Site Investigations MAY 2018 Root Details

Root No.	Root diameter (mm)	Root depth (mm)
RG1	10-20	320-600
RG2	5-15	200-500
RG3	5-25	10-350
R14	60	700
R15	35	470
R16	25	470
R17	30	940

Site Investigations JAN 2017 Root Details

Root No.	Root diameter (mm)	Root depth (mm)
R1	65	400
R2	35	550
R3	26	surface - 650
R4	25	200
R5	30	300
R6	37	500
R7	40	100
R8	34	600
R9	25	250
R10	74	surface - 700
R11	65	550
R12	70	500
R13	34	600
R14	36	600
R15	28	50
R16	34	surface

Arboricultural Impacts

Impacts	Nos. of trees
Trees to be removed	11
Groups / Hedges to be removed (Partial removal of groups)	0 (0)
Trees with proposed incursions into RPAs	2
Groups / Hedges with proposed incursions into RPAs	1
Trees that will require pruning	0
Groups / Hedges that will require pruning	1
Trees to be transplanted	0
Groups / Hedges to be transplanted	0

No.	Species	Proposed structure	Incursion
G2m	Sycamore	Level -5 structure	RPA
G2m	Sycamore	Level -4 wall and foot path	RPA
G2n	Sycamore	Level -4 wall and foot path	RPA
G2o	Common Ash	Level -5 structure	RPA
G2o	Common Ash	Level -4 wall and foot path	RPA
G2p	Sycamore	Level -5 structure	RPA
G2p	Sycamore	Level -4 wall and foot path	RPA
G2q	Sycamore	Level -4 wall and foot path	RPA
G2r	Sycamore	Level -5 structure	RPA
G2r	Sycamore	Levels -4 & -3 wall and foot path	RPA
G2s	Sycamore	Level -5 structure	RPA
G2s	Sycamore	Levels -4 & -3 wall and foot path	RPA
G2t	Sycamore	Level -5 structure	RPA
G2t	Sycamore	Levels -4 & -3 wall and foot path	RPA
G2u	Sycamore	Level -5 structure	RPA
G2u	Sycamore	Levels -4 & -3 wall and foot path	RPA
6	Sycamore	Level -5 structure	RPA
6	Sycamore	Level -2 wall and foot path	RPA
7	Common Lime	Level -5 structure	RPA
7	Common Lime	Level -2 wall and foot path	RPA

Arboricultural Impacts - RPAs (Area)

No.	Species	RPA	Incursion	
			(m²)	(%)
G2m	Sycamore	131.9	6.9	5.2
G2m	Sycamore	131.9	4.2	3.2
G2n	Sycamore	53.2	2.8	5.3
G2o	Common Ash	250.9	24.7	9.8
G2o	Common Ash	250.9	22.3	8.9
G2p	Sycamore	256.2	5.9	2.3
G2p	Sycamore	256.2	27.8	10.8
G2q	Sycamore	163.3	6.2	3.8
G2r	Sycamore	108.6	6.2	5.7
G2r	Sycamore	108.6	14.1	13.0
G2s	Sycamore	99.9	6.1	6.1
G2s	Sycamore	99.9	13.6	13.6
G2t	Sycamore	72.4	2.2	3.0
G2t	Sycamore	72.4	9.8	13.5
G2u	Sycamore	179.4	6	3.3
G2u	Sycamore	179.4	14.6	8.1
6	Sycamore	117.7	1.3	1.1
6	Sycamore	117.7	17.2	14.6
7	Common Lime	191.1	0.7	0.4
7	Common Lime	191.1	23.7	12.4

Tree Work Schedule

No.	Species	Works	Category
G2m	Sycamore	Prune: Repeat 'high pollard' regime.	B2
G2n	Sycamore	Prune: Repeat 'high pollard' regime.	B2
G2o	Common Ash	Prune: Repeat 'high pollard' regime.	B2
G2p	Sycamore	Prune: Repeat 'high pollard' regime.	B2
G2q	Sycamore	Prune: Repeat 'high pollard' regime.	B2
G2r	Sycamore	Prune: Repeat 'high pollard' regime.	B2
G2s	Sycamore	Prune: Repeat 'high pollard' regime.	B2
G2t	Sycamore	Prune: Repeat 'high pollard' regime.	B2
G2u	Sycamore	Prune: Repeat 'high pollard' regime.	B2
1	Swedish Whitebeam	Fell tree to ground level; remove stump.	C1
2	Plum	Fell tree to ground level; remove stump.	C1
3	Monterey Cypress	Fell tree to ground level; remove stump.	B1
5	Sycamore	Fell tree to ground level; remove stump.	B1
8	Leyland Cypress	Fell tree to ground level; remove stump.	C1
9	Magnolia	Fell tree to ground level; remove stump.	C1
10	Common Ash	Fell tree to ground level; remove stump.	B1
11	Common Laburnum	Fell tree to ground level; remove stump.	C1
12	Pissards Plum	Fell tree to ground level; remove stump.	C1
13	Pissards Plum	Fell tree to ground level; remove stump.	C1
15	Common oak	Fell tree to ground level; remove stump.	B2

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	4	7

No. of groups / hedges to be removed

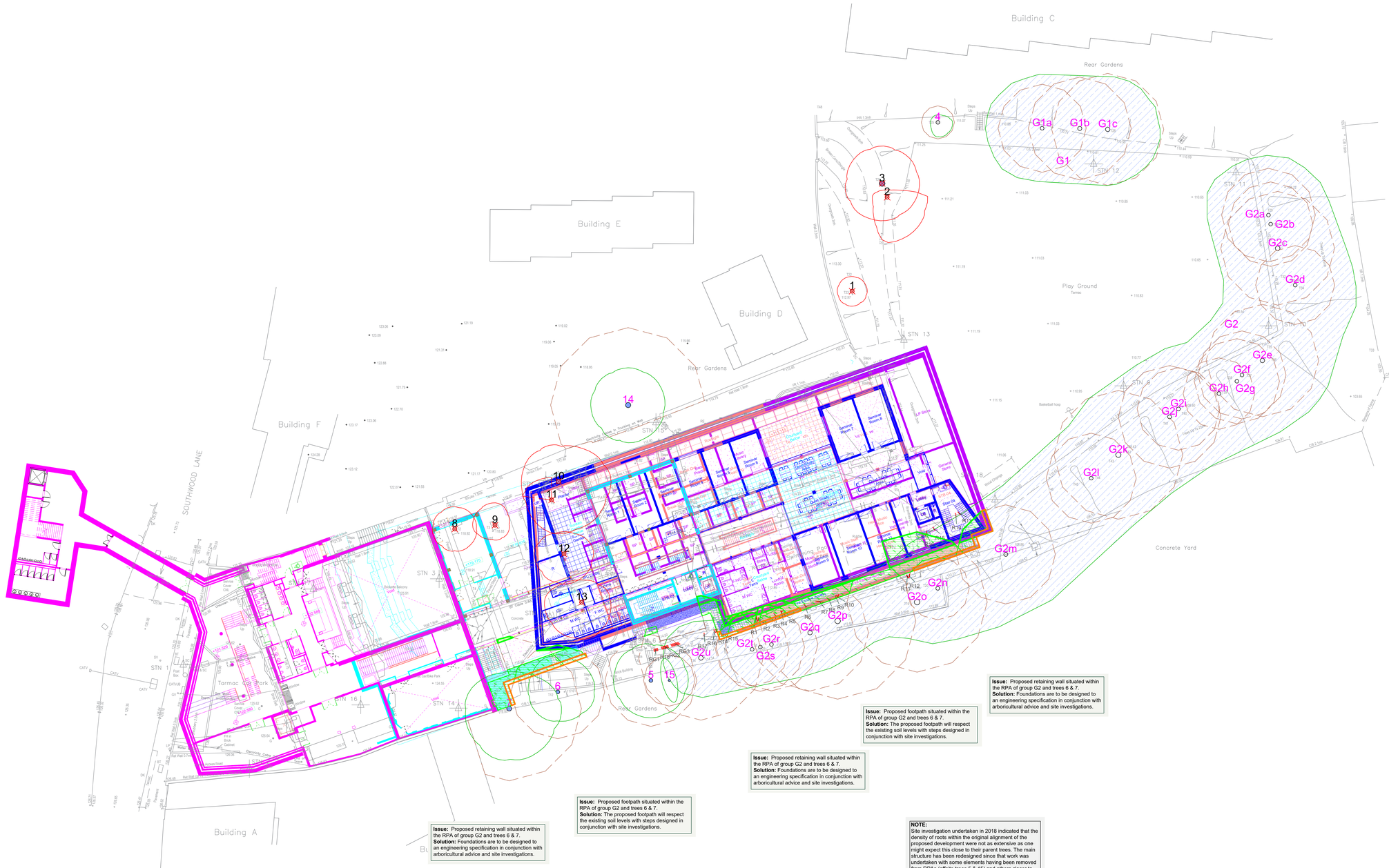
U	A	B	C
0 (0)	0 (0)	0 (0)	0 (0)

() = Partial removal of a groups

Arboricultural Method Statement

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

NOTE: Nominal root protection areas (RPAs) have been modified to consider existing site features such as buildings, retaining walls and the in-ground swimming pool as barriers to root development.



Indicative only

0m 1m 3m 5m 10m 15m 20m

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 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 spoil 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.

Foundations within RPAs

The use of traditional strip foundations to construct the retaining wall may result in excessive root loss and as such should be avoided.
Designs for foundations that would minimize the adverse impact upon trees should 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 minimised 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 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 practical 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.

Utility apparatus

Underground utility apparatus
Mechanical trenching for the installation of underground apparatus and drainage severs 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 rout 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

Rev:	Date:	Notes:

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Project:
Dyne House
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N6 5EE

Client:
Highgate School

Drawing:
Arboricultural Impact Assessment

Based on:
A/HS-DH3/2425 Rev.L;
A/HS-DH3/2424 Rev.L;
A/HS-DH3/2423 Rev.L;
A/HS-DH3/2422 Rev.L;
A/HS-DH3/2421 Rev.L;
A/HS-DH3/2420 Rev.L;

Drawing No:	Rev:	
Arbtech AIA 01	--	
Date:	**Scale:**	**Drawn:**
Oct 2022	1:200 @ A0	JCH

Key:
Tree Nos.: 1 | Tree Canopies: | Trunks:
RPAs: | Category 'B' group: | Category 'B' trees:
Category 'C' trees: | Roots over 25mm 2016 investigation: R1 | Root mass 2016 investigation: RG1
Trees to be removed: 8 | Existing Site (Topo.): | Proposed level -1:
Proposed level -2: | Proposed level -3: | Proposed level -4:
Proposed level -5: | Incursion - Structures: | Site investi.:

All dimensions should be checked on site. No dimensions are to be scaled from this drawing.
Please notify us of any discrepancies found. Arbtech Consulting Ltd. cannot be held responsible for inaccuracies in the base drawing or 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 trees on site.
This drawing is not to be read as a definitive part of the engineering or construction designs or method statement. Arbtech Consulting Ltd. cannot be held responsible for inaccuracies in engineering or detailing or specification and for any standards or regulatory requirements relating to proposed structures, hard surfacing or underground services.
The drawing was produced in colour – a monochrome copy should not be relied upon.

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