Tree Categories

Trees are categorised in accordance with the cascade chart in Table 1 of the British Standard BS 5837:2005 'Trees in relation to construction - Recommendations'

Category 'U' - Trees in such condition that they cannot realistically be retained as living trees in context of the current land use for longer than 10 years.
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 150mm.

Root Protection Area

In order to avoid damage to the roots or rooting environment of retained trees, the Root Protection Areas (RPAs) should be plotted around each of the category A, B and C trees. This is a minimum area in m^2 which should be left undisturbed around each retained tree.

The RPA is calculated using the British Standard BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations.

The calculated RPA is capped to $707m^2$, which is the equivalent to a circle with a radius of 15m. Where there appears to be restrictions to root growth the root protection area is reshaped to more accurately reflect the likely distribution of the roots.

Foundations within RPAs

The use of traditional strip foundations can result in excessive root loss and as such should be avoided.
Designs for foundations that would minimize the adverse impact upon trees soul include particular attention to the existing levels, proposed finished levels and cross sectional details. Site specific and specialist advice should be sought from the project engineers and arboriculturist.

Root damage can be minimized by using:

- Piles with site investigation used to be determined their optimal location whilst avoiding damage to roots important for the stability of the tree, by means of hand tools or compressed air soil displacement, to a minimum depth of 600mm;
- Beams, laid at or above ground level, and cantilevered as necessary to avoid tree roots identified by site investigation.

Where a slab for minor structures (e.g. shed base) is to be formed within the RPA, it should bear on the existing ground level, and should not exceed an area greater than 20% of the existing unsurfaced ground.

Slabs for larger structures (e.g. dwellings) should be constructed with a ventilated air space between the underside of the slab and the existing soil surface (to enable gas exchange and venting through the soil surface. In such cases, a specialist irrigation system should be employed (e.g. roof run-off redirected under the slab). The design of the foundation should take into account of the effect on the load bearing properties of the underlying soil from the redirected roof run-off. Approval in principle for a foundation that relies on topsoil retention and roof run-off under the slab should be sought from building control authority prior to this approach being relied upon.

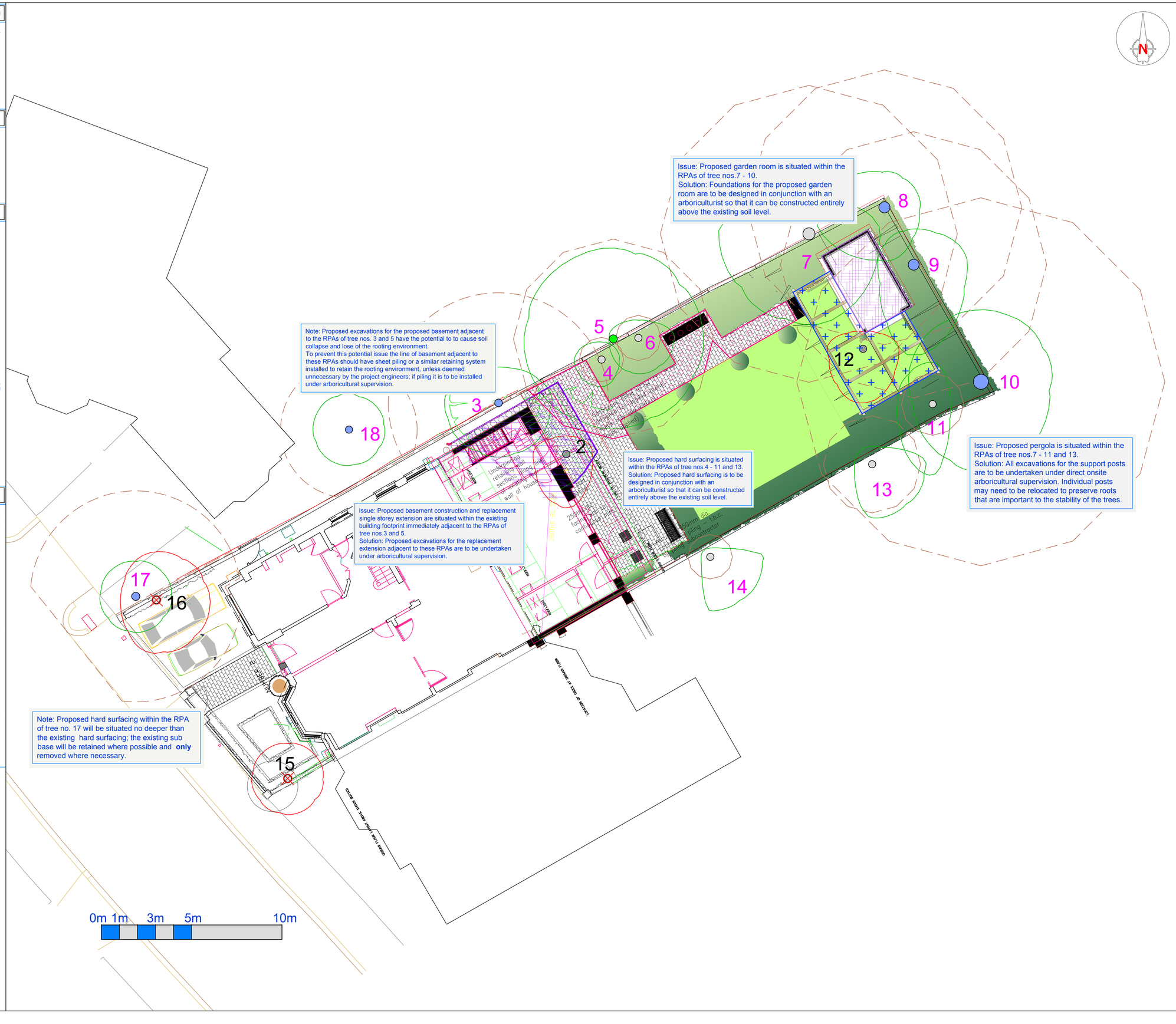
Where piling is to be installed near to trees, the smallest practical pile diameter should be used, as this reduces the possibility of striking major tree roots, and reduces the size of the rig required to sink the piles. If a piling mat is required, this should conform to the parameters for ground boarding. Use of the smallest practicle piling rig is also important where piling within the branch spread is proposed, as this can reduce the need for access facilitation pruning. The pile type should be selected bearing in mind the need to protect the soil and adjacent roots from the potentially toxic effects of uncured concrete, e.g. sleeved bored piles or screw piles.

This information is compliant with British Standard BS5837:2012 Trees in relation to design demolition and construction - Recommendations, section 7.5 Special engineering for foundations within the RPA.

Hard surfacing within RPAs

Multi-dimmensional confinement system.
Existing vegetation may be removed with hand tools or sprayed with an approved non residual herbicide such as 'Glyphosate'. The new hard surfacing will be constructed using a 'No Dig' surfacing situated entirely above the existing soil surface and where needed using a proprietary cellular confinement system (GeoWeb or similar) laid over a bi-axel geo-grid (tensar TriAx or similar). Proir to this any small hollows on the surface may be filled with clean sharp sand (not builders sand) to a maximum depth of 150mm. The 'GeoWeb' is to be back filled by hand with a no-fines aggregate of 20mm - 30mm. The area of 'GeoWeb' will be covered with a permeable geotextile fabric and the finished wearing course laid on top. Edge supports of an appropriate size and strenght should be set above ground level and secured with haunching or steel pins driven into the ground. the outer edge of the supports may be banked up with clean top soil.
Road deck system.
Where the area of the RPA(s) is covered by the proposed hard surfacing exceeds 20% of the total area of the uncovered RPA.
It is proposed that the section of the proposed roadway/drive will be suspended entirely above the existing ground level. This will be achieved by constructing the suspended road platform by the minimum number of mini pile required to provide a stable structure.
The design, materials and methodology of the 'road deck' are to be undertaken to an engineering specification in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected to; however the following principles should be followed:

a. The road deck is to be suspended entirely above the existing ground level.
b. Prevention of the void beneath the road deck being inhabited by rodents or other small mammals.
c. A watering system is to be designed to either capture rain water and direct it onto the soil below the road deck or for the roadway to be permeable. These systems must take into account that if the surface is to be subjected to de-icing salt, an impermeable barrier or filtration system will be required to prevent contamination of the rooting area.
d. Pile locations are to be designed in conjunction with advice of the project arboriculturist and as identified during the site investigations to allow for the retention of roots that are important to the trees stability.
e. Piles should be lined and ground covered to prevent contamination of the rooting environment by concrete effluent run off.



Arboricultural Impacts

Impacts	Nos. of trees
Trees to be removed	4
Groups to be removed	0
Trees with proposed incursions into RPAs	11
Groups with proposed incursions into RPAs	0
Trees that will require pruning	6
Groups that will require pruning	0

Arboricultural Impacts

No.	Species	Proposed structure	Incursion
3	Lime	Basement & hard surfacing	RPA
4	Holly	Hard surfacing	RPA / Canopy
5	Norway maple	Basement & hard surfacing	RPA
6	Holly	Hard surfacing	RPA / Canopy
7	Maidenhair tree	Garden room, hard surfacing & pergola	RPA
8	Lime	Garden room, hard surfacing & pergola	RPA
9	Lime	Garden room, hard surfacing & pergola	RPA
10	Lime	Garden room, hard surfacing & pergola	RPA
11	Holly	Hard surfacing & pergola	RPA / Canopy
13	Laburnum	Hard surfacing & pergola	RPA
17	Silver birch	Replacement hard surfacing	RPA

Tree Work Schedule

No.	Species	Works	Category
2	Common elder	Fell to ground level; remove stump	C2
3	Lime	Crown lift to 8m over site	B1
4	Holly	Crown lift to 3.5m above hard surfacing	C1
5	Norway maple	Crown lift to 6m over site	A1
6	Holly	Crown lift to 3.5m above hard surfacing	C1
11	Holly	Crown lift to 4m	C1
12	Hawthorn	Fell to ground level; remove stump	B1
15	Bay	Fell to ground level; remove stump	C1
16	Silver birch	Fell to ground level; grind out stump	C1
17	Silver birch	Crown lift to 4m over site	B1

All tree work is to be undertaken in accordance with British Standard BS 3998:2010 Tree work - Recommendations.
All arisings 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 Trees to be Removed

U	A	B	C
0	0	1	3

Arboricultural Method Statement

All tree work is to be undertaken in accordance with British Standard Please refer to Arbtech Consulting Ltd. Tree Schedule, Arboricultural Method Statement and Tree Protection Plan, for full details on all surveyed trees and how all aspects of the development maybe implemented without detriment to retained trees.

ARBTECH Consulting Limited

Project:
2 Akenside Road,
London,
NW3 5BS.

Client:
Georgia Masters

Drawing:
Arboricultural Impact Assessment

Based on:
P13 - P - 01, 15773 &
Akenside Road Concept Plan

Drawing No:	Rev:
Arbtech AIA 01	B

Date:	Scale:	Drawn:
Nov 2016	1:100 @ A1	AST

Key:

Tree Nos.:	1	Tree Canopies:		Trunks:	
RPAs:		Category 'U' trees:		Category 'A' trees:	
Category 'B' trees:		Category 'C' trees:		Trees to be removed:	16
Incursions - extension & basement:		Incursions - garden room:		Incursions - hard surfacing:	
Incursions - pergola:					