Protective Fencing

To be erected prior to the commencement of all works on site, and retained in place throughout construction.
Default specification: To comprise either 2.4m wooden site hoarding; or a 2.3m high scaffolding framework comprising of vertical and horizontal framework, well braced to resist impacts, with uprights to be spaced at a maximum of 3.0m intervals and driven into the ground by a minimum of 600mm. On to this, standard anti-climb welded mesh panels are to be securely fixed to each other with at least two scaffold clamps and to the scaffold framework with wire.
Secondary Specification: To comprise of 2m tall welded mesh panels on rubber or concrete feet. Panels are to be joined together using a minimum of two anti-tamper couplers, installed so that they can only be removed from inside the fence. The panels should be supported on the inner side by stabilizer struts, which should should be attached to a base plate and secured with ground pins.
All weather notices should be erected at regular intervals on the weld mesh panels with words such as "Tree Protection Area - Keep out".

Tree Protection Area

KEEP OUT

Do **not** move this fence

(TOWN & COUNTRY PLANNING ACT 1990)
TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND/OR ARE THE SUBJECT 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

Arbtech Consulting Limited.
Unit 3, Well House Barn, Chester Road, Chester, CH4 0DH
https://arbtech.co.uk - 01244 661170

Ground protection

New temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil.

Note The ground protection might comprise one of the following:

a) for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100mm depth of woodchip), laid onto a geotextile membrane;
b) for pedestrian-operated plant up to a gross weight of 2t, proprietary inter-linked ground protection boards placed on top of a compression-resisiatnt layer(e.g.150mm depth of woodchip), laid onto a geotextile membrane;
c) for wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. proprietary system 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.

For situations other than those described in a) or b), the ground boarding is to be designed by a suitably qualified person to an engineering specification in conjunction with arboricultural advice, to be abole to support the expected loading to be placed upon it.

In all cases, the objective of the ground boarding is to avoid compaction ofthe soil beneath, so that tree root function remains unimpaired.

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 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.

Supervised Excavation

All excavations within and immediately adjacent to RPAs are to be undertaken under direct on-site arboricultural supervision.

Any roots that are to be cut will be cleanly severed by the project arboriculturist using a suitable hand saw or secateurs. The edge of all excavation closest to the retained trees will be covered over with damp hessian to prevent drying out, and where necessary be shuttered to prevent soil collapse or contamination by concrete.
If appropriate soil beneath the depth of the excavation may be sheet piled, tegular piled or have individual piles installed.

Manual excavation:
Excavations within the RPAs will be initially undertaken by hand under direct on-site arboricultural supervision to a minimum of 600mm deep (to be confirmed by the project arboriculturist), whether its is for proposed foundations, hard surfacing or underground services. The soil is to be loosened with the use of a fork or pick and or air-spade and then cleared with a shovel and or the aid of an air-spade and air-vac.
Mechanical excavation:
Excavation within the RPAs will consist of a mixture of mechanical and manual excavation.
Where an excavator is used it will be fitted with a suitably sized toothless grading bucket; using a grading / scrapping motion rather than digging. During each motion the excavator will not be permitted to removing no more than 10 - 20mm deep of soil in any any one pass.
If any roots are discovered, mechanical excavation will immediately be stopped and manual excavation will take over to expose the root. Upon the root being uncovered and either severed or protected the excavations can then continue.
Any excavator or other machinery that is to be used will be situated outside of the RPAs of all retained trees or on top of a suitable ground protection.
Where an excavator or any other machinery is to be used within RPAs or beneath canopies the project arboriculturist will clearly instruct the operator about what they want and expect to happen prior to any works may commence.

'No Dig' Surfacing

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 strength 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.
NOTE: The use of a multi-dimensional confinement system 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.

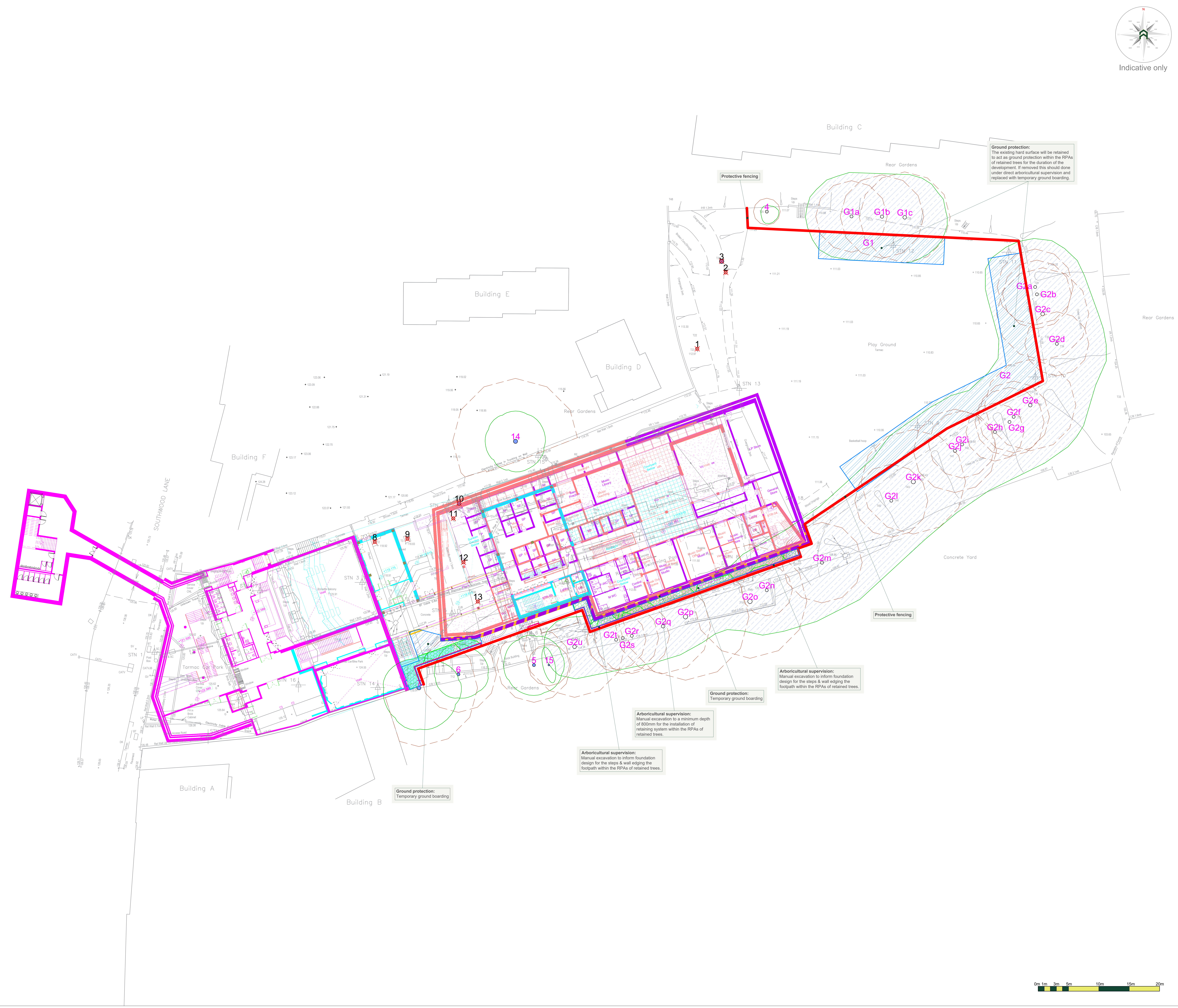
Arboricultural Supervision

The arboricultural consultant will be required to attend site to directly supervise all demolition and construction works that have to be undertaken within the root protection areas. This will include:

1. Pre-commencement site meeting.
2. Location of protective measures.
3. Supervised demolition of hard surfacing, kerb edging and foundations within RPAs of retained trees.
4. Relocation of tree protective measures from demolition to construction phase.
5. Pre-commencement site meeting (construction phase).
6. Supervised excavations for installation of TRS within RPAs of trees G2, 5 & 6.
7. Supervised excavations for site investigations to inform foundation design for the wall adjacent to the footpath within RPAs of tree G2, 5, 6 & 7.
8. Supervised excavations for installation of foundations for the wall adjacent to the footpath within RPAs of tree G2, 5, 6 & 7.
7. Installation of 'No Dig' hard surfacing within the RPAs of trees G2, 5, 6, & 7.
8. Any demolition and or excavations within or adjacent to RPAs, including foundations, hard surfacing or underground services (a non-exhaustive list).
9. Arboricultural sign off and removal of protective measures.

Arboricultural Method Statement

Please refer to Arbtech Consulting Ltd. Tree Schedule and Arboricultural Method Statement, for full details on all surveyed trees and how all aspects of the the development maybe implemented without determent to retained trees.



Ground protection:
The existing hard surface will be retained to act as ground protection within the RPAs of retained trees for the duration of the development. If removed this should done under direct arboricultural supervision and replaced with temporary ground boarding.

Arboricultural supervision:
Manual excavation to inform foundation design for the steps & wall edging the footpath within the RPAs of retained trees.

Ground protection:
Temporary ground boarding

Arboricultural supervision:
Manual excavation to a minimum depth of 800mm for the installation of retaining system within the RPAs of retained trees.

Arboricultural supervision:
Manual excavation to inform foundation design for the steps & wall edging the footpath within the RPAs of retained trees.

Ground protection:
Temporary ground boarding

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
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

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.

Rev:	Date:	Notes:
A	30/09/26	Amended side panel tables to match the Plan
B	01/10/26	Tree Work Schedule; summary tables

arbtech
Unit 3, Well House Barns, Chester, CH4 0DH
https://arbtech.co.uk, 01244 661170

Project:
Dyne House
Highgate School
London
N6 5EE

Client:
Highgate School

Drawing:
Tree Protection Plan - Construction Phase

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: Arbtech TPP 01 Con
Rev: B
Date: Oct 2022
Scale: 1:200 @ A0
Drawn: JCH

Key:

Tree Nos.:	1	Tree Canopies:	○	Trunks:	○
RPAs:	◌	Category 'B' group:	▨	Category 'B' trees:	●
Category 'C' trees:	●	Trees to be removed:	8 ⊗	Existing Site (Topo.):	—
Proposed level -1:	—	Proposed level -2:	—	Proposed level -3:	—
Proposed level -4:	—	Proposed level -5:	—	Protective fencing:	▬
Ground boarding:	▨	Site investn.:	▩	Arboricultural supervision - TRS:	▬ ▬
Arboricultural supervision - Excavations:	▩	Arboricultural supervision - 'No Dig' HS.:	▩		

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 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 designs or method statement. An architect or structural engineer should be contacted 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.

© Arbtech Consulting Ltd, 2021