

Soil amelioration

To improve the soil structure in the rooting area, the macropores will be reopened via a process known as de-compaction. This process will also help to reinstate the correct soil biology where it may be lacking (compacted soil will have a dramatically reduced Soil Food Web). Compressed air will be injected to a depth of 600mm at 1m spacings, by way of a perforated soil probe (e.g. Terravert; Vogt etc.) to create fissures within the soil profile. These fissures will be filled with the soil to create fissures within the soil. A mixture of Terramol and enriched biochar will then be injected into the newly fissured soil, again using the same high-pressure system. The Terramol will have the effect of physically holding open the new gaseous exchange pathways. Application rates will be determined by the specific equipment used and will be specified by the specialist contractor.

Site investigations

Site investigations are to be undertaken within the RPAs of retained trees to determine the size, depth and location of any roots that may be present for the purpose of informing foundation design.

All excavation within the RPAs are to be initially undertaken to a minimum depth of 800mm deep for any excavation or to the full depth of the proposed foundations, hard surfacing or underground services. The soil is to be loosened with the use of a fork or pick and then cleared with the aid of an air-spade and air-vac using a specialist arboricultural contractor; If an air-spade is not used and all excavations are to be undertaken using hand tools (forks, shovel, trowel, brush). Soil will be loosened with the aid of a fork or trowel and the soil removed from with the aid of a shovel. Where an air spade or specialist arboricultural contractor is not employed, all excavations are to be undertaken under direct arboricultural supervision. All roots are to be retained in situ and the project arborist will visit the site to recorded and photograph the depth, location, and size of any roots present; during this visit the project arborist may be able to cut specific roots with the use of a hand saw or secateurs. The edge of the excavation closest to the retained trees and all uncovered roots will be covered over with a minimum of two layers of damp hessian to prevent drying out, and where necessary be shuttered to prevent soil collapse or contamination. If appropriate soil beneath the depth of 800mm may be sheet piled with any deeper excavations being undertaken by a machine with an appropriate bucket under direct arboricultural supervision. If a decision is made for a machine to be used it must work form outside of the RPA or have appropriate ground protection in place to move and work upon.

Upon the completion of the site investigations all trial excavations are to be back filled with the original material or inert fill. It may be suitable to insert a root barrier in locations where the proposed roots are not present or are beginning to enter to prevent root activity within areas deemed to be root free.

'No Dig' Surfacing

Trees can be impacts by construction within the RPAs either through the direct damage caused by the removal of roots, compaction of the rooting environment or secondary damage such as poisoning through leaks and spills (oils, fuels, etc.) or through de-icing (road salt, etc.).

Proposed hard surfacing within the RPAs of retained trees is to be designed so that it can be situated above the existing soil level and to minimise any adverse impact upon the tree RPAs. The use of traditional foundations can result in excessive root loss, through direct removal of roots during excavation and by compaction of the soil beneath the excavation, as such this 'traditional' type of foundation should be avoided.

When designing hard surfacing that is to be situated within RPAs, the design team need to pay particular attention to the proposed usage (pedestrian, domestic traffic, delivery vans, Emergency vehicles, HGVs etc.), the existing and proposed levels of hard surfacing and finished floor levels, edging types and details, proximity to tree trunks and surface rooting, contamination capture, SUDs, etc.

Possible sub-bases (foundations systems) for hard surfacing situated within the RPAs of retained trees could include:

- A proprietary system such as a multi-dimensional confinement system (Cellweb TRP or similar);
- Engineered solution such as a road deck, bridge, etc.

An engineered solution is likely require a level of excavation for site specific investigations to locate roots to aid in foundation design so that a suitable foundation can be designed to avoid roots and for the installation the structure.

NB: The use of a multi-dimensional confinement systems and or an engineered solution will affect the finished level of the hard surfacing by raising the levels and needs to be taken into consideration when designing foundations and setting the finished floor levels of adjacent buildings.

Utility apparatus

Underground utility apparatus

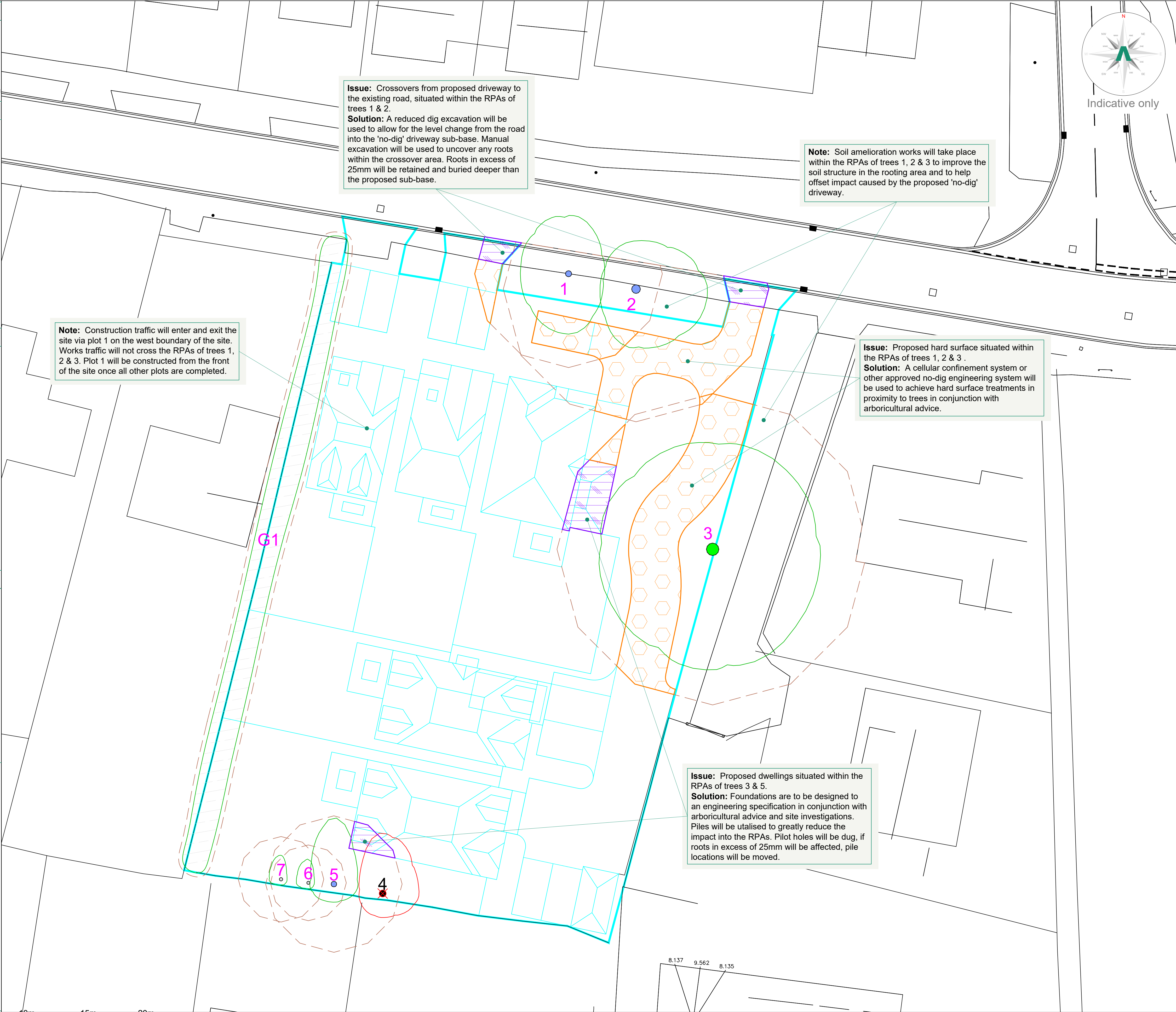
Mechanical trenching for the installation of underground apparatus and drainage serves any roots present and can change the local hydrology in a way that adversely affects the health of the tree. For this reason, particular care should be taken in the route and methods of installation of all underground apparatus. Wherever possible, apparatus should be routed outside of RPAs. Where this is not possible, it is preferable to keep apparatus together in common ducts, all inspection chambers should be sited outside of the RPAs.

Where underground apparatus is to pass within the RPAs, detailed plans showing the proposed route should be drawn up in conjunction with the project arboriculturist. In such cases trenchless insertion methods should be used with entry and retrieval pits being located outside of the RPAs. If this option is not feasible and providing roots can be retained and protected excavations should be undertaken using hand held tools (air-spade, forks, shovels) or a combination of trenchless and manual excavation (broken trench).

Any design and installation should be undertaken in accordance with the National Joint Utilities Guidelines (NJUG).

Above-ground utility apparatus

Above-ground apparatus(including CCTV cameras and lighting) should be sited to avoid the need for detrimental tree pruning, as such the current and future crown size of the tree should be assessed. Tree branches can be pruned back with care to provide space, though it is not appropriate for repetitive and significant tree work to bean initial design solution unless this is a suitable management outcome for the tree. Any pruning should be undertaken in accordance with BS3998:2010



Arboricultural Impacts

Impacts	Nos. of trees
Trees to be removed	1
Groups / Hedges to be removed (Partial removal of groups)	0 (0)
Trees with proposed incursions into RPAs	4
Groups / Hedges with proposed incursions into RPAs	0
Trees that will require pruning	0
Groups / Hedges that will require pruning	0
Trees to be transplanted	0
Groups / Hedges to be transplanted	0

No.	Species	Proposed structure	Incursion
1	Sycamore	Crossover & Driveway	RPA
2	Lime	Crossover & Driveway	RPA
3	Oak	Driveway & Dwelling	RPA
5	Oak	Dwelling	RPA

Tree Work Schedule

No.	Species	Works	Category
1	Sycamore	Soil amelioration, Compressed air and biochar injections into soil	B12
2	Lime	Soil amelioration, Compressed air and biochar injections into soil	B12
3	Oak	Soil amelioration, Compressed air and biochar injections into soil	A12
4	Oak	Fell tree to ground level; grind out stump	C1

All tree work is to be undertaken in accordance with British Standard BS 3998:2010 Tree work - Recommendations. All arising's are to be removed and the site is to be left as found. Care is to be taken of the ground around retained trees to make sure that it does not become compacted as a result of tree surgery operations. No equipment or vehicles such as timber lorries, tractors, excavators or cranes shall be parked or driven beneath the crowns of any retained trees, to prevent subsequent compaction and root death.

No. of individual trees to be removed

U	A	B	C
0	0	0	1

No. of groups / hedges to be removed

U	A	B	C
0 (0)	0 (0)	0 (0)	0 (0)

() = Partial removal of a groups

Arboricultural Method Statement

All tree work is to be undertaken in accordance with British Standard BS 3998:2010 Tree work - Recommendations. All arising's are to be removed and the site is to be left as found. Care is to be taken of the ground around retained trees to make sure that it does not become compacted as a result of tree surgery operations. No equipment or vehicles such as timber lorries, tractors, excavators or cranes shall be parked or driven beneath the crowns of any retained trees, to prevent subsequent compaction and root death.

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Project:

The Bus,
The Avenue,
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Client:

Mayfair Hayling Island Ltd

Drawing:

Arboricultural Impact Assessment

Based on:

1885-01

Drawing No:

Arbtech AIA 01

Rev:

Date:

Sep 2020

Scale:

1:150 @ A1

Drawn:

AJN

Key:

Tree Nos.	1	Tree Canopies	Trunks	
RPAs		Category 'A' trees	Category 'B' trees	
Category 'C' trees		Category 'C' groups	Trees to be removed	
Existing Site		Proposed Site	Incursion - Structures	
Incursion - Hard surfacing				

All dimensions should be checked on site. No dimensions are to be scaled from this drawing. Please refer to any discrepancies listed. Arbtech Consulting Ltd. cannot be held responsible for inaccuracies in the base drawing in which this plan is based. This drawing is designed to reflect the principles of the layout or design only, and relates only to the protection of retained trees. This drawing is not to be read as a definitive part of the engineering or construction design or method statement. An architect or structural engineer should be consulted over any matters of construction, detailing or specification and for any standards or regulatory requirements relating to proposed structures, hard surfacing or underground services. This drawing was produced in colour - a monochrome copy should not be relied upon.

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