m
7	Goat willow	36.3m ²	3.4m
8	Goat willow	65.6m ²	4.6m
9	Goat willow	110.8m ²	5.9m
10	Goat willow	49.0m ²	3.9m
11	English oak	110.8m ²	5.9m
12	Ash	67.4m ²	4.6m
13	Ash	136.8m ²	6.6m
14	English oak	209.2m ²	8.2m
15	Alder	65.3m ²	4.6m
16	Ash	202.5m ²	8.0m
17	Ash	76.0m ²	4.9m
18	Ash	73.4m ²	4.8m
19	Alder	78.4m ²	5.0m
20	Ash	72.4m ²	4.8m
21	Ash	238.9m ²	8.7m
22	Ash	135.4m ²	6.6m
23	Red oak	46.3m ²	3.8m
24	Red oak	22.9m ²	2.7m
25	Goat willow	110.8m ²	5.9m
26	Goat willow	40.7m ²	3.6m
27	Ash	104.7m ²	5.8m
28	Ash	79.8m ²	5.0m
29	Ash	63.7m ²	4.5m
30	Ash	72.4m ²	4.8m
31	Ash	64.8m ²	4.5m
32	Goat willow	72.4m ²	4.8m
33	English oak	136.8m ²	6.6m
34	Ash	136.8m ²	6.6m
35	Crab apple	72.4m ²	4.8m
36	Ash	117.3m ²	6.1m
37	Ash	54.3m ²	4.2m
38	English oak	257.9m ²	9.1m
39	Ash	136.8m ²	6.6m
40	English oak	346.4m ²	10.5m
41	English oak	188.2m ²	7.7m
42	English oak	179.6m ²	7.6m
43	English oak	35.5m ²	3.4m
44	English oak	42.1m ²	3.7m

Continued overleaf.

45	English oak	104.2m ²	5.8m
46	English oak	87.2m ²	5.3m
47	English oak	50.8m ²	4.0m
48	English oak	53.8m ²	4.1m
49	English oak	179.6m ²	7.6m
50	Sycamore	46.3m ²	3.8m
51	Alder	63.6m ²	4.5m
52	Goat willow	43.8m ²	3.7m
53	Goat willow	36.2m ²	3.4m
54	Ash	202.5m ²	8.0m
60-61	Alder	38.0m ²	3.5m
		18.1m ²	2.4m
62	Ash	65.3m ²	4.6m
63	Alder	40.7m ²	3.6m
64-66	English oak	104.2m ²	5.8m
		162.9m ²	7.2m
		206.1m ²	8.1m
67	English oak	282.3m ²	9.5m
G1	Leyland cypress	33.0m ²	3.2m
G2	Various	2.5m ²	0.9m
G3	Various	18.1m ²	2.4m
G4	Leyland cypress	18.1m ²	2.4m
G5	Various	16.3m ²	2.3m
G6	Leyland cypress	40.7m ²	3.6m
G7	Various	55.4m ²	4.2m
G8	Leyland cypress	127.1m ²	6.4m
G9	Various	65.3m ²	4.6m
G10	Goat willow	28.3m ²	3.0m
G11	Various	4.5m ²	1.2m
G12	Various	289.5m ²	9.6m
G13	Various	72.4m ²	4.8m
G14	Various	4.5m ²	1.2m
G15	Various	221.7m ²	8.4m
G16	Various	91.6m ²	5.4m
G17	Various	2.9m ²	1.0m
G18	Alder	18.1m ²	2.4m
G19	Leyland cypress	99.9m ²	5.6m
G20	Various	26.1m ²	2.9m
G21	Various	20.0m ²	2.5m
G22	Various	40.7m ²	3.6m
G23	Various	5.5m ²	1.3m
G24	Various	18.1m ²	2.4m
G25	Various	136.8m ²	6.6m
G26	Various	10.2m ²	1.8m
G27	Various	18.1m ²	2.4m
G28	Various	191.1m ²	7.8m
G29	Various	40.7m ²	3.6m
H1	Various	2.5m ²	0.9m
W1	Various	83.6m ²	5.2m

Insert: RPA table from the Arboricultural Implications Report by SJA Trees, 2023.

APPENDIX A – TREE PROTECTION BARRIERS

Figure AD.1: Extract from BS5837:2012 Default specification for protection barrier.

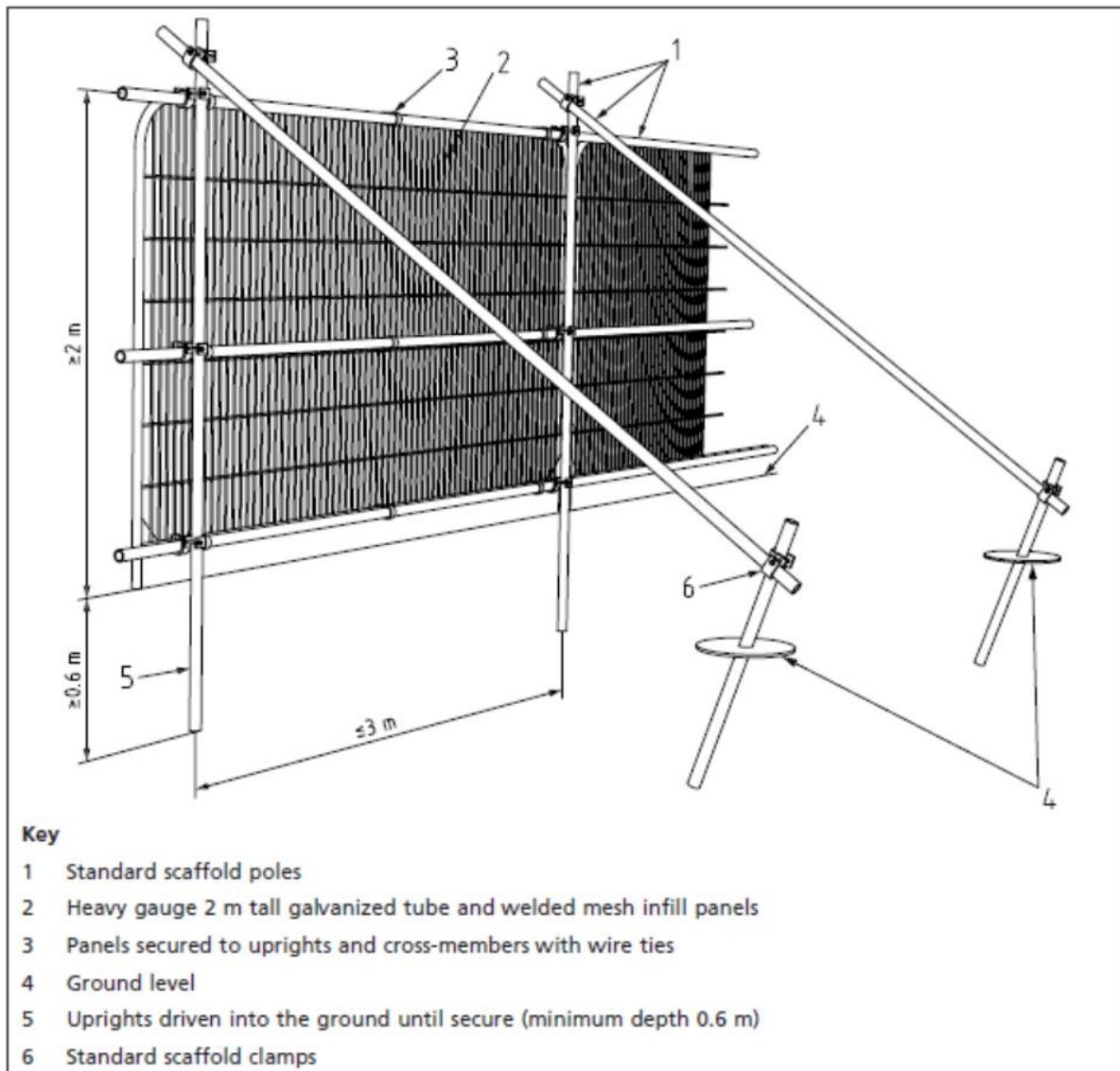


Figure AD.2: Extract from BS5837:2012 Examples of Ground Stabilising systems

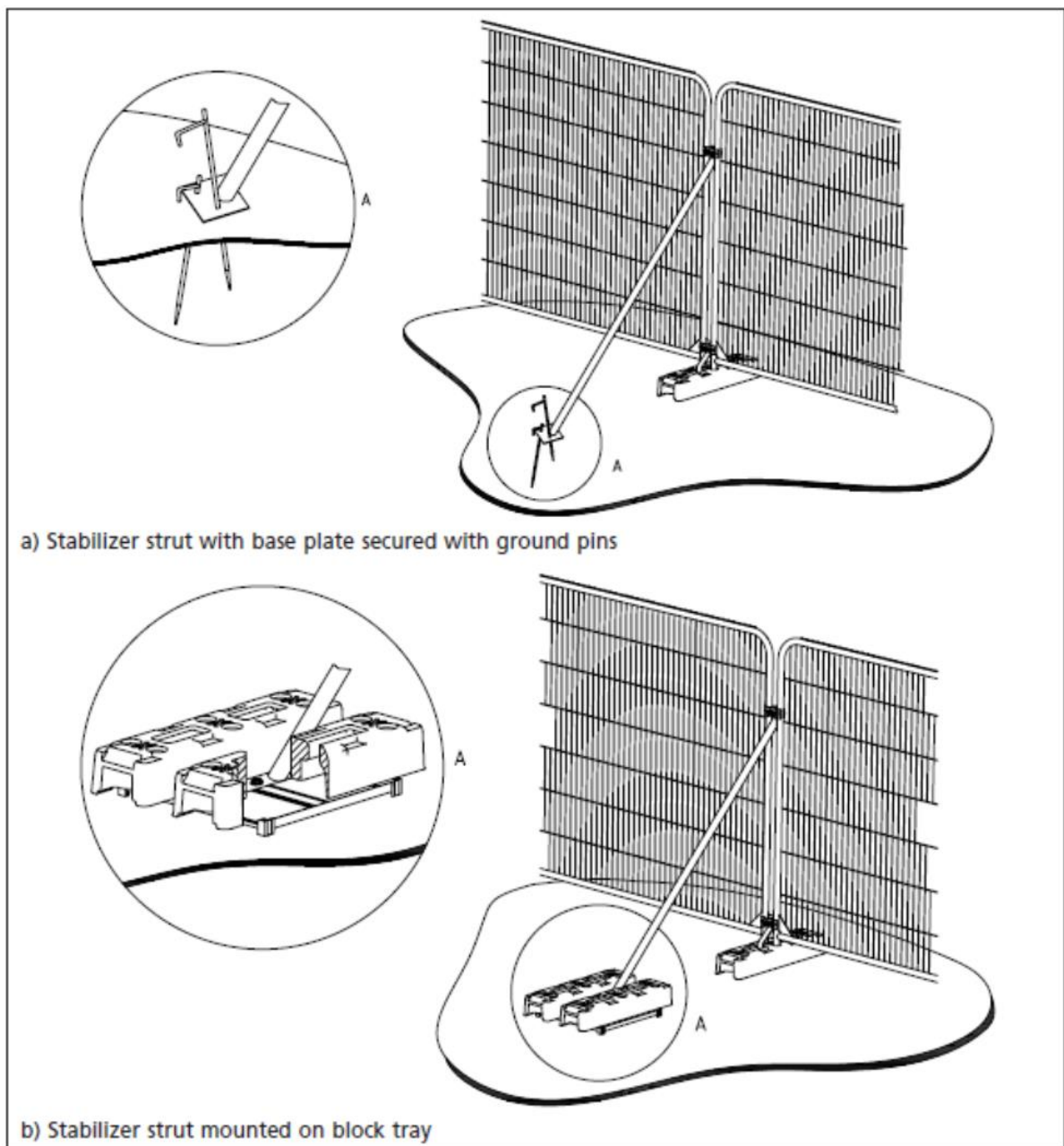


Figure AD.2: Stem Wrap Examples.

Stem wrapping with corrugated pipe or 2" x 4" wooden planks is sufficient to protect a tree's stem from mechanical damage. This method may be utilised where space for installation of tree protection fencing is unavailable.



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APPENDIX B – TREE PROTECTION BARRIER SIGNAGE

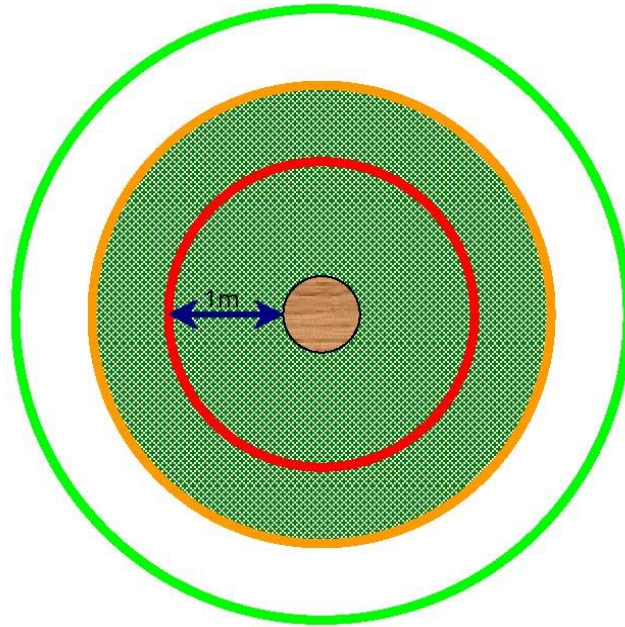
Figure AE.1: Example of warning signs for tree fence protection



Weather resistant notices are to be affixed to tree protection fencing, in positions clearly visible to contractors. Notices must read 'Construction Exclusion Zone/Tree Protection Area, no access or works permitted beyond this fence'.

APPENDIX C – NJUG VOL. 4 OPERATORS HANDOUT

NJUG GUIDLINE FOR INSTALLATION OF SERVICES CLOSE TO TREES

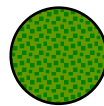


TREE PROTECTION ZONE

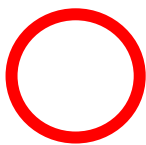
Key to Diagram



Trunk of Tree



Spread of canopy or branch



PROHIBITED ZONE – 1m from trunk. Excavations of any kind must not be undertaken within this zone unless full consultation with Hi-Line Arboriculturalist is undertaken. Materials, plant and spoil must not be stored within this zone.



PRECAUTIONARY ZONE – edge of tree canopy. Where excavations must be undertaken within this zone the use of mechanical excavation plant should be prohibited. Precautions should be undertaken to protect any exposed roots. Materials, plant and spoil should not be stored within this zone. Consult with Hi-Line Arboriculturist if in any doubt.



PERMITTED ZONE – outside of precautionary zone. Excavation works may be undertaken within this zone however caution must be applied, and the use of mechanical plant limited. Any exposed roots should be protected.

DAMAGE TO TREES

Tree roots keep a tree healthy and upright. Most roots are found in the top 600mm of soil and often grow out further than the tree's height. The majority of these roots are very fine; even close to a tree few will be thicker than a pencil. Most street tree roots grow under the footway but may also extend under the carriageway. If roots are damaged the tree may suffer irreversible harm and eventually die.

PROTECTING ROOTS - DO'S and DON'TS

There are three designated zones around a tree each of which has its own criteria for working practices.

THE PROHIBITED ZONE

Don't excavate within this zone.

Don't use any form of mechanical plant within this zone

Don't store materials, plant or equipment within this zone.

Don't move plant or vehicles within this zone.

Don't lean materials against, or chain plant to, the trunk.

Do contact the Hi-Line Arboriculturist or owner of the tree if excavation within this zone is unavoidable.

Do protect any exposed roots uncovered within this zone with dry sacking.

Do backfill with a suitable inert granular and topsoil material mix as soon as possible on completion of works.

Do notify the Hi-Line Arboriculturist or the tree's owner of any damage.

THE PRECAUTIONARY ZONE

Don't excavate with machinery. Where excavation is unavoidable within this zone excavate only by hand or use trenchless techniques.

Don't cut roots over 25mm in diameter, unless advice has been sought from the Hi-Line Arboriculturist.

Don't repeatedly move / use heavy mechanical plant except on hard standing.

Don't store spoil or building material, including chemicals and fuels, within this zone.

Don't build up the permanent ground level within this zone.

Do prune roots which have to be removed using a sharp tool (e.g. secateurs or handsaw). Make a clean cut and leave as small a wound as possible.

Do backfill the trench with an inert granular material and topsoil mix. Compact the backfill with care around the retained roots. On non-highway sites backfill only with excavated soil.

Do protect any exposed roots with dry sacking ensuring this is removed before backfilling.

Do notify Hi-Line Arboriculturist or the tree's owner of any damage.

THE PERMITTED ZONE

Don't cut roots over 25mm in diameter, unless advice has been sought from the Hi-Line Arboriculturist.

Do use caution if it is absolutely necessary to operate mechanical plant within this zone.

Do prune roots which have to be removed using a sharp tool (e.g. secateurs or handsaw). Make a clean cut and leave as small a wound as possible.

Do protect any exposed roots with dry sacking ensuring this is removed before backfilling.

Do notify the Hi-Line Arboriculturist or the tree's owner of any damage.

APPENDIX D – NEW FOOTPATH CONSTRUCTION IN CEZ – CELLULAR CONFINEMENT

SYSTEM (CCS) and HOGGIN FOOTPATHS

Cellular Confinement System (CCS):

The development involves the installation of a 'no-dig' footpath within the locations identified on the accompanying TPP. The 'no-dig' footpath construction is recommended to take the form of an above-ground cellular confinement system (CCS).

RPA/CEZ (precautionary zone) for retained trees will be set out on site by the PAC as per accompanying TPP. A methodology for the installation of the CCS for the footpath is as follows:

- For pedestrian movements and storage of materials – the use of a 100mm cellular confinement system is proposed within the hatched area as detailed on the TPP. (NB: 150mm depth CCS will be required for vehicle movements and tracked vehicles <3.5T).
- The new surface must be constructed above ground level. The existing surface vegetation will be removed using hand-held tools to the existing soil level. Plant machinery must not be used to scrape the soil surface.
- All large rocks/debris must be removed and any hollows filled with inert material e.g. angular stone or sharp sand. High spots must not be levelled through scraping or rolling as this can cause root severance or compaction of the rooting medium.
- A non-woven geotextile membrane (Geosynthetic Treetex or similar) must be laid out over the prepared area, overlaying edges and overlapping joints by a minimum of 300mm (over-lapping of geotextile to be: >3% CBR 300mm overlap; 1-3% CBR 500mm overlap; <1% CBR, 750mm overlap).
- The CCS (Geosynthetics Cellweb or similar) shall be laid out on the geotextile membrane. The depth of the CCS will be 100mm to accommodate the anticipated load bearing requirements. The CCS must be over-filled by approximately 50mm with clean angular stone (Type 4/20mm or Type 20/40mm). Crushed stone with fines e.g. M.O.T type 1 must be avoided as it reduces permeability of the CCS (refer to BS7533-13:2009 and to the Design Manual for Roads and Bridges (DMRB), Volume 4 Geotechnics and Drainage, Section 1 Earthworks, HA44/91, Volume 7 – IAN 73/06 Design Guidance for road pavement foundations and Manual of Contract Documents for Highway Works (MCHW), Volume 1 Specification for Highway Works for the construction and maintenance of the fill material).
- Cells must be filled, working from the furthest point of the CCS (i.e., the southern point), proceeding northwards (using the infilled panels as a platform).
- Traditional kerbing that requires excavation must be avoided. Non-invasive edge treatments e.g. pinned wooden sleepers, gabions or plastic/metal edging must be used instead. For this project, pinned, treated wooden edging is advised. To avoid trip

hazards, a graded soil bund shall be used to tie-in with the existing ground-level. This shall grade over a short distance and can be used for instance as a flower/shrub bed to provide interest, or simply seeded with grass.

- The temporary finishing/top course must be at least partially porous. Inter-linking boards are acceptable or the simplest solution would be to overfill the CCS by approximately 50mm as the wearing course. If construction activity leads to dust/debris being produced across the site, a temporary surface must be used to prevent soil and other fines permeating into the cells thus reducing permeability.
- Where the proposed surface level has to tie in with the existing, this shall occur so as to build on to the existing surface level. Where a hard surface is present, any suitable material would be acceptable to form the gradient to accommodate the anticipated loads, as long as no toxic material is allowed to leach into the soil below.
- Refer to the Geosynthetics brochure (<https://www.geosyn.co.uk/cellweb-trp-brochure>) for images and additional detail.

Hoggin Footpath

A hoggin footpath is a traditional, permeable, and natural-looking path made from a compactable mixture of gravel, sand, and clay. It is commonly used in rural or heritage settings where a more natural aesthetic is preferred over asphalt or concrete. Hoggin footpaths offer a sustainable and visually appealing alternative to hard paving, making them ideal for parks, gardens, and historic sites.

1. Site Preparation

- Excavation: The ground is excavated to a depth of approximately 150–250mm, depending on the expected load and soil conditions.
- Edging: Timber, metal, stone, or concrete edging is installed to contain the hoggin and prevent spreading. Edging should be set slightly above the finished level to help retain material.

2. Sub-Base Layer

- Material: A compacted Type 1 granular sub-base (typically MOT Type 1) is laid to a depth of 100–150mm.
- Compaction: The sub-base is compacted using a vibrating plate compactor or roller to provide a firm, stable foundation.

3. Hoggin Layer

- Material Selection: Hoggin is a naturally occurring or mixed blend of sand, gravel, and clay, offering a stable yet permeable surface.
- Depth: A layer of 50–100mm of hoggin is evenly spread over the compacted sub-base.

- Watering & Compaction: The hoggin is lightly watered to aid binding and then compacted using a roller or vibrating plate to create a firm, smooth surface. Additional layers can be added and compacted if required.

4. Finishing & Maintenance

- Surface Smoothing: The final surface is raked and compacted to ensure a level finish.
- Drainage Considerations: While hoggin is permeable, ensuring adequate cross-fall (1:40) or camber (1:50) prevents water pooling.
- Ongoing Maintenance: Occasional re-compaction and top-ups may be required, especially in high-traffic areas.



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