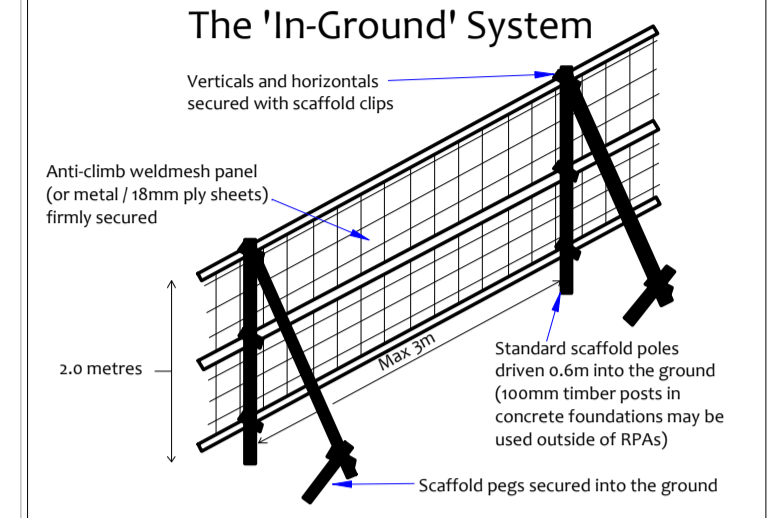


Tree Protection Barriers

The purpose of tree protection barriers is to keep construction activity away from Restricted Activity Zones or Construction Exclusion Zones. They should be appropriate to the nature and proximity of activity within the site. The barriers should be erected prior to the commencement of all activity including demolition, soil stripping and delivery of materials and demolition (except where existing structures require demolition to enable the barriers to be installed). Barrier systems are specified below and should be installed according to the legend on the Tree Protection Plan.

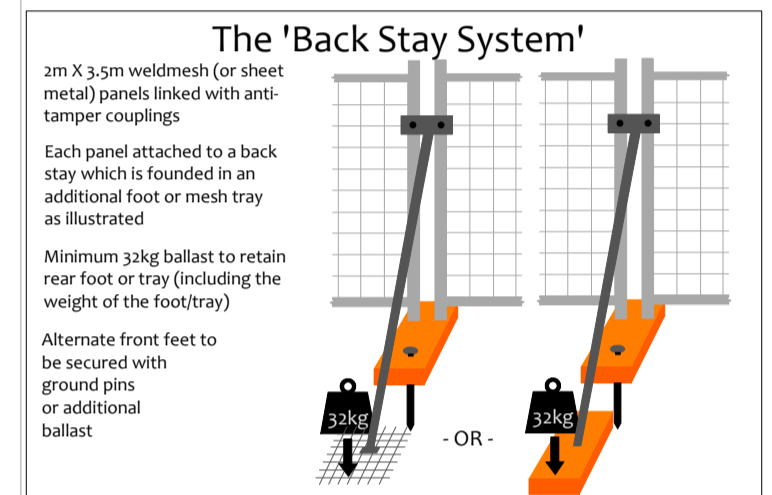
The In-Ground System

This system may be installed where indicated by a solid purple line on the Tree Protection Plan. It should be robust enough to withstand occasional knocks by plant machinery and, once installed, shall remain in place throughout the entire construction phase.



The Back-Stay System

This system may be installed where indicated by a solid or dashed purple line on the Tree Protection Plan. It is more practical over existing hard surfaces or where the fencing needs to be moved to enable permitted activities within a Restricted Activity Zone. This system should be able to withstand occasional knocks by machinery and should not be relocated except with the consent of the site manager and the approval of the local authority.



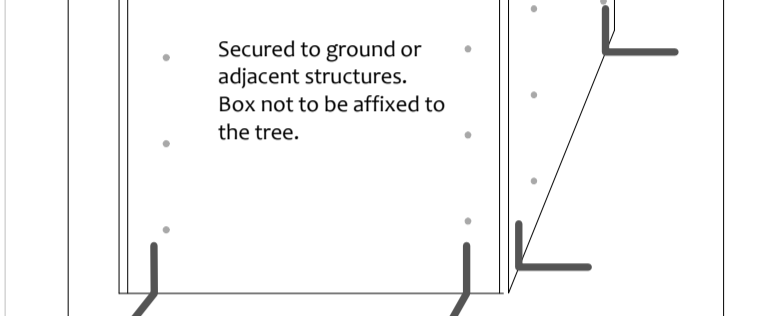
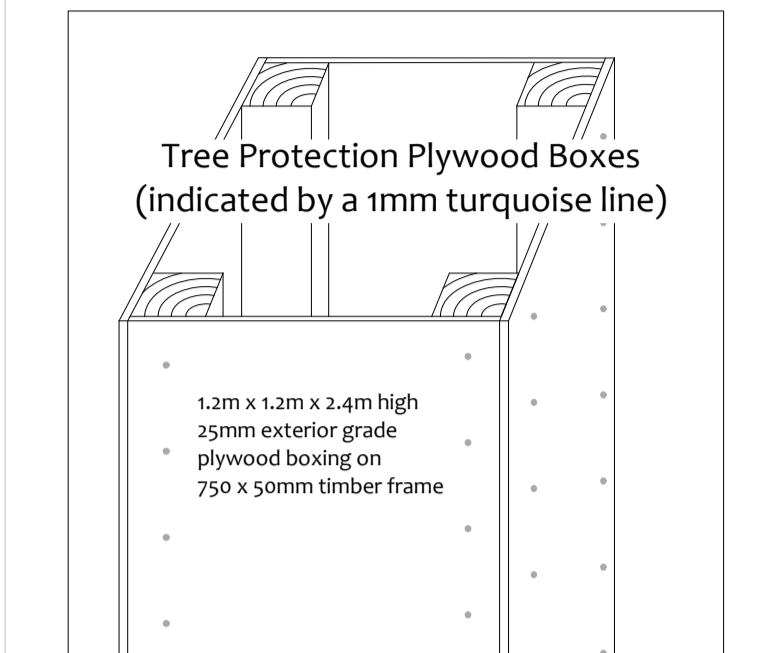
Notices

Suitable weather proof notices should be displayed to identify tree protection zones. They should state the purpose of the fencing and that it should not be moved, or traversed, other than by authorised personnel.

Tree Protection Barriers - Continued

Stem Protection – Timber Boxing

Where indicated by a turquoise square on the Tree Protection Plan, it shall be necessary to install robust plywood boxing to protect a tree stem. The plywood boxing specification is indicated in the diagram below. The actual size of the plywood boxing shall be determined by the extent of the root flare at the base of each stem. The box shall be large enough to avoid contact with any part of the tree that surrounds. No fixings shall be attached to any part of the tree. Instead, it shall be free standing or attached to the ground or adjacent structures (e.g. walls or fences). It shall be made firm enough to withstand occasional knocks from any plant machinery that may be operate in its vicinity.



Removal of Tree Protection Barriers

Removal of protective fencing or ground protection measures shall be done after all major construction work is complete and their removal has been approved by the appointed arborist.

Tree Works Specification

The following table specifies the tree works which will be required prior to the commencement of construction activity:

Tree Reference	Action Required	Notes
T5, G8	Remove.	Stumps of trees within the RPAs of retained trees shall be removed with a stump grinder NOT a mechanical excavator.

Timing of Operations

Activity within the site shall be phased according to the following chronology:

Order	Phase	Activity
1st.		Planning conditions relating to trees to be identified and discussed with the Project arborist and site manager.
2nd.		All specified tree removal and pruning to be undertaken (see Header -Tree Works Schedule).
3rd.	Pre-Construction Phase	Install the tree protection barriers (fencing and ground protection boards - see Headers -Tree Protection Barriers and Ground Protection Measures).
4th.		Pre-Commencement site meeting: Tree protection barriers inspected. Additional protection measures to be agreed. Variances to be agreed: Scope of future inspections / monitoring to be agreed.
5th.		Arboricultural Method Statement to be revised and approved if required.
Protection measures confirmed acceptable by the local authority		
6th.	Construction Phase	Demolish the wall except within 4m of T4. Install new foundations.
7th.		Demolish and rebuild the wall within 4m of T4, taking into account restricted activities as specified in Restricted Activity Zone B.
8th.		Rebuild the rest of the wall and install new fencing.
9th.	Post-Construction Phase	Remove protective barriers (fencing and ground protection measures as applicable).

Site Monitoring Accountability

This table should be completed at the Pre-Start meeting or earlier

Position	Name	Contact Phone & email	Roles
Project Manager	Insert Details	Insert Details	Liaising with site manager & project arborist regarding any potential issues relating to trees. Oversight of this monitoring schedule. Instructing the project arborist and arranging access. Liaising with local authority regarding discharge of planning conditions and variances to the Arboricultural Method Statement.
Site Manager	Insert Details	Insert Details	Familiarity with Arboricultural Method Statement. Implementation of the tree protection measures. Day-to-day compliance with Tree Protection Measures. Informing the Project Manager of Tree Protection variances & issues affecting trees.
Project Arborist	Crown Tree Consultancy	08000 14 13 30 0203 797 7449 info@crowntrees.co.uk	Inspect tree works and report to the project manager. Inspect tree protection measures and report to Project Manager. Oversee excavations in RPAs, provide mitigation advice, undertake root pruning. Monthly site monitoring and reporting to the Project Manager on tree protection and variances.
Local Authority	London Borough of Camden	0207 974 4444	Liaising with the project arborist and project manager regarding tree protection issues relating to planning conditions. Advice and assistance with the discharge of planning conditions relating to trees.
Additional Contact	Insert Details	Insert Details	Insert Details
Additional Contact	Insert Details	Insert Details	Insert Details

Ground Protection Measures

Within Restricted Activity Zone A, soils containing roots may be subject to compaction due to general construction activity (including pedestrian activity). In order to minimise compaction, it is proposed to ensure that a suitable load-spreading surface is in place at all times that any activities are occurring in this zone.

Since only pedestrian traffic will occur, the ground protection measures may be as simple as timber boards, or scaffold planks installed directly onto the ground. Alternatively the boards may be supported by a scaffold framework. The scaffold may be founded on poles driven into the ground and/or onto blocks (to raise the scaffold) with additional couplings to make the framework secure. Where only barrows are to operate, thick wooden boards or scaffold planks should also suffice.

The ground protection measures shall be installed and approved before any activities occur within this zone including storage of spoil or materials.

Construction Exclusion Zones

Within Construction Exclusion Zones the following restrictions shall apply:

- Tree Protection Barriers shall be erected and maintained throughout the entire project as indicated on the Tree Protection Plan and under the header 'Tree Protection Barriers'.
- These shall remain in place at all times except when authorised landscaping works are being undertaken. At such times, all restrictions that apply to the Restricted Activity Zone shall apply. Furthermore, the project arborist shall be informed prior to any works being undertaken in these zones.
- No construction activity or excavation shall occur unless agreed otherwise by the project arborist and local authority.
- No vehicles or plant machinery shall be driven or parked.
- No tree works, other than those specified in this report shall be undertaken.
- No alterations of ground levels or conditions shall occur.
- No chemicals or cement washings permitted.
- No temporary structures shall be installed.
- No spoil shall be stored.
- No fires shall be permitted.
- All hazardous materials (including non-essential cement products) shall be forbidden.
- Removal of hard surfaces, structures or turf shall be done using hand operated tools only and supervised by the project arborist.

Restrictions in Specific Zones

Restricted Activity Zone A

Within this zone trees roots are likely to be present where access will be required to facilitate construction. The following restrictions shall apply:

- No vehicles or plant machinery shall park or operate unless a suitable load spreading surface is in place. The load spreading surface shall be installed and maintained as specified under the heading 'Ground Protection Measures'. This shall remain in place throughout the entire construction phase or until any new permanent hard surfacing is installed. Any pedestrian activity other than very occasional shall also require a suitable load spreading surface.
- Storage of materials and spoil shall be avoided unless it has been agreed with the project arborist that the ground protection measures are adequate to ensure no soil compaction or contamination occurs. All hazardous materials (including cement products) shall be forbidden.
- No excavation or ground disturbance shall occur whatsoever.
- No new permanent or temporary structures shall be erected other than those shown on the planning application documents unless approved by the local authority.

Restricted Activity Zone B

This zone encompasses the wall and foundation to a distance of 4m either side of the oak, T4, in order to minimise the impact on roots, the following restrictions shall apply:

- All operations in this zone shall be overseen by the project arborist.
- The existing masonry shall be retained intact until all foundations have been installed on either side of this zone.
- Only hand tools shall be used to demolish the masonry.
- Soils and roots behind the wall shall be retained undisturbed.
- The project arborist, in conjunction with the structural engineer, shall determine where strengthening pillars may be installed (these will be positioned to avoid significant root disturbance).
- The existing foundations shall be retained intact and strengthened with screw piles driven through. Additional beams or reinforced concrete may be applied above the foundation if desired.
- In order to stabilise the tree and the ground, the new wall shall be built as soon as reasonably possible after the strengthening of the foundations.
- The works should be carried out over as short a timescale as practicable and during times when no strong winds are forecast.
- Any gaps between the rear face of the wall and the retained soil shall be filled with soil or expanded polystyrene ('Glaswool' or similar). The project arborist in conjunction with the structural engineer shall determine where expanded polystyrene may be installed.
- If roots in excess of 25mm diameter are exposed, they shall be retained intact and protected with damp hessian sackings or similar during times that they are exposed. Any smaller roots that need to be severed shall be pruned with secateurs.

General Restrictions - Throughout the Site

Preparatory Works
No demolition, removal of surfaces, or soil stripping shall commence until the protective fencing and ground protection measures are installed to the satisfaction of the local authority.

Fires
No fires shall be permitted beneath any tree canopy or within 5m of any tree stem, branch or foliage. No fires shall be permitted within any Construction Exclusion Zone or Restricted Activity Zone. No fires shall be permitted in the vicinity of any exposed tree roots.

Canopy Protection
In order to protect tree canopies the following restrictions shall apply throughout the site:
 • No machinery in excess of 2m shall pass beneath the canopy of any tree without being carefully marshalled in order to ensure that no branches are damaged.
 • If materials require installation or delivery beneath tree canopies, this shall be done without the use of overhead cranes.
 • If materials are to be installed or delivered close to tree canopies (Do not beneath them) and a crane is required, they shall be carefully marshalled in order to ensure that branches are not accidentally damaged.

Storage of Spoil and Materials
Storage of materials and spoil shall be avoided in any Construction Exclusion Zones and Restricted Activity Zones unless it has been agreed with the project arborist that the ground protection measures are adequate to ensure no soil compaction or contamination occurs. All hazardous materials (including non-essential cement products) shall be forbidden.

Hazardous Materials

Any mixing of cement based materials shall take place outside the Construction Exclusion Zones and Restricted Activity Zones. Where cement is to be mixed at considerable distances from trees and water runoff cannot enter Root Protection Areas, then no further special measures are required. Otherwise, provision shall be made to ensure that the mixing area is contained so that no water run-off enters the Root Protection Area of any trees (see diagram for example). Mixers and barrows shall be cleaned within this area.

All other chemicals hazardous to tree health, including petrol and diesel, shall be stored in suitable containers as specified by current COSHH Regulations, and kept away from Root Protection Areas.

Underground Services

No underground services (including soak-aways) shall be located in any part of the Construction Exclusion Zones or Restricted Activity Zones unless done so in a manner detailed in a specific Method Statement and approved by the local authority.

Site Hoarding

If site hoarding shall be installed over the Root Protection Area of any tree, the following restrictions shall apply:
 • Ground levels shall be maintained as existing.
 • Post holes shall not exceed 300mm x 300mm.
 • No post hole shall be excavated within 1.5m of any tree stem.
 • Post holes shall be excavated using hand tools or by a post-hole auger attached to plant machinery sited outside of Root Protection Areas.
 • Roots in excess of 50mm shall be retained wherever possible.
 • Roots in excess of 50mm shall be pruned with sharp secateurs.
 Pruning shall be minimal and only undertaken where absolutely necessary to facilitate the site hoarding. It shall be undertaken by a reputable tree surgeon working to BS 3998 (2013).
 Site hoarding may be installed in place of the specified tree protection measures subject to the approval of the local authority with regard to its location and specification.

Siting of Cabins

Cabins shall be located outside of Construction Exclusion Zones and Restricted Activity Zones unless agreed otherwise by the project arborist. Where this is being considered, the project arborist shall be consulted and specific tree protection measures agreed. The following general restrictions will apply:
 • All services to and from site cabins shall be installed above ground through any Root Protection Areas.
 • No excavation shall occur within Root Protection Areas to enable cabins to be installed.
 • The cabins shall be founded on a suitable load spreading surface.

Fence Posts or Decking Posts

If permanent fencing or decking is to be installed within Root Protection Areas, the following restrictions shall apply:
 • All post holes shall be excavated by hand and kept as narrow as possible (maximum diameter 300mm).
 • Exploratory post holes shall be dug before committing to post / panel positions. If any roots in excess of 25mm are encountered they are to remain intact and the post hole shall be relocated slightly. The fencing system must permit such flexibility (i.e. where fixed panel widths are used, all post holes must be excavated before committing to the final location).
 • Any roots in excess of 50mm which are severed shall be neatly pruned back with secateurs. This will encourage healing and reduce the likelihood of infection.
 Walls shall be avoided over Root Protection Areas unless their foundations may be spanned over roots using a beam system.
 Hedges may be planted within Root Protection Areas using hand tools to minimise excavation.

Site Monitoring Schedule

Inspection	Site Attendees	Comments
Pre-Start Desk-top To occur prior to any works taking place on the site.	N/A.	Project Manager and Site manager to study this Method Statement & contact the Project Arborist to agree all protection measures.
Pre-Start Meeting After tree works completed & tree protection barriers / ground protection measures installed. Prior to any other activity, inc. demolition & soil stripping.	Site manager, project arborist. Tree Officer invited.	Tree protection fencing locations & specification checked. Additional ground protection measures installed. Further protection measures / restrictions agreed.
All works within Restricted Activity Zone B Including demolition, foundation strengthening and rebuilding.	Site manager, project arborist. Tree Officer invited.	Two week's notice to be given prior to works. Works to be as specified in this Method Statement. Works to be recorded and photographed. Mitigation measures to be employed wherever specified by the project arborist.
Intermediate Inspection and Reporting Throughout the demolition and external construction phase.	Site manager and project arborist.*	Project manager, site manager and project arborist to liaise regarding any issues which may affect trees. To occur at least once per month.
Post-Construction Meeting Post external construction activity but prior to removal of fencing & landscaping operations.	Site manager, project arborist. Tree Officer invited.	Retained trees inspected. Ground conditions assessed and mitigation measures agreed where appropriate. Further landscaping operations and restrictions to be agreed.

* Where agreed with the L.A. it may be acceptable to supply photographs of the fencing to avoid the necessity for a site visit.

Tree Data Schedule

Reference	C-Group	Tree Type	Age & Species	Height (m)	DBH (cm)	Comments	Notes	Recommendations	Visual	Physiological Condition	Amenity Value	Life Expectancy	Retention
T1			Mature London Plane	10	45	8	Position: Street tree. Form: Multi-stemmed at 4m with a balanced crown. History: Managed by cyclical reduction. Defects: No significant defects observed.	No action required.	Good	High	40+	A	
T2			Mature London Plane	10	5	75	Position: Street tree. Form: Multi-stemmed at 4m with a balanced crown. History: Managed by cyclical reduction. Defects: No significant defects observed.	No action required.	Good	High	40+	A	
T3			Mature London Plane	12	5	64	Position: Street tree. Form: Multi-stemmed at 4m with a balanced crown. History: Managed by cyclical reduction. Defects: No significant defects observed.	No action required.	Good	High	40+	A	
T4			Early Mature Pseudotsuga	17	4	99	Position: Adjacent west boundary. Form: Single stemmed and vertical with a well formed crown. History: No evidence of significant pruning. Defects: Major hollow at stem base.	Decay detection required.	High	Poor	10-20	B	
T5			Early Mature Bay Laurel	9	3.5	41	Position: Adjacent rear boundary. Form: Multi-stemmed at ground level with a slightly unbalanced crown. History: No evidence of significant pruning. Other: Growing into the canopy of T4. Recorded stem diameter is equivalent for 4 stems (30mm, 19mm, 19mm, 16mm).	No action required.	Good	Low	20-40	C	
T6			Semi-Mature False Acacia	13	3	37	Position: Single stemmed and vertical with a balanced crown. History: No evidence of significant pruning. Defects: Sparse canopy.	No action required.	Moderate	Fair	20-40	C	
G7			Semi-Mature Lawson Cypress	20	5	1	Position: Row of three. History: No evidence of significant pruning. Defects: No significant defects observed.	No action required.	High	Good	40+	C	
G8			Semi-Mature Leyland Cypress	25	7	25	Position: Adjacent west boundary. Form: Group of seventeen trees. All Single stemmed and vertical with a narrow, upright habit. Stem diameters range from 8cm to 39cm. History: No evidence of significant pruning. Defects: No significant defects observed.	No action required.	High	Good	10-20	C	
T9			Semi-Mature Chestnut	9	3	29	Position: Street tree. Form: Twin-stemmed at 3m with a compact crown. History: No evidence of significant pruning. Defects: No significant defects observed.	No action required.	Moderate	Good	40+	B	
T10			Semi-Mature Chestnut	9	3	31	Position: Street tree. Form: Twin-stemmed at 4m with a well-formed crown. History: No evidence of significant pruning. Defects: No significant defects observed.	No action required.	High	Good	40+	B	

Tree Protection Plan

BS 5837 Root Protection Area (radius = 12xstem diameter)

Tree Retention Categories:
 Category A tree: Trees of high quality with an estimated life expectancy of 40+ years. Usually large trees with significant presence or smaller trees with excellent form. Retention of these trees is highly desirable.
 Category B tree: Trees of moderate quality with a life expectancy of 20+ years. Usually mature trees, or younger trees with good form. Retention of these trees is desirable though less than Category A trees.
 Category C tree: Unremarkable trees of low quality and form. Individual specimens are not considered to be a material planning consideration.
 Category U tree: Trees unsuitable for retention due to their very poor condition.

Root Protection Area having been amended to account for site conditions

T1 = Tree No 1 G2 = Group No 2 H3 = Hedge No 3

Drawing No: CCL 10303 / TPP Rev: 1
 Title: Tree Protection Plan (Existing Layout with Proposals Overlaid)
 Site: 1 Ferncroft Avenue NW3 7PG
 Scale: 1:200
 Paper Size: A1

