



ARBORICULTURAL IMPACT ASSESSMENT

At

**6 LEIGH ROAD,
HAVANT, HAMPSHIRE**

For:

ARCHIBUILD

This report was compiled by

Marco Bartolini

Arboricultural Consultant *TechArborA, (TE02501) FdScWM, PTI, Dip Mgmt*



*This report is the responsibility of Arbor-Eco Consultancy.
It should be noted that whilst every effort is made to meet the client's brief,
no site investigation can ensure complete assessment
or prediction of the natural environment.*

Report Number: MB211104-01

December 2021

GLOBAL PANDEMIC

COVID-19 Government Rules on social distancing, cleanliness, lockdown measures and such like has meant that the handling of personal equipment belonging to others is no longer permitted. Touch-points such as door handles for example comes with risk. Inviting others into private property is no longer advisable.

19th July 2021 – The English Government announced ‘Freedom Day’, whereby a number of COVID-19 rules were relaxed. However, Arbor-Eco Consultancy made a conscious decision not to follow this mass removal of masks, openness and complacency but to remain vigilant and respect others by wearing appropriate PPE and remaining at a distance from members of the public.

The headings for reports under ‘normal’ circumstances would be deemed necessary for the completion and acknowledgement that a report was concise. This may no longer be possible. Providing welfare facilities by the client in their own property is not deemed safe at the time of the pandemic and writing of this report.

The rules and regulations will add pressure to the industry and this should be taken into account by the Local Authority reading this report.

For the latest guidance please see the NHS or Government websites.

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

ARCHIBUILDects commissioned Arbor-Eco Consultancy to compile an Arboricultural Impact Assessment following the undertaking of an Arboricultural Survey of trees situated on land at 6 Leigh Road, Havant. The site is within the administrative boundary of Havant Borough Council and within the County of Hampshire.

This report details the impact that the proposed development will have upon the site's existing tree stock and sets out recommendations for the subsequent mitigation or avoidance of impact. The study has been completed in accordance with guidance contained within British Standard BS5837:2012 'Trees in relation to design, demolition and construction – Recommendations'.

1.2 SITE DESCRIPTION

The site is located within a populated residential area of the district of Warblington within the Borough of Havant and situated towards the northern fringes of the town of Havant. The site is situated off Leigh Road, minor trunk road. The site is dominated by the existing dwelling, areas of hard surfacing, dense areas of understorey shrubs and vegetation beneath a number of mature trees. The trees and vegetation surveyed were growing within the front aspect of the property and adjacent to the western boundary with Leigh Road, minor trunk road.

The site is delineated from neighbouring land by a mix of fencing. To the north, the site abuts a further property off Leigh Road, minor trunk road. The eastern boundary was demarcated by a property off Riversdale Gardens, minor trunk road. The southern boundary was delineated by a property accessed off Leigh Road, minor trunk road. The western boundary met with Leigh Road, minor trunk road. The site is centred at National Ordnance Survey Grid Reference SU 71925 06812.

The topography of the survey area is undulating with minor terracing between the property and the western boundary that included a pond.

Arbor-Eco Consultancy, Tree Constraints Plan, Drawing Number MB211104-01-01 in Section 5 indicates the location of the trees surveyed.

1.3 DEVELOPMENT PROPOSALS

It is understood that the site surveyed will be the subject of a planning application to include the construction of a new detached double garage block. In addition, a new surface will be laid to the crescent shaped access and egress to the property.

1.4 DOCUMENTATION PROVIDED

This assessment is based upon the information provided by the client in addition to information collected by Arbor-Eco Consultancy. The documents and drawings considered are detailed within Table 1.1.

Author	Document	Document Number	Date
ARCHIBUILD	Proposed Plans and Elevations	0010 P01	Jun 2020
ARCHIBUILD	Proposed Site Layout	0011 P01	Jun 2020
ARCHIBUILD	Topographical Survey	0020 P01	Jun 2020
Havant Borough Council	Planning Development Response	APP/21/01146	Oct 2021

Table 1.1: Documentation Provided

2. STATUTORY PROTECTION

2.1 TREE PRESERVATION ORDER AND CONSERVATION AREA DESIGNATIONS

Examination of Havant Borough Council (2021) interactive mapping system

<http://maps.havant.gov.uk/havant.aspx> accessed on 9th December 2021, indicated that one tree is the subject of a Tree Preservation Order (TPO). Havant Borough Council TPO Number: 1304 refers to tree number 6, Yew Tree.

The Town and Country Planning (Tree Preservation) (England) Regulations 2012, Part 4 – Applications for Consent under Tree Preservation Orders states that an application for consent to the cutting down, topping, lopping or uprooting of any tree in respect of which an order is for the time being in force shall be made in writing to the authority on a form published by the Secretary of State for the purpose of proceedings under these Regulations.

Until such time as the application has been granted no works must be undertaken on the trees identified as being subject to TPOs that contravene the order. Works include pruning, topping, lopping, uprooting or wilfully damaging these trees. Any proposed pruning works will need to be fully specified and agreed within any planning application. If works are not included within the planning application, a separate TPO application will be required to be submitted to the Local Authority for permission to undertake any works (approximately an 8-week process).

Apart from [limited exceptions](#), permission must be sought from the local planning authority by submitting a standard application form. The form is available from the Local Authority [Planning Portal](#). It is important that the information on the form makes clear what the proposed work is and provides adequate information to support the case.

The authority's consent is not required for carrying out work on trees subject to an Order so far as such work is necessary to implement a full planning permission. For example, the Order is overridden if a tree has to be removed to make way for a new building for which full planning permission has been granted. Conditions or information attached to the permission may clarify what work is exempt.

Further examination of Havant Borough Council (2021) interactive mapping system

<http://maps.havant.gov.uk/havant.aspx> accessed on 9th December 2021, indicated that the site is not within a Conservation Area.

2.2 PROTECTED SPECIES

Birds

The Conservation of Habitats and Species Regulations 2017 (as amended) places a duty on public bodies to take measures to preserve, maintain and re-establish habitat for wild birds. Nesting and nest building birds are protected under the Wildlife and Countryside Act WCA 1981 (as amended). Several bird species are Species of Principal Importance for Nature Conservation in England, making them capable of being material considerations in the planning process.

As the trees on, and adjacent, to the site provide potential habitat for nesting birds all tree work should ideally be completed outside the nesting bird season (generally March to September). If this is not possible then the vegetation should be subject to a nesting bird inspection by a suitably experienced ecologist prior to commencement of works. If any active nests are identified then the vegetation, and a defined buffer zone, will need to remain in place until the young have naturally fledged.

Bats

Bats and the places they use for shelter or protection (i.e. roosts) receive European protection under The Conservation of Habitats and Species Regulations 2017, as amended (Habitats Regulations 2010, as amended). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. This protection means that bats, and the places they use for shelter or protection, are capable of being a material consideration in the planning process.

Disturbance of animals includes in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong. As bats re-use the same roosts (breeding site or resting place) after periods of vacancy, legal opinion is that roosts are protected whether or not bats are present.

Generally, should the presence of a bat roost be suspected whilst completing works on any trees on site then an appropriately licensed bat worker should be consulted for advice.

3. ARBORICULTURAL IMPACT ASSESSMENT

3.1 INTRODUCTION

All trees within and closely surrounding the proposed development site have been surveyed and each has been identified with a unique number. The location of the trees can be found on Drawing Number MB211104-01-01 in Section 5.

Strong considerations and discussion have taken place to retain all trees surveyed with the exception of T9, T10, part of G2 and H1, a small hedgerow that only screens the garden from the driveway.

A schedule of the trees surveyed can be found within Appendix 1.

3.2 DEVELOPMENT DESIGN AND LONG-TERM IMPACTS

3.2.1 Potential Impact on the Amenity Value of Trees

Impacts

Tree Removal

The proposed development will require the removal of tree numbers 9 and 10, to include hedgerow number 1 (H1) and a section of group G2 to permit its successful implementation.

In accordance with the Town and Country Planning (Tree Preservation) (England) Regulations 2012, Part 4 – Applications for Consent under Tree Preservation Orders, this report represents the necessary submission to carry out tree works to trees that are the subject of a Tree Preservation Order to permit the successful implementation of the proposed development. Any tree works that are subsequently required shall be applied for in accordance with current guidance.

Tree and hedgerow removal is required to achieve various aspects of the proposed development as discussed below:

- **Construction of Proposed New Garage and Access Road:** Construction of the proposed new garage and access will directly require the removal of two trees and one hedgerow. It will be necessary to remove these trees and hedgerow to permit access, scaffold installation space and to allow for the safe construction of the access driveway and building with sufficient working space.

One Category B tree, one Category C tree, part of a group and hedgerow has been identified for removal. Yew tree (T9), Lawson Cypress tree (T10), Mixed Species Group (G2 in part) and Hedgerow (H1). These trees can not be realistically retained due to the incursion within the RPAs, change of levels and proximity to the proposed driveway and garage block.

One category U tree has been identified for removal and was deemed to have a limited life expectancy due to defects within the tree. Tree number 3, Lawson Cypress.

Overall, the proposed development will require the removal of two trees, a section of a group and one hedgerow. The trees, group and hedgerow to be removed are shown on the Tree Protection Plan, Drawing Number MB211104-02-01 in Section 5.

Proposed Tree Works

To permit space for the construction of the new building, relay the driveway and to provide working space for the hard and soft landscaping improvements it will be necessary to carry out felling works to the trees a group in part and a hedgerow on this site prior to any other works being carried out. The proposed tree removal works are detailed in Table 3.1.

Tree No	Species	BS5837 Cat	Reason Works Required
1	Portuguese Laurel	C2	Crown lift to 5.0 m above ground level over driveway.
3	Lawson Cypress	U	Fell. Tree is deemed to be stressed and the majority of leaf cover has died (possibly drought related).
6	Yew	B	Crown lift to 5.0 m above ground level over driveway.
8	Bay	C	Crown lift to 5.0 m above ground level over driveway.
9	Yew	C	Fell to permit space to construct the garage and access driveway.
10	Lawson Cypress	B	Fell to permit space to construct the garage and access driveway.
G1	Mixed Species	C	Face back to beyond kerb line and crown lift to 5.0 m above ground level over driveway to facilitate the proposed development.
G2	Mixed Species	C	Remove a section of the group to permit space to construct the garage and driveway. Face back to beyond kerb line and crown lift to 5.0 m above ground level over driveway to facilitate the proposed development.
H1	Western Red Cedar	C2	Remove. To facilitate the development.
Note; The delay between submission and start date may affect the level of pruning required due to incremental growth to all vegetation in the spring of 2022. The pruning work should be reviewed prior to construction start date.			

Table 3.1: Tree Works Required

In addition to the tree removal work there will be a requirement to carry out an element of facilitation pruning works or works to meet with the Highways Act 1980. Until such time as the project build date has been set then the works to the retained trees has yet to be determined. Once the date has been set then a tree works schedule should be developed and agreed to indicate the work required. In the meantime, it is worthy of note that a number of trees on this site overhang footways, footpaths and a highway.

Trees and vegetation that overhang the highway should be crown-lifted to at least 5.2 m above ground level to allow safe passage of high sided vehicles as well as being cut back sufficiently from the edge of the carriageway to allow clearance for wing mirrors. Trees and vegetation that overhang footways and footpaths should be crown-lifted to at least 2.5 m above ground level and cut back to ensure the footpath/way is at least 1.2 m in width. This is to allow safe passage for all footpath/way users including wheelchairs, mobility scooters, etc.

These heights have been selected as an acceptable standard and any vegetation below this may be deemed to be an obstruction. The local authority may enforce Section 154 of the Highways Act (1980) which allows a Local Authority to serve notice upon the owner of the trees/ vegetation informing them that they need to clear any obstructions safely.

Mitigation/Avoidance

There has been no indication as to whether a landscape plan is being developed. However, should any planting be carried out then and new tree planting should be carried out in accordance with British Standard 8545:2014 Trees: from nursery to independence in the landscape – Recommendations.

3.2.2 Proximity of Trees to Proposed Structure

Impacts

Branch Spread

It is unlikely that any tree will impact upon the new garage. It is evident that an existing tree management regime existed, in the form of pruning and pollarding, and it is noted that any future conflict that may arise from the proposed development can be appropriately managed through continued management works to the tree's canopy. So long as such works are completed in accordance with best practice guidance, they will not cause significant harm to the health or amenity value of the tree.

Shading

The garage will experience some shading during the day as the sun tracks across the horizon. However, this is not classed as living space so there is no impact. The orientation of the building and aspects of the windows would suggest that any shading will be felt in the late afternoon. Therefore, it can be assumed that no significant shading of the proposed new building is likely to occur due to existing or proposed trees.

Leaf Litter, Fruits, Pollen, Sap etc.

Whilst the majority of the retained trees are species associated with significant fruit fall, leaf and branch drop or sap exudate problems the inconvenience experienced can be overcome by implementing good housekeeping.

Mitigation/Avoidance

Trees across this site will be the subject of cyclical pruning as the trees continue to grow irrespective of the proposed development. Further works will be required in the future to prevent conflict occurring with the footway and highway along with the access driveway. However, such works will not be significant as to impact the long-term visual quality of the trees.

With respect to leaf litter, it is noted that the sweeping up of leaves and cleaning of gutters, which may become blocked by falling leaves, is considered to be routine seasonal household maintenance and, as such, no notable conflict with the proposed development is considered to occur. Nonetheless it may prove appropriate to use gutter guards, or otherwise enclosed gutters, to minimise the potential for leaf fall to cause blockage and an ongoing nuisance.

3.3 POTENTIAL IMPACTS FROM CONSTRUCTION PROCESSES OF THE PROPOSED DEVELOPMENT

3.3.1 Potential Root and Canopy Protection

To prevent harm occurring to retained trees during development it is recommended that demolition and construction works are excluded from the Root Protection Areas (RPA) of retained trees. Additionally, works should not be undertaken beneath the canopy spread of retained trees where this can be avoided.

The RPA represents the minimum area around trees that must be left undisturbed to ensure their survival. The roots typically occupy the top 600 mm of soil and the fine roots which absorb water, oxygen and nutrients are situated in the top 100 mm of soil. Any incursion into the rooting zone of a tree can cause a notable impact upon a tree's health.

Where existing areas of hard surfacing exists within the RPA of retained trees it is very likely that the rooting will have occurred asymmetrically due to the hard structures and the morphology of the roots is such that they are likely to have formed a fan shape with many roots running parallel to the man-made structures rather than being offset so far in to the site. The current RPA is shown in accordance with the guidance within BS5837:2012 which is effectively a presumed calculation of the extent of a tree's root system that is required to ensure the continued vigour of a tree. For the benefit of this report, it is assumed that conflict with the roots of retained trees will be insignificant and that the roots shown within the site will be protected.

Demolition and construction work carried out within the RPAs of the retained trees will cause the greatest damage. Soil that has been compacted will not provide suitable conditions for the survival and growth of vegetation, whether existing or new, and is a common cause of post-construction tree loss on development sites. Compacted soil will adversely affect drainage, gas exchange, nutrient uptake and organic content, and will seriously impede or restrict root growth. The risk of soil compaction is greatest in soils with a significant clay content and in wet conditions. It can result from temporary or short-term loadings, such as the passage of a single vehicle, or from longer-term construction activities, including materials storage.

In accordance with BS5837:2012, Section 4.6.2, an allowance for the modification can be made to the RPA of trees located adjacent to man-made or naturally occurring hard structures. In this case highways, access routes, footpaths (especially those that are kerbed) and underground services will affect the morphology of roots. The morphology of the roots is such that they are likely to have formed a fan shape with many roots running parallel to the hard structures rather than being offset in to the site. To determine the exact location of the roots of a tree it would be necessary to employ a root-radar for this work.

Section 7.4.2, Para 7.4.2.3 of BS5837:2012 permits the construction of new hard surfacing within the unmade ground of the RPA of a retained tree of no greater than 20%. This does not apply to the A category trees. Despite this, it is felt that T9 and T10 must be removed due to the change in levels and proximity to the proposed development.

The RPA and canopy spread of each tree to be retained is shown on Drawing Number MB211104-02-01, Section 5. Additionally, details of the crown spread measurements are contained within Appendix 1 and a schedule of RPAs for trees on the site is located at Appendix 2.

Impacts

The proposed development of the site has been designed so that no major works are required within the RPAs of the retained trees.

The construction works to resurface sections of hard surfacing, such as the driveway and parking bays has the greatest potential to cause harm to the retained trees. It is considered that the trees identified within on Tree Protection Drawing MB211104-02-01, Section 5, will not be so significantly impacted upon with the adoption of tree protection measures, the installation of suitable ground protection (where applicable) and good working practices as described within Sections 3.3.6 and 3.3.8. In addition, the methodology for a no-dig solution will be required as described within Section 3.3.8.

Where there is a likelihood of conflict and in areas where construction is required within the RPAs of retained trees 1, 2, 4, 5, 6, 7 and 8 along with G1 and G2, then the adoption of good working practices and the development of a recognised technical solution will reduce the impact to the trees' health and vitality (See Section 3.3.8 for more details).

Overall, it is considered that the potential for harm to occur to the root systems of retained trees can be adequately controlled through the adoption of appropriate working practices and erection of protective barriers to exclude access from vulnerable sections of trees RPAs.

Mitigation/Avoidance

Construction Exclusion Zones

To minimise the potential for harm to occur to the root systems and canopies of retained trees during development it will be necessary to implement construction exclusion zones throughout the site. These are areas surrounding the trees' RPAs and canopies in which no demolition or construction works, or related activities, will be undertaken. These zones will be demarcated by the erection of tree protection barriers prior to any works (with the exception of tree works) being carried out.

It is recommended that the exclusion zones are afforded protection at all times through the combined use of tree protection barriers, or stem boxes, and ground protection (specified in accordance with BS5837:2012). Stem boxes should be installed around trees adjacent to roads or footpaths to protect the trees where existing hard surfacing exists within the RPAs. It must be noted that any stem boxes and tree protection barrier uprights driven into the ground must adopt the procedures as specified within Section 3.3.9.

Where hard surfacing already exists on site, consideration has been given so that these areas will be retained and utilised as ground protection within the RPAs of retained trees including the replacement of the driveway finished surface. The retention of the hard surfacing is deemed suitable ground protection and therefore the conflict with retained tree's roots is eliminated.

Where the replacement of hard surfacing is being considered then retaining the sub-base hard-core layer will also reduce the risk of root damage. This has been agreed with the client.

To minimise the potential for harm to occur to root systems of retained trees from hard surfacing creation it is proposed to construct the driveway surface in accordance with a no-dig methodology and ensure that it is finished with a permeable surface. See Section 3.3.8 for further details.

Drawing Number MB211104-02-01, in Section 5, provides a Tree Protection Plan indicating the location of areas of no-dig construction, tree protection barriers and ground protection.

All works within the RPA of a retained tree should be carried out under the supervision of the retained Arboricultural Consultant. All tree protection measures should be confirmed for their position and suitability prior to any construction works being carried out (See Section 3.3.13 for contact details).

3.3.2 Site Construction Access

Impacts

Construction access to the site will need to make use of the existing access routes in to the site off Leigh Road. To minimise the potential for harm to occur to the crowns of the retained trees which overhang the route access facilitation pruning works shall be carried out prior to construction work taking place (See table 3.1). The extent of such pruning works should be revised prior to any construction traffic entering the site. Maximum heights of vehicles should also be investigated to ensure crown height is sufficient throughout the various phases of the development. The tree works schedule shall be issued once a project start date has been announced in order to permit works to trees that are the subject of a Tree Preservation Order.

Additionally, where vehicles need to pass within close proximity to retained trees protective barriers or tree stem boxes should be installed to prevent vehicles accidentally encroaching into areas where retained trees are situated to minimise the potential for collision damage to trees stems occurring.

Mitigation/Avoidance

All trees surrounding the potential access routes should be adequately fenced and ground protection installed (where required) to ensure that no damage to these specimens occurs during construction.

The retained Arboricultural Consultant shall submit a summary written report by email to the local authority confirming that all tree protection measures are in place, fit for purpose and adequately signed prior to construction or demolition works being carried out.

3.3.3 Contractors Parking

Impacts

The location of contractor parking is yet to be determined but due to the confined nature of the site, and that the driveway is being resurfaced then it will occur in off-site locations and well away from the RPAs of retained trees.

Mitigation/Avoidance

No contractor parking is to occur at this site. The Contracts Manager is to ensure that all highway laws are respected and no parking is to occur on any highway verge, pavement or across a neighbour's driveway.

3.3.4 Site Cabins and Welfare Facilities

Impacts

The location of the Site Cabins and Welfare Facilities is yet to be determined; however, it is understood that it will occur in locations well away from the RPAs of retained trees.

Mitigation/Avoidance

Installation of protective barriers and ground protection to ensure that trees are protected from physical damage resulting from works to establish a Site Cabins and Welfare Facilities.

The welfare and safety of the landowners and contractors must be a primary consideration during the COVID-19 Pandemic.

3.3.5 Delivery and Storage of Materials

Impacts

The proposed locations for site deliveries and materials storage during the development is yet to be determined; however, it is understood that it will occur outside of the RPAs of retained trees.

Mitigation/Avoidance

Ensure no storage occurs upon un-surfaced ground within the defined RPAs of the retained trees via the installation of protective barriers and ground protection.

3.3.6 Demolition of Existing Structures

Impacts

The proposed development of the site will require the deconstruction of the upper horizon of the driveway. So long as good working practice is adopted in conjunction with suitable tree and ground protection whilst utilising hand-tools and tracked vehicles of 1.5 t or less then the impact to the retained trees will be significantly reduced.

Mitigation/Avoidance

To prevent any ancillary works associated with the deconstruction of the driveway from harming trees it will be necessary to install protective barriers prior to commencement of these works.

Additionally, where the use of 360-degree traversing vehicles is used, then they will be supervised by a banksman to ensure that any traversing arm shall not be in proximity to any retained tree.

Where hard surfacing is being replaced then retention of the hard core sub-base layer will be retained to prevent further incursion in to the rooting zones of these trees. The sub-base layer will provide the necessary protection to the underlying roots during this phase of development.

The location of the tree protection barriers and ground protection is shown on Tree Protection Plan Drawing Number MB211104-02-01, Section 5.

3.3.7 Construction of Buildings

Impacts

The proposed construction of the garage block has been considered in proximity to retained trees;

Where the scaffold towers are erected within proximity to the RPAs of the retained trees the following approach should be adopted;

1. Apply the following ground protection within the RPA of the tree prior to the realignment of the tree protection barriers if required;
 - a. For pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g., 100 mm depth of woodchip), laid onto a geotextile membrane.
2. Construct the scaffold vertical tubes upon wooden blocks (to distribute the point load) with suspended walkways ensuring a layer of impermeable membrane is placed beneath the scaffold to catch any falling debris such as curing cement as this can be phytotoxic to the roots of vegetation. All pedestrian access will use the suspended scaffold walkways as defined by the tree protection barriers as shown on Tree Protection Plan Drawing Number MB201012-02-01, Section 5.
3. Fit scaffold boards to provide a walkway of 1.5 m width.
4. Any vegetation obstructing access or deemed to be within eye-strike shall only be removed if the specification as discussed in Section 3.2.1 has been applied. If this is not the case then the Contracts Manager shall seek the authority of the retained Project Arboriculturalist or Arboricultural Officer for the Local Authority (See Section 3.3.13 for more details).

To restock materials around the scaffold towers, further ground protection may be required where unmade ground exists and therefore the Contracts Manager will be responsible for the installation and supervision of this works. Once this has been carried out the retained Arboricultural Consultant will be contacted to confirm the suitability and location.

The locations of the tree protection barriers and ground protection is shown on Tree Protection Plan Drawing Number MB211104-02-01, Section 5.

Mitigation/Avoidance

To minimise the risk of damage occurring to the tree's crowns during the erection of scaffolding and construction it may be necessary to undertake some access facilitation pruning works, as detailed in Section 3.2.1.

The potential for direct damage to the stems of the trees will be controlled by the installation of protective barriers or stem boxes as shown on Tree Protection Plan Drawing Number MB211104-02-01, Section 5.

3.3.8 Construction of New Hard Surfacing

Impacts

Examination of ARCHIBUILD, Proposed Site Layout indicates that the construction of the proposed hard surfacing (access driveway and parking bays) will pass within the RPAs of tree numbers 1, 2, 4, 5, 6, 7 and 8 along with G1 and G2.

The potential for significant harm to occur to the retained trees can be controlled through adoption of appropriate working techniques, construction utilising a no-dig methodology and tree protection measures along with adequate supervision.

To gain access to the garage from the driveway will require a shallow ramp to be formed within unmade ground within the RPAs of the remaining vegetation within G2. Investigation of the ground indicates that the turf layer, plus approximately 150 mm of soil will be sufficient to reach the necessary gradient.

No access shall occur within the Construction exclusion Zone without the permission of the retained Arboricultural Consultant or Arboricultural Officer for the Local Authority (See Section 3.3.13 for more details).

Mitigation/Avoidance

Wherever it is intended to undertake construction operations within the Root Protection Areas of trees precautions must be taken to maintain the condition and health of tree's root systems.

In particular:

- Works shall be conducted in such a manner as to prevent physical damage to roots during construction, such as soil compaction or root severance.
- Provision for water and oxygen to reach the roots must be made and the soil structure must not be disturbed.
- Provision must be made for future root growth and precautions taken to ensure that such root growth does not cause unacceptable levels of damage to the finished construction.
- The soil must not be compacted and soil bulk density must be maintained at suitable levels for tree root growth and function. In this respect, a soil bulk density of over 1.8g/cm³ is likely to impede root growth and function.

To achieve the above requirements for tree root growth and function the proposed temporary hard surfaces shall be designed so that:

- No excavation of bare ground is required for their installation; to ensure that physical root damage does not occur.
- The surface can be installed without compaction of the existing soils; thus, ensuring damage to the soil structure does not occur.
- The surface is permeable; thus, ensuring that oxygen and water can reach the root system and that CO₂ can diffuse vertically out of the soil as high concentrations can cause root suffocation.

Where existing areas of hard surfacing is proposed for renewal then it is recommended that only the surface layer is removed down to the existing hard-core base layer and rebuilt from this horizon. This will negate the requirement for excavating within the RPA of a retained tree and thus reducing the likelihood of damage to underlying roots.

The client has indicated that the preferred finished surface will be block paving. This is a permeable solution and acceptable and justified. Once the upper gravel layer has been removed, any augmentation of ground shall be carried out using washed sand (builders sand contains salt which can kill vegetation over time). The block pavers shall be laid hand negating any opportunity to cause harm to underlying roots. The driveway will only be replaced between existing kerb boundaries and not extend into any unmade ground.

To form the necessary shallow ramp to gain access in to the garage will require the removal of approximately 150 to 200 mm of turf and top soil. Investigations indicated that this would not be sufficiently deep enough to harm the roots of the adjacent trees. Due to past garden use, the grubbing out

of H1 and removing the log preparation facility will allow the necessary depth to form a shallow entrance from the driveway to the garage. Therefore, no impact with the retained trees is anticipated.

In summary mitigation measures shall be to utilise a 'no dig' construction methodology to construct all areas of hard surface within the RPAs of the retained trees to avoid any conflict with the retained trees.

An appropriate method statement should be developed by the Project Manager to ensure all retained trees are suitably protected during the development for the laying of block paving. In accordance with BS5837:2012 all areas of construction activity within the RPA should be supervised by the retained Arboricultural Consultant (See Section 3.3.13 for contact details).

3.3.9 Boundary and Ancillary Structures

Impacts

The exact details of any proposed boundary structures are not known at this time. However, it is unlikely that any boundary structures will require replacement or renewing.

Mitigation/Avoidance

The location of any concrete foundations and supporting posts needs to be carefully considered to ensure no damage to the adjacent trees occurs. For example, due to the highly alkaline leachate produced during the curing process of wet concrete, the concrete should not be poured within the RPA of a retained tree unless an impermeable liner has been installed.

Foundations for any proposed retaining wall within an RPA should not be of traditional trench style but consideration made for an above ground bridged-lintel to allow for future growth both above and below ground.

Additionally, any new fence posts should not be constructed within 1.0 m of the stem of any retained tree. Consideration for the use of half-panels to relocate fence posts away from retained trees by measuring site boundaries beforehand is recommended. This will reduce the amount of excavation for post foundations required within the RPAs of the retained trees. Any excavation for fence posts in RPAs will need to occur by hand and under arboricultural supervision to ensure no root damage occurs (See Section 3.3.13 for contact details).

No machinery should be used for the installation of fence posts and ground protection may be a consideration in some circumstances. See Section 3.3.7 for ground protection options.

In accordance with BS5837:2012 all areas of construction activity within the RPA should be supervised by the retained Arboricultural Consultant (See Section 3.3.13 for contact details).

3.3.10 Site Gradients

Impacts

The majority of the development has been designed so that there is a limited gradient fall across the site. The only section of land to experience a gradient change is where the driveway meets with the garage block access.

Mitigation/Avoidance

The areas of new hard surfacing within the RPAs of retained trees are to be built up from existing ground level in accordance with a no-dig methodology. No excavation of ground or build-up of levels shall occur within the RPAs of retained trees.

In accordance with BS5837:2012 all areas of construction activity within the RPA should be supervised by the retained Arboricultural Consultant (See Section 3.3.13 for contact details).

3.3.11 Service Requirements

Impacts

As the site is developed and there are existing service connections throughout it is considered that various opportunities to create new service connections without harming trees exist.

Mitigation/Avoidance

The methodology for the installation, maintenance or removal of any services within an RPA will be in accordance with NJUG Volume 4 'Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees'. This will include hand dug 'broken' trenches to ensure that maximum protection is given to tree roots.

It is advised that the installation of any new services and drainage occur outside the RPAs of the retained trees. It is also advised that CCTV and lighting columns should not be situated in locations which will place future pressure on trees for crown pruning due to visibility/shadowing. Any lighting bollards or similar structures that require to be fixed to the ground with underground services shall be fitted outside of the RPAs of retained trees.

All areas of construction activity within the RPA of a retained tree should be supervised by the retained Arboricultural Consultant (See Section 3.3.13 for contact details).

3.3.12 Preconstruction Recommendations

Auditable systems of site monitoring should be made available to the Local Planning Authority/Arboricultural Officer and included within the program of development construction as recommended within BS5837:2012. This should include a schedule of events whereby periods of supervision or input from the Project Arboriculturist is required (See Section 3.3.13 for contact details).

Carry out all tree works prior to any demolition or construction activity taking place.

A pre-commencement site meeting involving all interested parties should be convened to confirm;

- Confirmation of Tree Works Schedule;
- Deconstruction of driveway and formation of shallow ramp process;
- Confirmed location for Tree Protection Measures;
- Confirmed location for Ground Protection Measures;
- Site Compound location and set-up;
- Parking locations;
- Audit and Periods of Supervision.

3.3.13 Contact Details

Name: Marco Bartolini

Position: Arboricultural Consultant

Mobile: 07542 093882

Email: arborecoconsultancy@gmail.com

Arboricultural Officer

Local Authority: Havant Borough Council

Address: Public Service Plaza, Civic Centre Road, Havant, PO9 2AX

Phone: 01730 266551 or 023 9244 6019

4. ARBORICULTURAL METHOD STATEMENT

An Arboricultural Method Statement is deemed not to be required as various aspects of the proposed construction can be adequately supervised by the retained Arboricultural Consultant.

Planning Context; National Planning Policy Framework

It is important to note that trees are a material consideration in the UK planning system and existing trees are an important factor requiring forethought when assessing the development potential of a site, whether they are within the working area or within such proximity to it that they may be affected by construction operations.

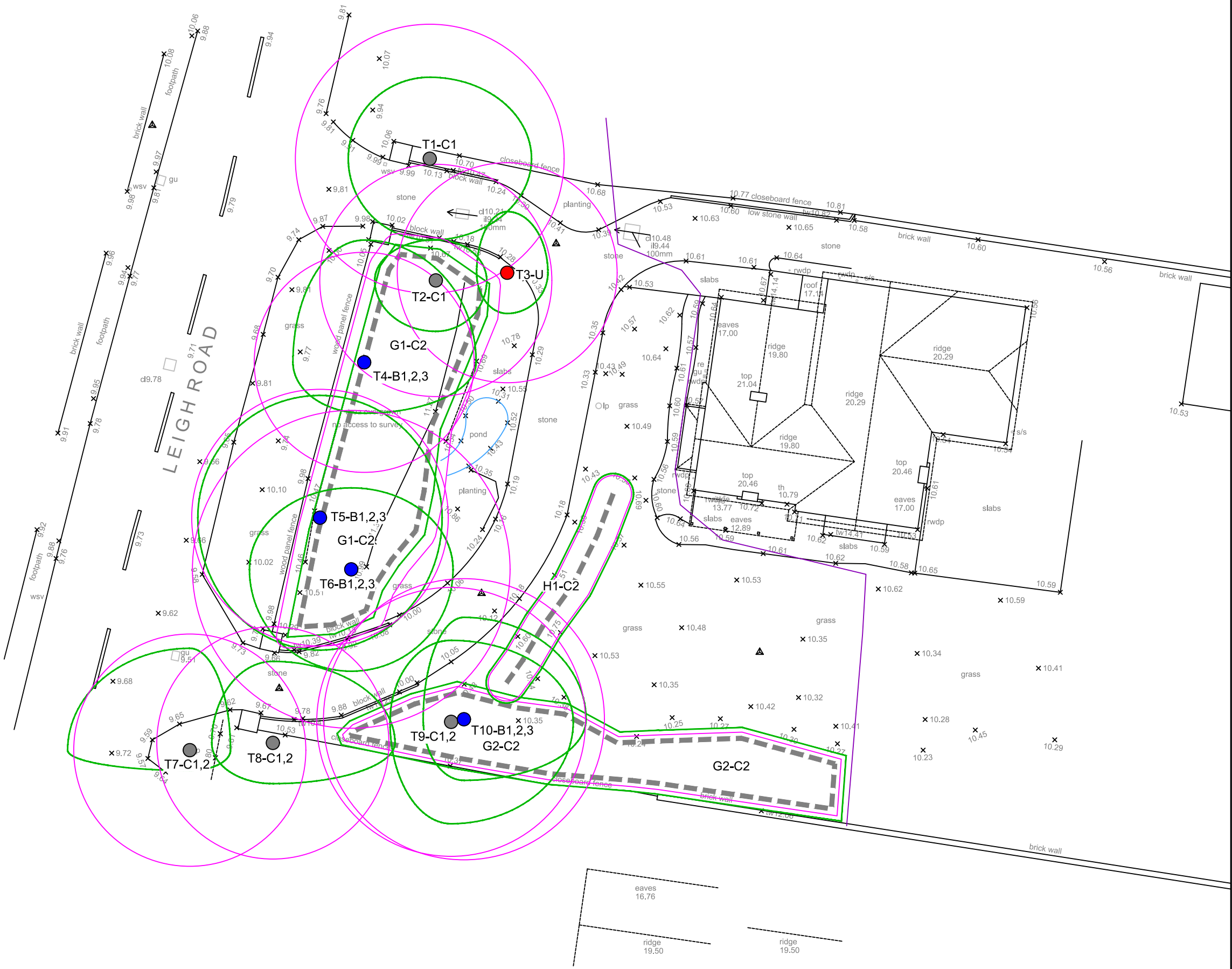
Environmental Benefits of Trees

It is worthwhile noting that the trees can intercept many of the hostile elements humans and animals need shelter from. Trees provide shading and offer significant humidity regulation and a cooling effect felt at ground level. All trees will consume a considerable amount of ground water that will regulate the local hydrology and may assist with the removal of local flooding issues. A mature tree will consume tens of thousands of litres of water during a year. A group of trees can provide an element of acoustic dampening effect at ground level and growing next to a road many tree species have been linked with the sequestration of impurities from the atmosphere. Finally, the trees will provide some shelter from prevailing winds and inclement weather. Therefore, it can be seen that the trees will benefit, rather than hinder, the landscape in which they are growing.

5. DRAWINGS

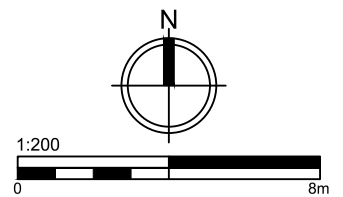
1. Drawing MB211104-01-01 Tree Constraints Plan
2. Drawing MB211104-02-01 Tree Protection Plan

General Notes
Do Not scale off drawing - refer to the tree data schedule for accurate crown spread measurements.
Depictions of tree canopies are based on measurements taken to four cardinal compass points.
No liability of any kind is accepted for any omissions Or inaccuracies in respect of this plan.
The original of this drawing was produced in colour a monochrome copy should Not be relied upon.
All rights reserved.



Key

- Trees**
Showing Canopy extents, category colour and tag number (with category).
- Category A**
Trees of high quality with an estimated remaining life expectancy of at least 40 years.
- Category B**
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.
- 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.
- Category U**
Trees in such a condition that they can not realistically be retained as living trees in the context of the current land use for longer than 10 years.
- Tree Groups**
Shown as dashed centre/boundary line. Colour represents category (see above)
- BS 5837:2012 Root Protection Area**



Arbor-Eco Consultancy
2 Daisy Lane, Locks Heath,
Hants. SO31 6RA.
Email: arborecoconsultancy@gmail.com
Telephone: 07542 093882
Arboricultural Consultant
Marco Bartolini

Client
ARCHIBUILD

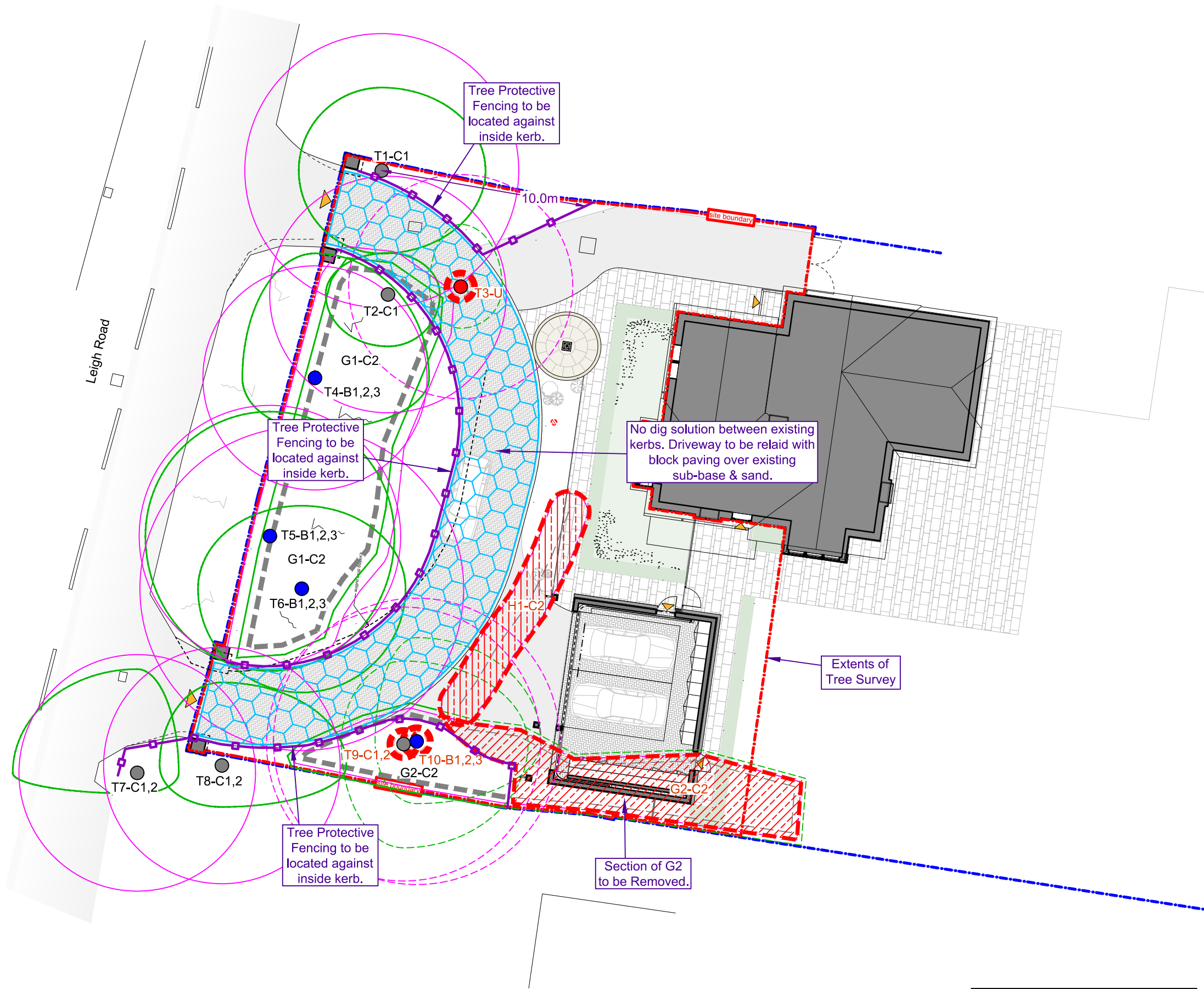
Project
6 Leigh Road, Havant

Drawing Title
Tree Constraints Plan

Scale 1:200 - A3	Date 09/12/2021	DB CS	CB MB
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Drawing Number MB211104-01	Rev A
--------------------------------------	-----------------

General Notes
Do Not scale off drawing - refer to the tree data schedule for accurate crown spread measurements.
Depictions of tree canopies are based on measurements taken to four cardinal compass points.
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Trees in such a condition that they can not realistically be retained as living trees in the context of the current land use for longer than 10 years.

Tree Groups
Shown as dashed centre/boundary line. Colour represents category (see above)

BS 5837:2012 Root Protection Area

Tree Protective Fencing

Trees for Removal

Hedges and Sections of Groups to be Removed

No dig Cellular Confinement System.


Arbor-Eco Consultancy

2 Daisy Lane, Locks Heath,
Hants. SO31 6RA.
Email: arborecoconsultancy@gmail.com
Telephone: 07542 093882

Client
ARCHIBUILD

Project
6 Leigh Road, Havant

Drawing Title
Tree Protection Plan

Scale 1:200 - A3	Date 10/12/2021	DB CS	CB MB
Drawing Number MB211104-01	Rev A		

All vegetation will be subjected to pruning works where necessary.

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APPENDICES

APPENDIX 1:	Table A1.1 – Tree Survey Schedule
APPENDIX 2:	Table A2.1 – Root Protection Areas of Category A, B and C Trees
APPENDIX 3:	Headings for Tree Protection Signs and Example Sign
APPENDIX 4:	Tree Protection Barriers (Default and Variant)

APPENDIX 1

Table A1.1 – Tree Survey Schedule

Tree No.	Species	No. Stems	Diam (mm)	H't (m)	Hft 1 st Branch (m)	Branch Spread (m)				Crown Clearance (m)				Age	Phys Cond	Struc Cond	Est. Remain Contrib (Years)	Cat	Comments	Preliminary Management Recommendations
						N	E	S	W	N	E	S	W							
1	Portuguese Laurel	3	<u>550</u>	7.0	0.0 S	4.0	5.0	4.0	4.0	<u>1.0</u>	<u>2.0</u>	<u>2.0</u>	<u>3.0</u>	OM	F	F	10+	C1	- Bark wounds to stem occluding. - Growing on raised embankment 1.0 m above driveway level. - Trifurcated at ground level. - Artificial surfaces within RPA. - Poor past management with decay at old pruning points.	Crown lift over driveway entrance; see Table 3.1.
2	Lawson Cypress	1	470	17.0	4.0 E	2.0	2.5	2.5	3.0	5.0	2.0	7.0	4.0	M	F	F	10+	C1	- Growing on raised embankment. - Bifurcated at 4.0 m above ground level. - Tight fork with included bark. - Artificial surfaces within RPA.	-
3	Lawson Cypress	1	440	15.0	3.0 W	3.0	2.0	2.0	1.5	2.0	2.0	2.0	2.0	M	P	F	<10	U	80 % of leaf cover is dead (possible drought). - Artificial surfaces within RPA. - Growing on raised embankment.	Advise removal on grounds of good arboricultural management.
4	Eucalyptus sp.	1	430	21.0	5.0 N	6.0	5.5	2.5	3.5	4.0	5.0	8.0	9.0	EM	F	G	20+	B1,2,3	- Artificial surfaces within RPA. - Growing on raised embankment. - Asymmetrical crown due to pressure from adjacent tree.	-
5	Common Lime	1	<u>520</u>	22.0	4.0 N	6.0	6.0	6.5	6.0	3.0	6.0	4.0	2.0	M	G	G	20+	B1,2,3 Int	- Artificial surfaces within RPA. - Growing on raised embankment. - Suckers at base of stem restricted access to survey. - Bifurcated at 2.0 m above ground level.	Remove suckers at base to facilitate future inspections.
6#	Yew	2	<u>640</u>	9.0	2.0 N	4.0	5.0	5.0	5.0	2.0	2.0	2.0	2.0	M	F	G	20+	B1,2,3	- Growing on raised embankment. - Artificial surfaces within RPA. - Asymmetrical crown due to pressure from adjacent tree. - Bifurcated at 1.0 m above ground level. - Phototropically weighted to south-east with low crown density beneath canopy of T5.	-

Table A1:1 Tree Survey Schedule (continues)

Tree No.	Species	No. Stems	Diam (mm)	H't (m)	Hft 1 st Branch (m)	Branch Spread (m)				Crown Clearance (m)				Age	Phys Cond	Struc Cond	Est. Remain Contrib (Years)	Cat	Comments	Preliminary Management Recommendations
						N	E	S	W	N	E	S	W							
7	Sycamore	1	<u>470</u>	16.0	2.0 E	5.0	2.0	1.0	6.0	4.0	4.0	4.0	4.0	M	F	F	10+	C1,2	- Growing on raised embankment. - Artificial surfaces within RPA. - Off-site tree. - Possibly self-set due to position in landscape. - Bifurcated at 2.0 m above ground level. - Tall and etiolated. - Asymmetrical crown due to pressure from adjacent tree.	-
8	Bay	2	<u>460</u>	17.0	0.0 S	4.0	6.0	2.0	3.0	0.0	0.0	0.0	0.0	M	F	F	10+	C1,2 Int	- Off-site tree. - Bifurcated at ground level. - Restricted access prevented detailed assessment. - Growing on raised embankment. - Artificial surfaces within RPA. - Tall and etiolated. - Asymmetrical crown due to pressure from adjacent tree.	-
9	Yew	1	<u>550</u>	9.0	1.5 W	4.0	6.0	<u>5.0</u>	3.0	3.0	2.0	2.0	4.0	M	F	G	10+	C1,2 Int	- Tall and etiolated. - Asymmetrical crown due to pressure from adjacent tree. - Growing on raised embankment. - Artificial surfaces within RPA. - Ivy on stem and in crown limited access to survey.	Sever ivy at base of stem.
10	Lawson Cypress	1	<u>560</u>	23.0	5.0 S	5.0	6.0	<u>3.0</u>	2.0	4.0	2.0	3.0	4.0	M	G	F	20+	B1,2,3 Int	- Ivy on stem and in crown limited access to survey. - Sparse crown – low crown density. - Growing on raised embankment. - Artificial surfaces within RPA.	Sever ivy at base of stem.
H1	Western Red Cedar	1	<u>50</u>	2.0	0.0 N	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	Y	F	G	10+	C2	- Growing on raised embankment. - Artificial surfaces within RPA.	-
G 1	Mixed Species	1	<u>50</u>	5.0	0.0 S	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	Y EM M	F	F	10+	C2	- Growing on raised embankment. - Artificial surfaces within RPA. - Managed border of shrubs and understorey vegetation. - Low hanging branches over driveway.	Crown lift – see Table 3.1.

Table A1:1 (cont'd) Tree Survey Schedule (continues)

Tree No.	Species	No. Stems	Diam (mm)	H't (m)	Hft 1 st Branch (m)	Branch Spread (m)				Crown Clearance (m)				Age	Phys Cond	Struc Cond	Est. Remain Contrib (Years)	Cat	Comments	Preliminary Management Recommendations
						N	E	S	W	N	E	S	W							
G2	Mixed Species	1	70	5.0	0.0 S	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	Y EM M	F	F	10+	C2	- Growing on raised embankment. - Artificial surfaces within RPA. - Managed border of shrubs and understorey vegetation. - Low hanging branches over driveway.	Crown lift – see Table 3.1.
Key <u>Age Class</u> Y: Young = tree within first third of average life expectancy EM: Early mature = tree within second third of average life expectancy M: Mature = tree within final third of average life expectancy OM: Over mature = tree beyond average life expectancy V: Veteran = shows signs of retrenchment and in decline. D: Dead.						<u>Physiological Condition</u> G: Good = no health problems F: Fair = symptoms of ill health that may be remedied P: Poor = poor health D: Dead <u>Structural Condition</u> G: Good = no structural defects F: Fair = remedial structural defects P: Poor = significant structural defects D: Dead										<u>000</u> : Estimated measurement due to access restrictions RPA: Root Protection Area Major deadwood: branches in excess of 50 mm diameter Minor deadwood: branches/twigs less than 50 mm diameter Int: Interim category due to access restrictions. #: Trees subject to Tree Preservation Order				

Table A1:1 (cont'd) Tree Survey Schedule

APPENDIX 2

Table A2.1 – Root Protection Areas of Category A, B and C Trees

Tree No.	Species	Diam (mm)	Approximate Root Protection Radius (m)	Root Protection Area (m ²)
1	Portuguese Laurel	<u>550</u>	6.6	137
2	Lawson Cypress	470	5.7	102
3	Lawson Cypress	440	5.4	92
4	Eucalyptus sp.	430	5.4	92
5	Common Lime	<u>520</u>	6.3	124
6	Yew	<u>640</u>	7.8	191
7	Sycamore	<u>470</u>	5.7	102
8	Bay	<u>460</u>	5.7	102
9	Yew	<u>550</u>	6.6	137
10	Lawson Cypress	<u>560</u>	6.9	150
H1	Western Red Cedar	<u>50</u>	0.9	3
G1	Mixed Species	<u>50</u>	0.9	3
G2	Mixed Species	<u>70</u>	0.9	3
Key: <u>000</u> : estimated dimensions due to access restrictions *: Average measurement taken around centre of group				

Table A2-1: RPA and Approximate Root Protection Radius of Category A, B and C Trees Surveyed

APPENDIX 3

Headings for Protective Barrier Notices and Example Sign

Root Protection Area (RPA) Model Notice

DON'T excavate within this area

DON'T use any form of mechanical plant with this area

DON'T store materials, plant or equipment within this area

DON'T move plant or vehicles within this area

DO contact the Local Authority Arboricultural Officer or owner of the tree if excavation within this area is unavoidable

DO protect any exposed roots uncovered within this area with dry sacking

DO backfill with a suitable inert granular and top soil material mix as soon as possible on completion of work

ANY WORK in this area requires permission from the Local Authority Arboricultural Officer



**PROTECTIVE FENCING. THIS
FENCING MUST BE
MAINTAINED IN ACCORDANCE
WITH THE APPROVED PLANS
AND DRAWINGS FOR THIS
DEVELOPMENT.**



**TREE PROTECTION AREA
KEEP OUT !**

**(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY
PLANNING CONDITIONS AND/OR ARE THE SUBJECTS OF A
TREE PRESERVATION ORDER.
CONTRAVENTION OF A TREE PRESERVATION ORDER MAY
LEAD TO CRIMINAL PROSECUTION**

**ANY INCURSION INTO THE PROTECTED AREA MUST BE
WITH THE WRITTEN PERMISSION OF THE LOCAL
PLANNING AUTHORITY**

APPENDIX 4

Details of Protective Barrier (Default and Variant)

Figure 2 Default specification for protective barrier

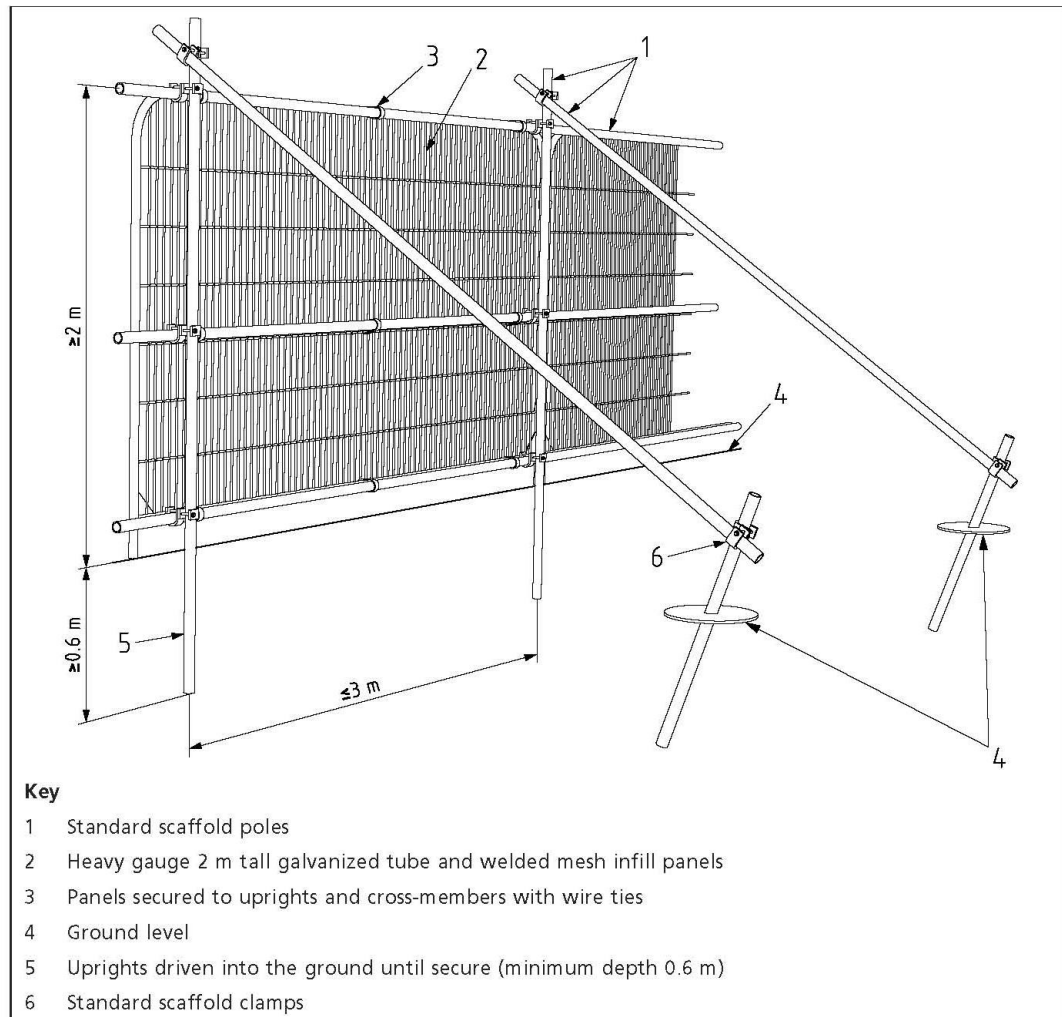


Figure 3 Examples of above-ground stabilizing systems

