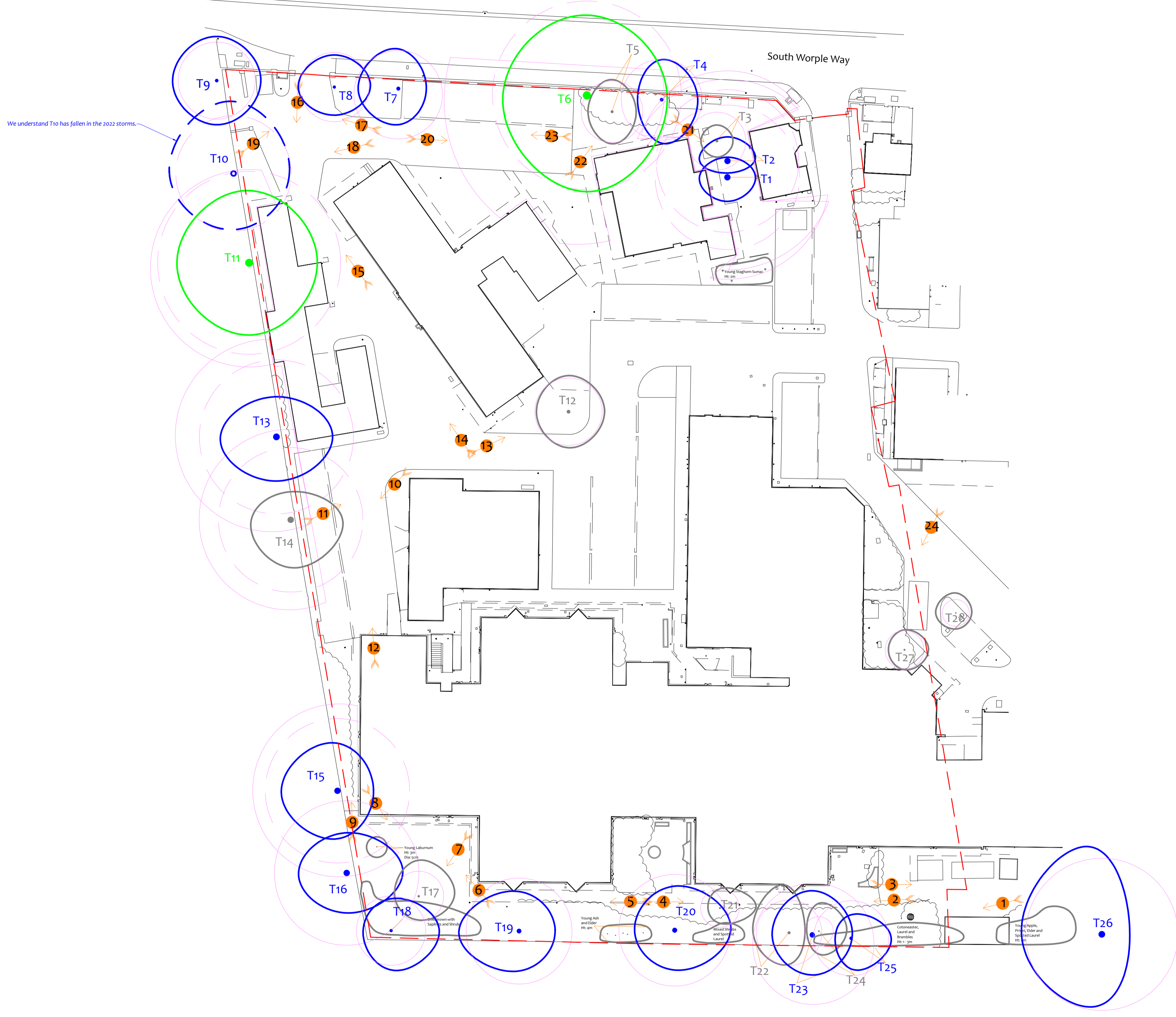


Tree Data Schedule

Tree Ref.	Species	Age & Size	Height (m)	DBH (cm)	Condition	Notes	Retention Category	Pruning	Other
T1	Lombardy Poplar	Early-Mature	16	3	3	Multi-stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Significant dead wood between canopy and dead weight to lower crown.	Moderate	Good	Moderate 10-20 B
T2	Lombardy Poplar	Early-Mature	16	5	3	Multi-stemmed at gn with a slightly unbalanced crown. Pruning required. Significant dead wood between canopy and dead weight to lower crown.	Moderate	Good	Moderate 10-20 B
T3	Holly	Semi-Mature	8	4	3	Single stemmed and well pruned with a balanced crown. No significant defects observed.	Moderate	Good	Moderate 20-40 C
T4	Lime	Semi-Mature	13	3	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 20-40 B
T5	Lime	Semi-Mature	7	3	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 20-40 C
T6	London Plane	Mature	17	11	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 20-40 A
T7	Lime	Semi-Mature	8.5	3	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 40+ B
T8	Lime	Semi-Mature	10	3	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 40+ B
T9	Horse Chestnut	Mature	10	14	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 20-40 B
T10	Horse Chestnut	Mature	16	15	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 20-40 B
T11	Horse Chestnut	Mature	17	15	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 20-40 A
T12	Cherry	Early-Mature	5	4	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 20-40 C
T13	Horse Chestnut	Mature	15	15	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 40+ B
T14	Horse Chestnut	Mature	14	15	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 40+ B
T15	Horse Chestnut	Mature	17	15	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 40+ B
T16	Horse Chestnut	Mature	19	15	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 40+ B
T17	Silver Maple	Semi-Mature	7	3	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 40+ C
T18	Ash	Semi-Mature	9	3	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 40+ B
T19	Bhutan Pine	Early-Mature	13	3	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 20-40 B
T20	Bhutan Pine	Early-Mature	13	3	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 20-40 B
T21	Silver Birch	Semi-Mature	8.5	3	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 20-40 C
T22	False Acacia	Semi-Mature	9	3	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 20-40 C
T23	Bhutan Pine	Semi-Mature	16	6	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 40+ B
T24	False Acacia	Semi-Mature	5	4	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 10-20 C
T25	Bhutan Pine	Semi-Mature	13	3	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 40+ B
T26	Bhutan Pine	Early-Mature	16	3	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 40+ B
T27	Silver Birch	Semi-Mature	8.5	3	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 40+ C
T28	Bhutan Pine	Early-Mature	6	1.7	3	Single stemmed at gn with a slightly unbalanced crown. Pruning required. Sustained dead branches throughout. Debris present on ground level. Dimensions estimated.	Moderate	Good	Moderate 20-40 C

RPA's amended to account for hard surfaces and/or building foundations.

RPA's drawn as circles, before amending to account for hard surfaces and/or building foundations.



Tree Constraints Plan

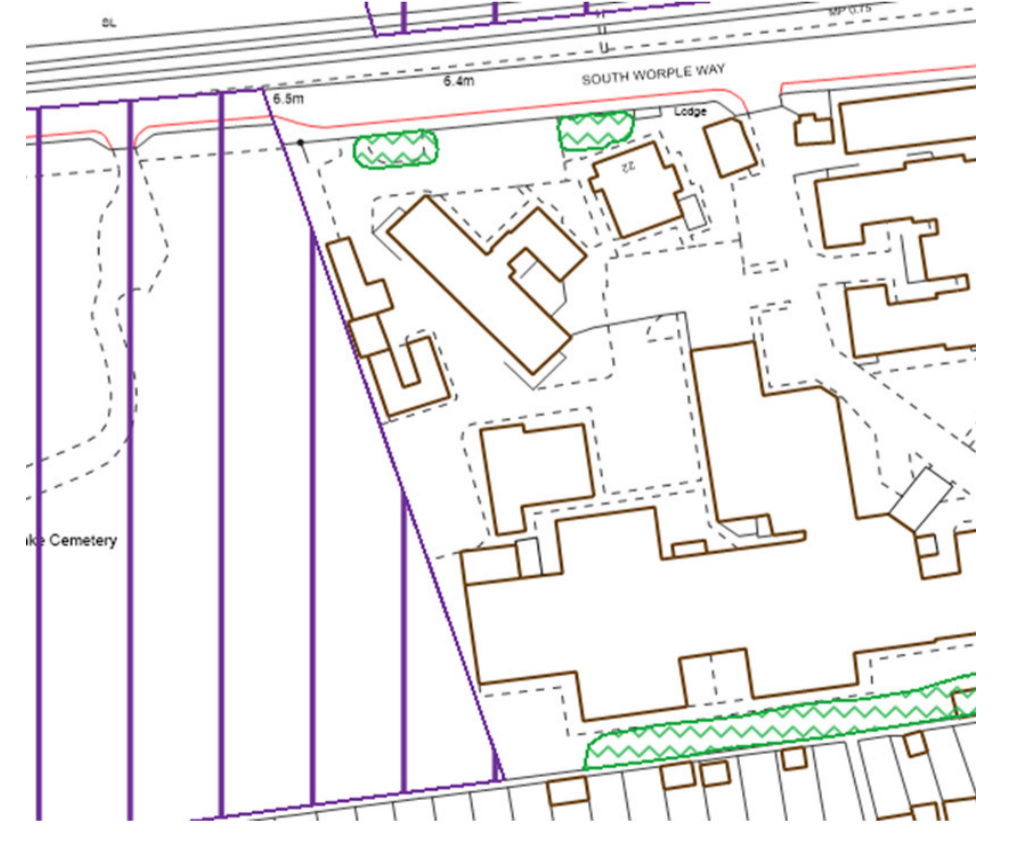
(Existing Layout)

Tree Protection Status:

We were informed by London Borough of Richmond upon Thames that:

- There are tree preservation orders affecting trees within the site.
- Mortlake Cemetery immediately adjacent the western boundary lies within a Conservation Area.

The screen shot below indicates where TPO's are present in hatched green.



Drawing No:	CCL 10770 / TCP Rev 4
Title:	Tree Constraints Plan (Existing Layout)
Site:	Barnes Hospital SW14 8SU
Scale:	1:300
Paper Size:	A1



Retention Category	Description
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 maturing 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 merit. Individual specimens are not considered to be a material planning consideration.
Category U tree	Trees unsuitable for retention due to their very poor condition.

Tree Constraints Plan

○	B5 S37 Root Protection Area (radius = 1xstem diameter)
○	Root Protection Area needing amendment due to site conditions, e.g. presence of existing road or building.
○	Root Protection Area having been amended to account for its low quality
T1 = Tree No 1	G2 = Group No 2 H3 = Hedge No 3

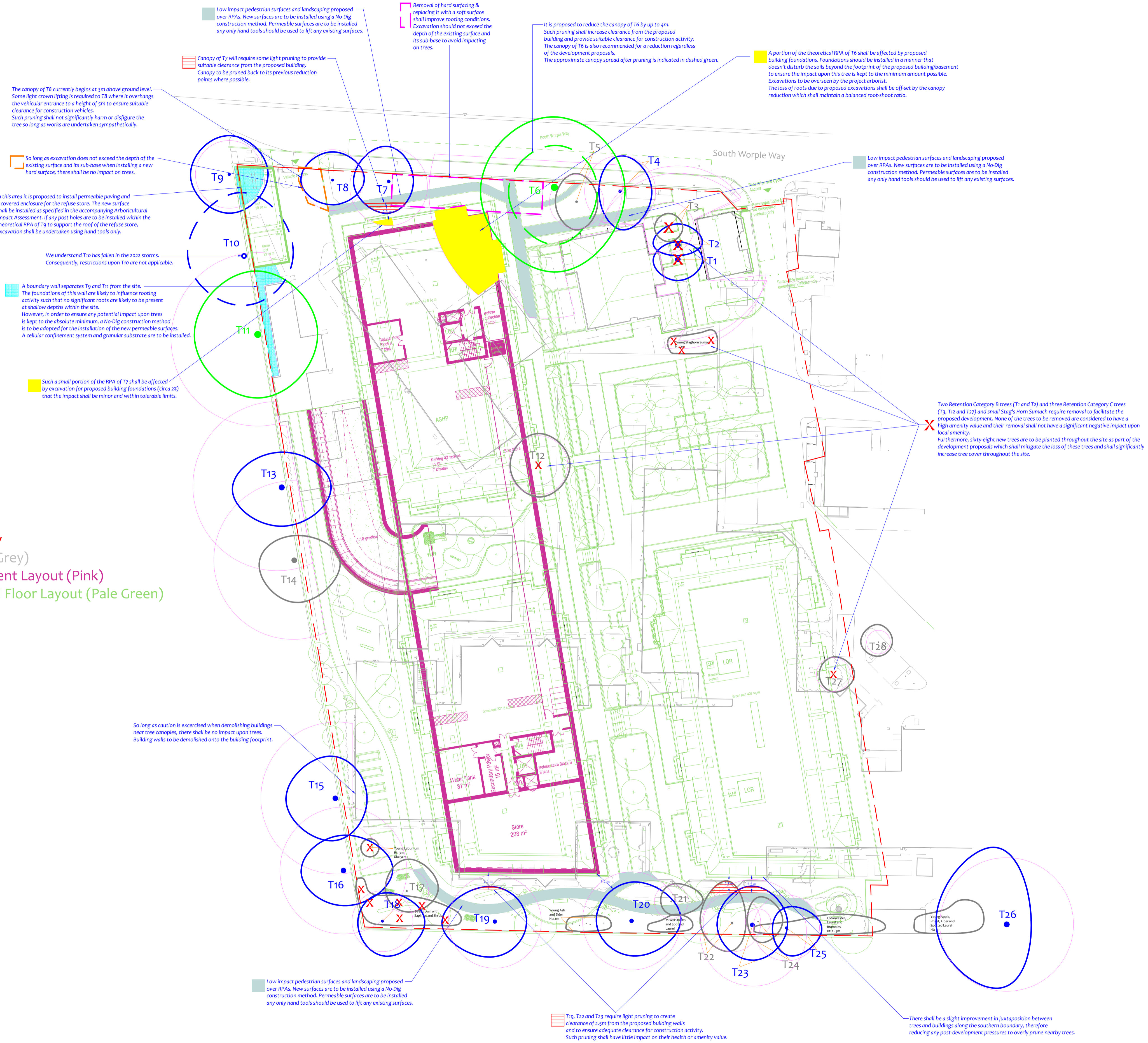
Tree Ref.	Species	Height (m)	Radius (m)	Root Protection Area (m <sup>2</sup> )	Area (m <sup>2</sup> )
T1	Lombardy Poplar	16	9.0	254	16.0
T2	Lombardy Poplar	16	6.9	248	15.7
T3	Holly	8	3.6	41	6.4
T4	Lime	13	5.0	80	8.9
T5	Lime	7	3.8	46	6.8
T6	London Plane	17	11.8	434	20.8
T7	Lime	8.5	5.5	96	9.8
T8	Lime	10	4.3	59	7.7
T9	Horse Chestnut	10	4.8	72	8.5
T10	Horse Chestnut	16	7.2	163	12.8
T11	Horse Chestnut	17	11.4	408	20.2
T12	Cherry	5	4.2	55	7.4
T13	Horse Chestnut	15	9.6	290	17.0
T14	Horse Chestnut	14	9.0	254	16.0
T15	Horse Chestnut	17	9.0	254	16.0
T16	Horse Chestnut	19	9.0	254	16.0
T17	Silver Maple	7	3.1	31	5.5
T18	Ash	9	4.3	59	7.7
T19	Bhutan Pine	13	6.6	137	11.7
T20	Bhutan Pine	13	7.0	152	12.3
T21	Silver Birch	8.5	2.4	18	4.3
T22	False Acacia	9	4.1	52	7.2
T23	Bhutan Pine	16	7.6	180	13.4
T24	False Acacia	6	1.8	10	3.2
T25	Bhutan Pine	12	4.7	69	8.3
T26	London Plane	16	9.5	282	16.3
T27	Silver Birch	8.5	2.4	18	4.3
T28	Bhutan Pine	6	1.7	9	3.0



# Impact Assessment Plan

(Existing Layout with Proposals Overlay)

Redline Boundary  
 Existing Layout (Grey)  
 Proposed Basement Layout (Pink)  
 Proposed Ground Floor Layout (Pale Green)



Drawing No:	CCL 10770 / IAP Rev 3
Title:	Impact Assessment Plan (Existing Layout with Proposals Overlay)
Site:	Barnes Hospital SW14 8SU



Tree Retention Categories	
	Category A tree
	Category B tree
	Category C 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.

Trees of moderate quality with a life expectancy of 20+ years. Usually maturing trees or younger trees with good form. Retention of these trees is desirable though less than Category A trees.

Unremarkable trees of low quality and merit. Individual specimens are not considered to be a material planning consideration.

## Impact Assessment Plan

	BS 5837 Root Protection Area (radius = 1xstem diameter)
	Root Protection Area needing amendment due to site conditions, e.g. presence of existing road or building.
	Root Protection Area having been amended to account for site conditions

	Tree to be removed to facilitate the proposal
	Tree to be removed due to its low quality

Tree Ref.	Species	Height (m)	Root Protection Area	
			Radius (m)	Area (m <sup>2</sup> )
T1	Lombardy Poplar	16	9.0	254
T2	Lombardy Poplar	16	6.9	248
T3	Holly	8	3.6	41
T4	Lime	13	5.0	80
T5	Lime	7	3.8	46
T6	London Plane	17	11.8	434
T7	Lime	8.5	5.5	96
T8	Lime	10	4.3	59
T9	Horse Chestnut	10	4.8	72
T10	Horse Chestnut	16	7.2	163
T11	Horse Chestnut	17	11.4	408
T12	Cherry	5	4.2	55
T13	Horse Chestnut	15	9.6	290
T14	Horse Chestnut	14	9.0	254
T15	Horse Chestnut	17	9.0	254
T16	Horse Chestnut	19	9.0	254
T17	Silver Maple	7	3.1	31
T18	Ash	9	4.3	59
T19	Bhutan Pine	13	6.6	137
T20	Bhutan Pine	13	7.0	152
T21	Silver Birch	8.5	2.4	18
T22	False Acacia	9	4.1	52
T23	Bhutan Pine	16	7.6	180
T24	False Acacia	6	1.8	10
T25	Bhutan Pine	12	4.7	69
T26	London Plane	16	9.5	282
T27	Silver Birch	8.5	2.4	18
T28	Bhutan Pine	6	1.7	9

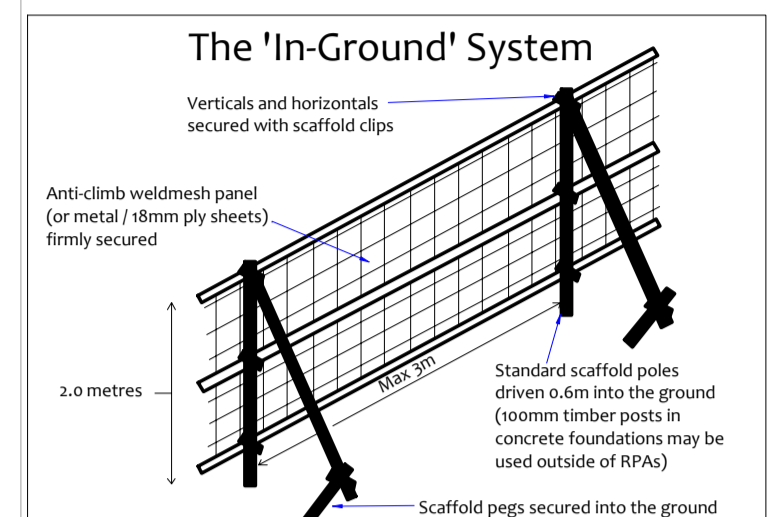
**Tree Protection Barriers**

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.

Vertical scaffold poles are driven into the ground, onto which are affixed horizontal scaffold poles and diagonal bracing struts. Wedmesh panels (or similar - e.g. Herat tree fencing panels, or 18mm plywood boards) are secured to this scaffold framework using sturdy clips (e.g. standard scaffold clips). The systems illustrated in the diagram to the right and is based on BS 5837 guidelines.

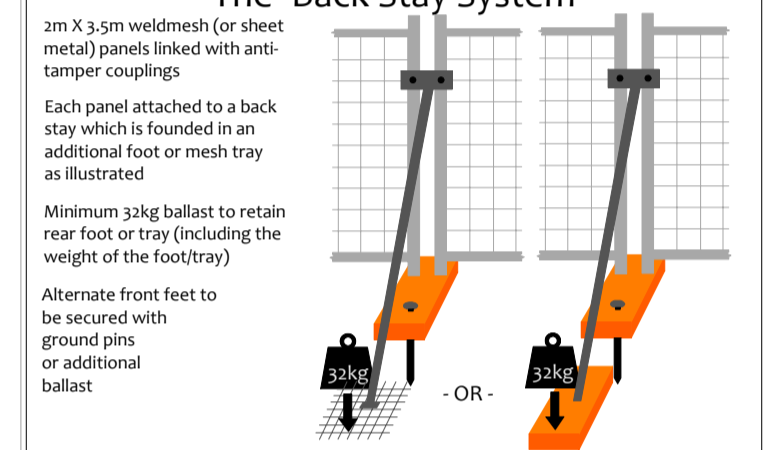


**The Back-Stay System**

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.

Within this system, wedmesh fencing panels (minimum height 2m) are affixed into rubber or concrete feet and clipped together with anti-tamper couplers. Two couplers should be used, spaced at least 1m apart. Alternate panels should be attached to a diagonal back stay connected to an additional foot or bargeplate secured with ground pins or additional ballast. Where ground pins are not used, the total weight of the ballast should total not less than 3kg.

Where it is not possible to install diagonal struts (such as very close to a hedge) then the front feet shall be secured using ground pins or ballast.



**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.

**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 demolition and 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.
- Removal of existing structures such as walls, steps and hard surfaces (where applicable) shall be undertaken using hand tools or a mechanical excavator operating from outside the Restricted Activity Zone and carefully marshalled by the project arborist.
- No excavation shall occur beneath any existing hard surfacing and its sub-base or beneath the foundations of any structure such as walls, steps or paving.
- Where a new surface is proposed over the Root Protection Areas of T6, T9 and T10, No Dig construction method is to be adopted. A permeable surface and granular substrate shall be utilised to enable passage of oxygen and water to the soils beneath and a dimensional cellular confinement system shall be incorporated into the sub-base to improve its load bearing capacity.
- Where new pedestrian surfaces are proposed, a No Dig construction method is to be adopted and permeable surfaces are to be installed. Any lifting of existing paving shall be undertaken using hand tools.
- If any post holes require installation to support the roof of the refuse store enclosure, excavation shall be undertaken using hand tools only. Any roots encountered shall be neatly severed using clean, sharp secateurs and post holes shall not exceed 300mm diameter.
- No further excavation shall occur in this zone without consulting the project arborist and obtaining approval from the local authority.
- Existing ground levels shall be retained undisturbed or raised by no more than 100mm. Ground levels may only be raised using granular topsoil (not rich in clay) or where new surfacing is proposed.
- No new permanent or temporary structures shall be erected other than those shown on the planning application documents unless approved by the local authority.
- Underground services shall not be installed in this area without prior consultation with the project arborist and a methodology agreed and approved by the local authority.
- If roots are encountered in excess of 25mm diameter, they shall be retained wherever possible and protected with damp packing during times that they are unearthed. Any roots in excess of 50mm that need to be severed shall be pruned with secateurs.
- 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 non-essential cement products) shall be forbidden.
- No fires shall be permitted.

**Restricted Activity Zone B**

Within this zone, it is proposed to excavate for the basement. Either contiguous piling (or sheet piling) shall be installed along the edge of the basement, or an alternative method shall be adopted which does not disturb soils beyond the footprint of the basement (e.g. pinning). A typical method of piling would be to excavate to a specified depth (e.g. 1m), install shuttering, and then cast the concrete basement walls. Then to excavate short sections beneath the wall and cast deep concrete. In this manner, excavation may continue to any specified depth without disturbing soils beyond the footprint of the build.

The specific method adopted will vary between contractors and should be confirmed with the local authority prior to commencement. However, the following restrictions shall apply and must be adhered to:

- No excavation or ground disturbance shall occur beyond the footprint of the basement.
- Where an excavator is used, it shall operate from within the footprint of the basement.
- The excavator or piling rig shall be marshalled to ensure no contact is made with any tree canopy.
- The project arborist shall oversee the initial stages of excavation/piling.

**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 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.

**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 - <i>Tree Works Schedule</i> ).
3rd.	Pre-Construction Phase	Install the tree protection barriers (fencing and ground protection boards - see Headers - <i>Tree Protection Barriers and Ground Protection Measures</i> ).
4th.		Pre-Commencement site meeting: Tree protection barriers inspected. Additional protection measures to be agreed. Variances to be agreed. Location of underground services to be agreed. Boundary treatments to be agreed. Extents of excavation to be agreed. Scaffold restrictions to be agreed. Scope of future inspections / monitoring to be agreed.
5th.		Arboricultural Method Statement to be revised and approved necessary.
Protection measures confirmed acceptable by the local authority		
6th.	Demolition and Construction Phase	Demolish existing structures and remove existing surfaces where applicable.
7th.		Install new buildings, hard surfaces and services taking into account restricted activities as specified in this Arboricultural Method Statement.
8th.		Site meeting with project arborist. Landscaping restrictions to be agreed. Condition of retained trees to be assessed and mitigation agreed. Ground conditions to be assessed and ground remediation to be agreed.
9th.	Post-Construction Phase	Remove protective barriers (fencing and ground protection measures as applicable).
10th.		Undertake restricted landscaping operations within Root Protection Areas, including (where applicable) boundary treatments, pedestrian surfaces, decking and any proposed tree planting.

**Personnel and Accountability**

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

Position	Name	Contact Phone & email	Roles
<b>Project Manager</b>	TBC at detailed design stage through condition.	Insert Details	Liaising with site manager & project arborist regarding any potential issues relating to trees. Scheduling of meeting, excavations and inspections. Overseeing 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.
<b>Site Manager</b>	TBC at detailed design stage through condition.	Insert Details	Day to day monitoring of tree protection measures. Fortnightly supply of site photographs showing all tree protection measures. Induction of all contractors. Reporting to the Appointed Arborist of any incidents or potential variations to the agreed tree protection measures.
<b>Project Arborist</b>	Crown Tree Consultancy	08000 14 13 30 0203 797 7449 info@crowntrees.co.uk	Liaising with LPA Tree Officer over all arboricultural matters. Initial inspection and signing off of tree protection barriers including ground protection measures. Monthly site visits and inspections. Oversight of excavation for basement down to 1.2m in Restricted Zones. Reporting to the local authority following site inspections and any variation or incidents.
<b>Local Authority</b>	London Borough of Richmond upon Thames	Insert Details	Receipt of reports from the appointed arborist. Liaising with the appointed arborist to agree suitability of tree protection measures and any variations. Enforcement.
<b>Additional Contact</b>	Insert Details	Insert Details	Insert Details
<b>Additional Contact</b>	Insert Details	Insert Details	Insert Details

**Site Monitoring Schedule**

Inspection	Site Attendees	Comments
<b>Pre-Start Desk-top</b> 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.
<b>Pre-Start Meeting</b> 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. Ground protection measures checked. Contractors to be inducted to all relevant aspects of the Arboricultural Method Statement. Responsibilities checked and acknowledged. Adherence to the Arboricultural Method Statement to be discussed and agreed. Report on findings to be sent to the local authority tree officer (see accompanying reporting template).
<b>Monthly Inspection and Reporting</b> To occur once per calendar month throughout the entirety of the project until the local authority agree that tree protection measures may be removed	Site manager and project arborist	Tree protection fencing locations & specification checked. Ground protection measures checked. Past month, present and future month - activities and adherence to Arboricultural Method Statement discussed and checked. Report on findings to be sent to the local authority tree officer within 5 working days.
<b>Oversee Initial stages of excavation for foundations in Restricted Activity Zone B.</b>	Site manager and project arborist.	Two week's notice to be given prior to commencement. Excavation to be as specified in this Method Statement. Roots to be retained or pruned as specified in this Method Statement. Activities to be recorded and photographed. Mitigation measures to be employed specified by the project arborist.
<b>Any other ground disturbance in Restricted Zones &amp; Construction Exclusion Zones</b> including demolition, soil stripping, removal of hard surfaces, excavation for new surfacing, foundations, service trenches etc.	Site manager, project arborist.	Two week's notice to be given prior to commencement. Excavation to be as specified in this Method Statement. Excavations to be recorded and photographed. Mitigation measures to be employed specified by the project arborist.
<b>Post-Construction Meeting</b> 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.

**General Site Photographs**

