

BS5837 Arboricultural Impact Assessment



Northwood and Pinner Cottage Hospital, Pinner Road, HA6
1DE

Client: NHS Property Services and NHS Hillingdon
CCG

Job Reference: 02370Rv9

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MEWI)

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1. Executive Summary

1.1 Tamla Trees Ltd has been appointed by [NHS Property Services Ltd](#) to provide advice on the arboricultural issues relating to proposed redevelopment of Northwood & Pinner Hospital. We surveyed the site on the 8th September 2015 with a resurvey in August 2017 of additional trees not instructed in the original survey. A further visual check of T12, T13 & T15 was undertaken in April 2020. The survey accorded with BS5837:2012 "Trees in relation to design, demolition and construction – Recommendations".

1.2 The site is currently occupied by Northwood & Pinner Hospital which remains partially operational. The proposal can be described as "*Partial demolition, refurbishment and extension of the existing Cottage Hospital to provide a state of the art health centre and the comprehensive redevelopment of the remaining Site to provide residential (use class C3) accommodation and ancillary works including car parking, cycle parking, landscaping and associated works (phased).*"

1.3 The proposal results in the removal of all the internal site trees except for T28 (Ash) and T30 (Cherry) and extensive soft landscaping will be provided to mitigate for the tree removal and deliver a high-quality landscape scheme. Further detailed comment on this is outside the scope of this report.

1.4 The main constraint trees are therefore those located outside the site boundary. In general ground treatment remain largely unchanged where they extend into the site with special working practices proposed where necessary. The location of the trees offsite enhances their protection as the boundary fencing/ hoarding prevents movements towards the trees and ensures the remaining Root Protection Area (RPA) located off site is unaffected.

1.5 The tree issues can be summarised as: **Effective Tree Protection (demolition/ excavation & construction)> Site operative knowledge of tree protection issues> Effective working practices (mainly hard standing replacement) within the RPA of retained trees> Soft landscaping to make good and deliver a lasting tree and vegetation legacy.**

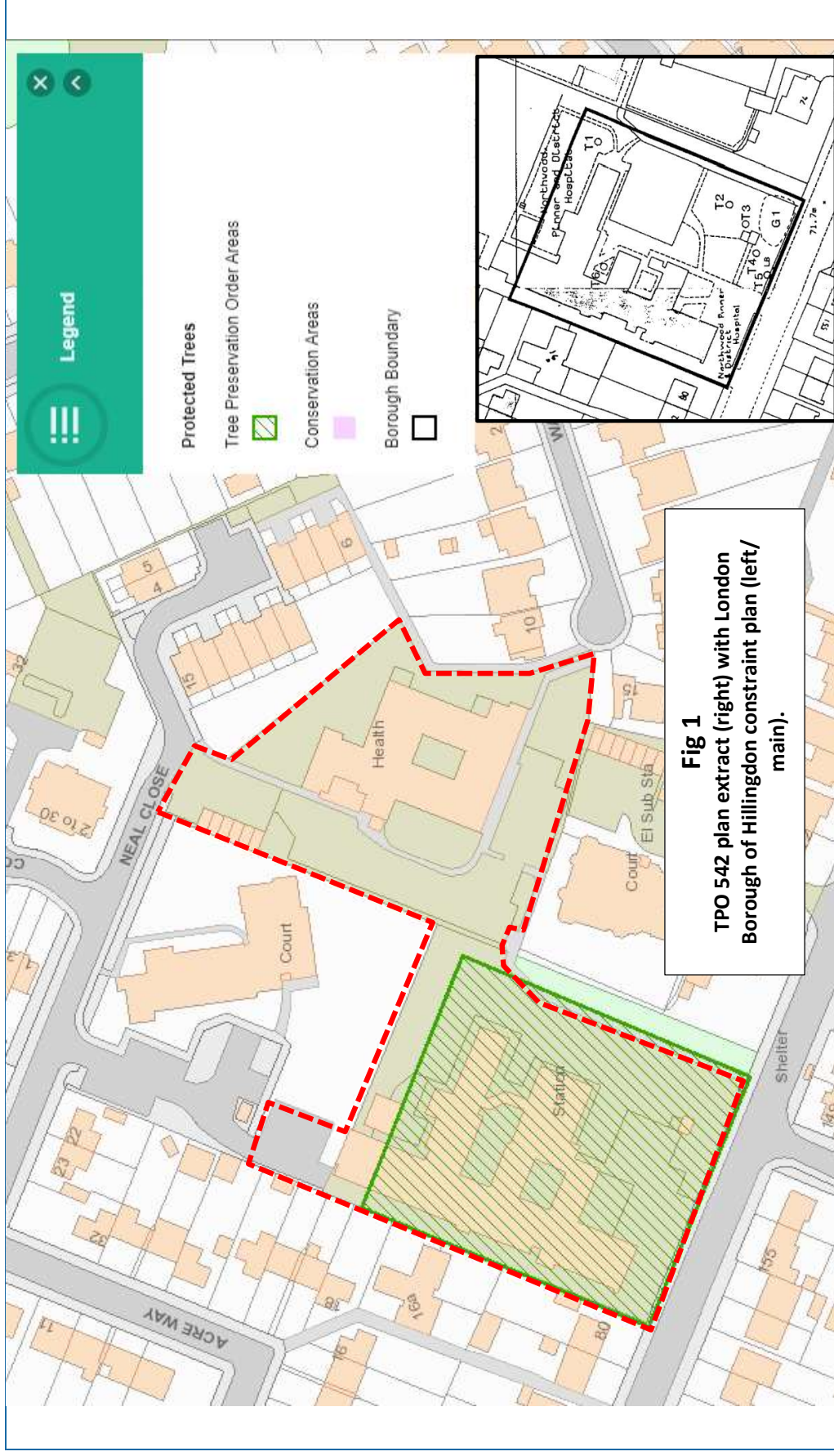
1.6 We are advised that the site is affected by London Borough of Hillingdon TPO 542 but is not located within a Conservation Area.

1.7 This report is based upon layout: SY619-100-001 GA Landscape Plan

2. Statutory Protection

2.1 The statutory protection is as follows:

Conservation Area Status	
Is the site located within a Conservation Area?	No
Notes: All trees larger than 7.5cm diameter at 1.5m above ground level are subject to regulations within a Conservation Area. Exemptions apply for trees which are dead and dangerous but clarification before any tree works is advised. A notification is required in many circumstances.	
Tree Preservation Order Status	
Are inspected trees subject to a TPO?	Yes
Type of TPO	Area
	Individual
	Group
	Woodland
TPO Reference	542
Date TPO Made	1994
Notes: (i) The type and details of any TPO determine which trees are 'protected'. Exemptions apply for trees which are dead and dangerous but clarification before any tree works is advised. An application may be required before undertaking works. (ii) TPO info as advised by client.	



3. Terms of Reference

- 3.1 [BS5837:2012](#) 'Trees in relation to design, demolition and construction – recommendations'
- 3.2 [BS3998:2010](#) 'Tree work – recommendations'
- 3.3 [NJUG 4 – National Joint Utilities Group](#) "Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees. Volume 4, issue 2. London: NJUG 2007" To include [Operatives Hand-out Guidance](#)
- 3.4 BGS Open Source Soil Data <http://www.bgs.ac.uk/nercsoilportal/maps.html>

4. The Trees

- 4.1 The trees can be summarised as follows:

BS 5837 Cat	A	B	C	U
Specific Trees & Groups	T2, T33	T3, T4, T5, T9, T12, T13, T14, T22, T23, T25, T26 TG1, TG3, TG4, TG8	T1, T6, T7, T8, T15, T16, T17, T19, T20, T21, T24, T27, T28, T29, T30, T31, T32 TG2, TG5, TG6, TG7, TG9 H1 SG1	T10, T11, T18
Total Number	2 Individuals 0 Groups	11 Individuals 4 Groups	16 Individuals 5 Groups 1 Hedge, 1 Shrub Group	3 Individuals 0 Groups

4.2 The main tree locations and a summary of their visual contributions can be summarized as follows:

BS 5837 Cat	A	B	C
Northern Boundary Site edge trees with some canopy screening value when viewed from the north/ Neal Close	T2, T33	T9, T22, T23, T25 TG1	TG2, TG7
Eastern Boundary Site edge boundary trees with screening value when viewed from the east/ for residents looking on to the site. To the south of this section these trees contribute to the general amenity of Pinner Road	-	TG3, TG4	-
Southern Boundary Trees which contribute to the general amenity when viewed from the main public viewpoint (Pinner Road) & Sovereign Court		T12, T13, T14 TG4	T15, T16, T29 TG1, TG9

4.3 All other non-listed trees provide an amenity but this is generally from within the site or their condition/ size and form is such that it is minimal when considered from outside the site.

4.4 H1 is not affected by the Hedgerow Regulations 1997.

5.0 Arboricultural Impact Assessment

5.1 Site Specific Soils

- 5.1.1 Soil is an important factor in tree growth and the type of underlying soil can impact on successful integration of new developments.
- 5.1.2 A free draining sandy soil containing sand/gravel is likely to lead to water being accessible in the upper horizons during the growing season and available at greater depths and trees will generally be forced to explore a larger volume/ depth on such soils. By comparison a clay soil is more easily compressed, particularly when wet and compression can have a greater impact on tree health (by way of root death).
- 5.1.3 As shown below the site is located within a London Clay Formation. Care for all works within the tree RPA's will be required to limit the risk of soil compaction.

Soil Description	
London Clay Formation - Clay, Silt And Sand. Sedimentary Bedrock formed approximately 34 to 56 million years ago in the Palaeogene Period. Local environment previously dominated by deep seas.	

Underlying Soil Material contains Clay		YES
Soil Type increased rooting depth profile?		NO
Increased risk of soil compaction due to soil type		YES

5.1.4 All comments regarding soils should be verified with onsite geotechnical investigations and laboratory testing with foundation depth and design undertaken by a structural engineer in accordance with the requirements of NHBC Chapter 4.2.

5.2 Root Protection Area (RPA) Incursions

5.2.1 The RPA incursion elements are summarised below:

BS 5837 Cat	A	B	C	Summary
RPA Incursion	T2	TG1, TG8	T28, TG9	Demolition – The tree protection measures identified in Appendix 5 are installed prior to any onsite activity and briefed to ground workers as part of the relevant site induction process. All existing hard surfaces within the RPA of retained trees remains in situ for all demolition works to ensure that there is no tracking of vehicles over exposed ground. A pre-commencement meeting will visualize this to contractors with on site marking of the surface areas not to be stripped as part of any demolition/facilitation contract. New Surfaces - The identified trees (except for T28) are located within 3rd party land but have RPA's that extend into the site. Levels remain unaltered within the RPA of these trees, but the wearing course surfaces will be replaced and upgraded. The process for this work is a toolbox talk> careful strip of the existing wearing course but

				leaving the existing underlying subbase in place. This is then topped up as required before a new permeable wearing course is applied where these spaces are within the RPA of the trees. The linear nature of TG1 (Lime) is such that this is extended outside the RPA to reflect the trees will likely have rooted further into the site. Where space permits internal areas are secured by full spec tree protective fencing prior to any on site works. Note: We are not advised of any revision to the existing surfaces within the site close to 3rd party trees ref: T1, T19, T20 & TG6. Services – No new services are proposed within the RPA of retained trees but further consultation prior to the agreement Landscaping – Further to the proposal being completed there will be a need to make good. BS3882 compliant topsoil will be spread/ raked out by hand to a depth no greater than 100mm and any localized shrub and tree planting completed. Areas below retained trees are recommended for mulching with composted bark mulch where possible. New trees will be planted in high quality tree planting pits and where possible unified planting ‘troughs’ to allow unified root system development between compatible tree species.
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5.3 Tree Loss

5.3.1 We are advised that T6, T8, T10, T11, T16, T25, T27, T31, T32, TG3 & TG4 have already been removed since our original survey works.

5.3.2 Of the remaining trees within the site boundary T28 (Ash) and T30 (Cherry) will be retained. The tree removal is visualised on the Tree Protection Plan at Appendix 5.

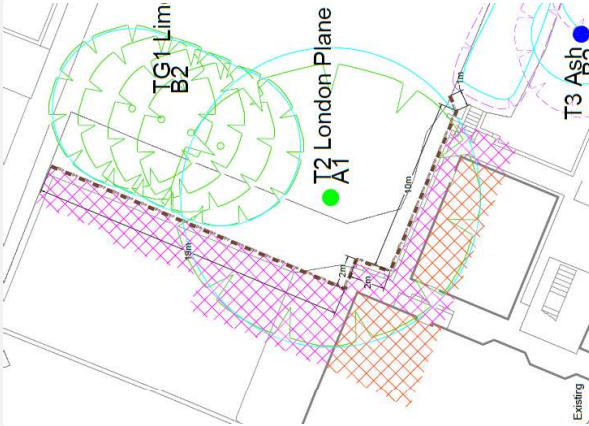
5.3.3 The site will be the subject of an extensive soft and hard landscape scheme and readers are referred to NHS Northwood & Pinner Design & Access Statement Landscape Strategy for further details.

5.3.4 **Birds** - In the event future tree works are required to be completed between 1st March & the 31st July (inclusive) a due diligence check for nesting birds must be completed before work starts in order to comply with the Wildlife & Countryside Act 1981. This check should be recorded in the Site-Specific Risk Assessment. If active nests are found work should not take place until the young have fledged.

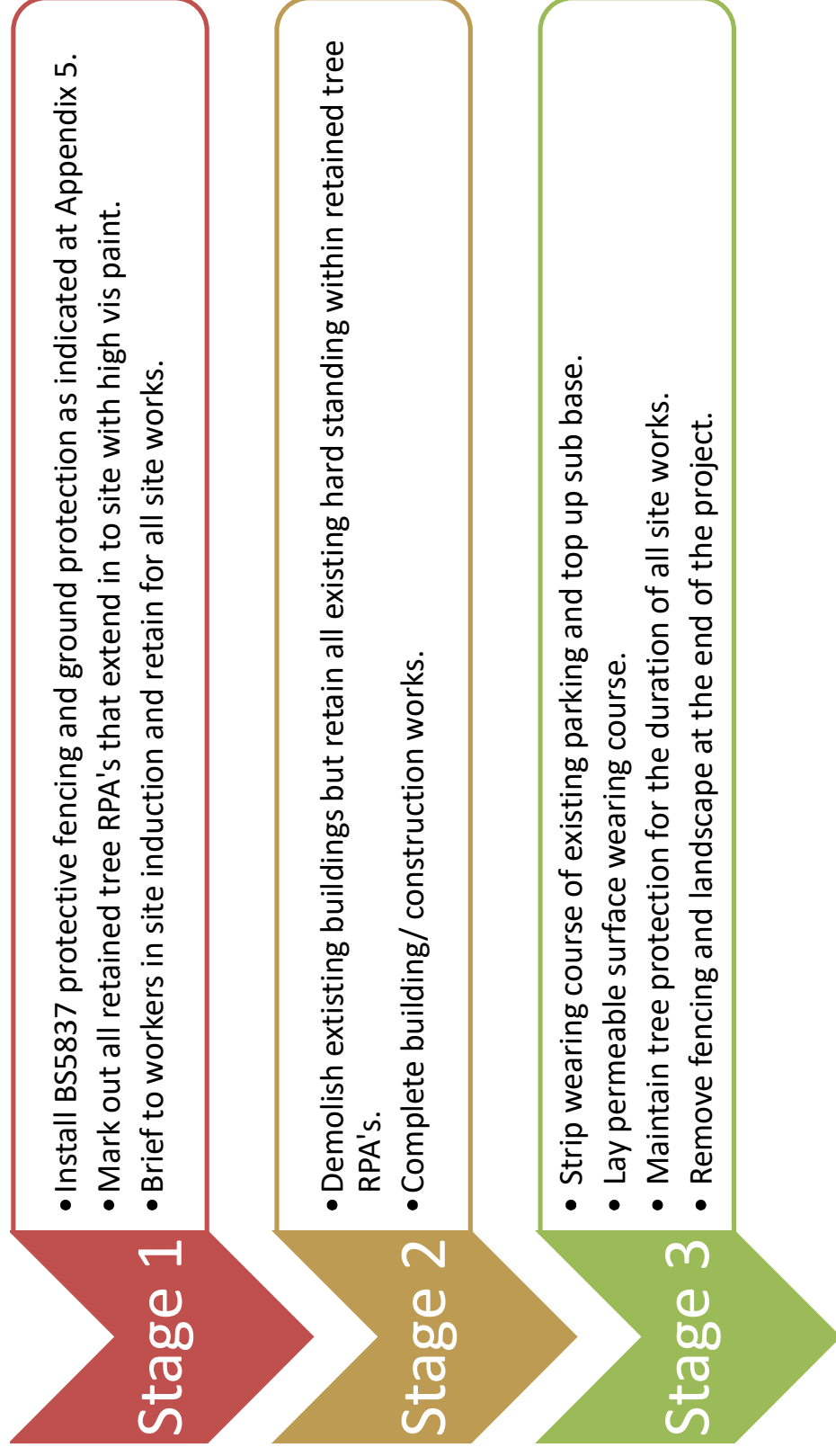
5.3.5 **Bats** – It should be noted that in England and Wales, the relevant legislation is the Wildlife and Countryside Act (1981) (as amended); the Countryside and Rights of Way Act, 2000; the Natural Environment and Rural Communities Act (NERC, 2006); and by the Conservation of Habitats and Species Regulations (2010).

5.4 Demolition & Construction

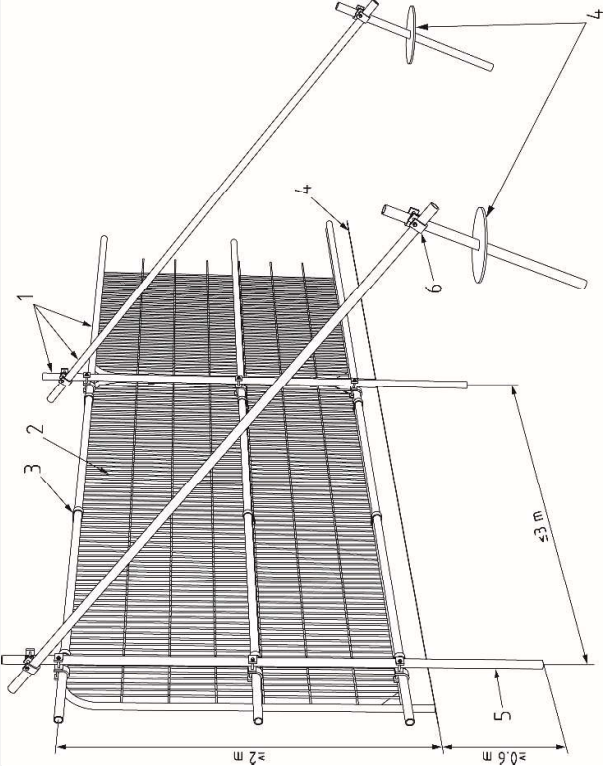
- 5.4.1 The existing health care buildings will be demolished and a partial demolition elsewhere. They are accessed over existing hard surfaces which will be retained. No demolition of buildings within the RPA of retained trees is required. The tree protection measures indicated at Appendix 5 will be installed prior to the demolition and maintained for the duration of all site works. No new building foundations are within the RPA of retained trees.

Demolition	
	Overview - Tree protection indicated at Appendix 5 (example area left) will be installed prior to any on site activity. - Buildings removed via existing established access routes over hard standing away from retained trees.
Threat level to Retained Trees	LOW

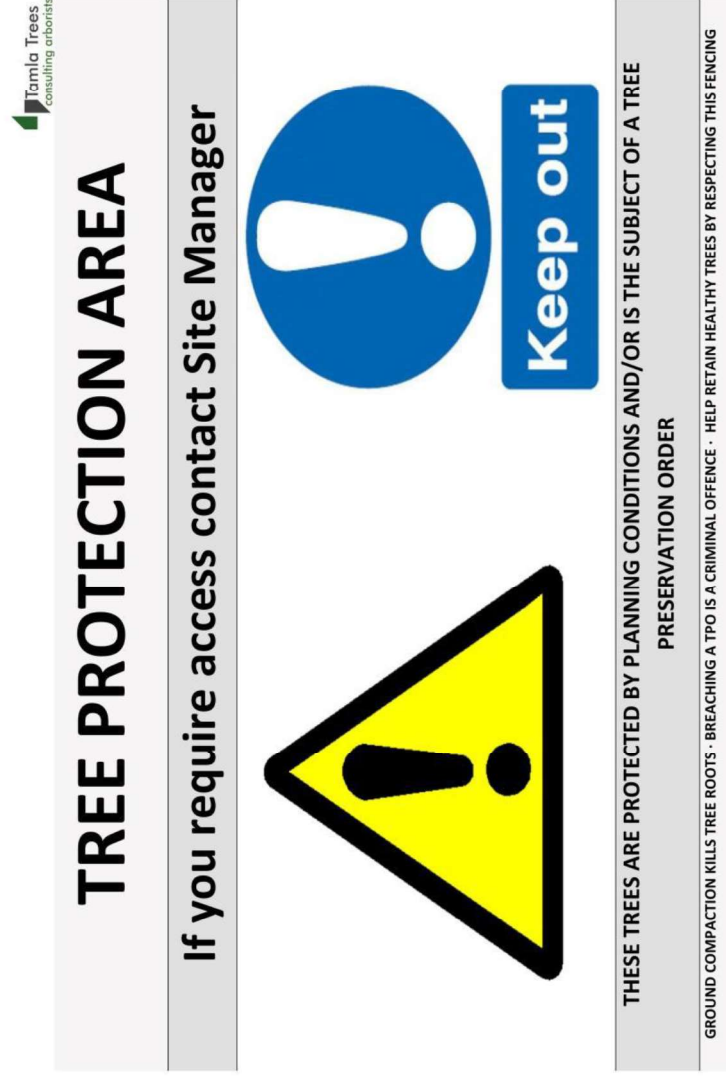
5.4.2 The proposed tree protection procedure can be summarised as follows:



5.4.3 High quality BS5837 compliant tree protection will be installed prior to any on site works. A mixture of full spec fencing (shown below) and feet fencing will be used to reflect the likely pressures on retained tree RPA's. Please refer to the plan at Appendix 5 for further information on locations.

Tree Protection	
	Overview - Tree protection required internally to site. - Installed prior to any onsite works (including demolition) - Note: To be marked with signs (inset) and purpose to be briefed to all ground workers. - Maintained for duration of the build.
Threat Level to Retained Trees	LOW

5.4.4 All internal tree protection must be appropriately signed to ensure that all site operatives know its purpose.



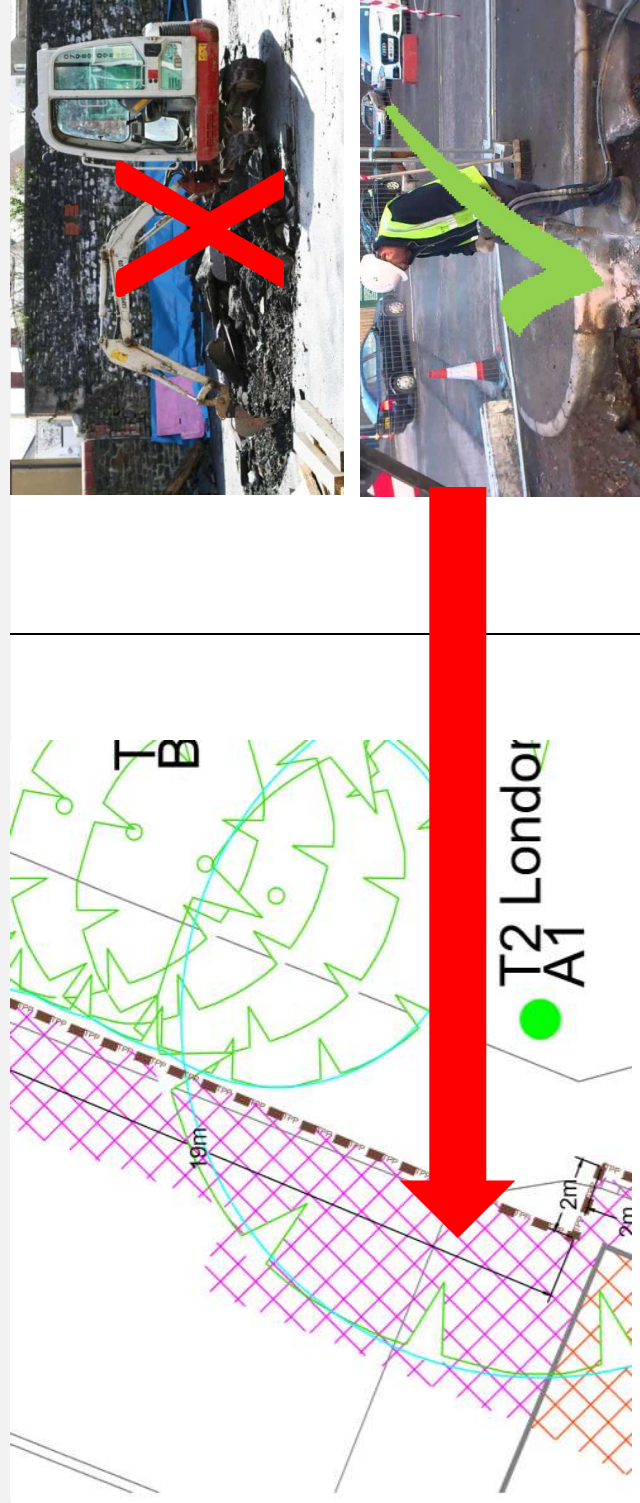
e: info@tamlatrees.com w: tamlatrees.com o: 01252 811 233
Tamla Trees Registered England & Wales Companies Act 2006 Reg No: 08815629

Fig 2 – Professional grade weatherproof tree protection signs no smaller than 297 x 420 mm (A3) will be located at 5m intervals and all ‘return’ faces for tree protective fencing

5.5 Surfaces near Trees

5.5.1 In places hard surfaces exist within the RPA's of retained 3rd party trees. These will be resurfaced retaining the existing subbase but installing permeable wearing course.

Surface and Edge Removal Works



Threat Level to Retained Trees

HIGH

5.5.2 Any work to remove existing surfacing must be completed after a toolbox talk with the project arboriculturalist. Localised jack hammer works can be undertaken (if required) but should stop prior to breaking through the surface. Edging and posts should also be removed by hand. A detailed toolbox talk is undertaken with the working areas marked out on site by hand with appropriate site supervision. The existing subbase can then be topped up before a new permeable wearing course is laid. This approach minimises the risk of inadvertent damage to underlying tree roots.

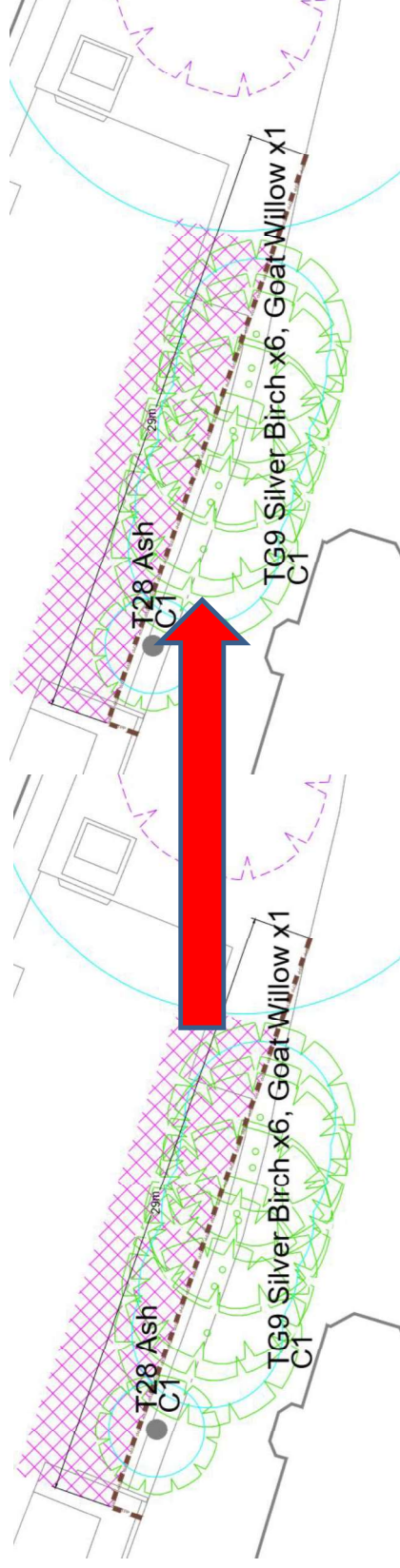


Fig 3 – Existing parking (left) with proposed (right). The existing subbase is retained and the new wearing course is permeable to deliver a benefit to the retained trees. The competence of the contractors is key to the successful delivery of these works.

5.6 Site Service Provision

5.6.1 The proposal will most probably draw upon existing site services. Multiple opportunities exist along the existing site frontage well away from tree RPA areas in the event new service routes are required to enter the site.

5.6.2 A full review of proposed services, particularly any attenuation tanks and site set up (welfare, service huts etc) is required. These are usually the subject of post planning condition> It is encouraged that we are part of the design process prior to the service provisions being fixed to minimise the risk of conflict with retained tree RPA's.

5.7 Ground Level Changes

5.7.1 No changes to ground levels have been advised other than the localized works to the surfacing as detailed elsewhere in this report.

5.7.2 Particular care and attention is required within the area around T2 (London Plane) as there are level changes in this area and these should be respected to successfully integrate this tree.

5.8 Tree Shading of Proposal

5.8.1 The layout and extent of tree removal is such that we do not envisage any issues with tree shading.

5.9 Demolition & Arboricultural Project Supervision

- 5.9.1 Most damage to trees on developments sites is caused inadvertently and to ensure continued protection during development a system of site monitoring is normal. Prior to this, and in the event any demolition works are to be undertaken we would advise that hoarding/ tree protective fencing is installed prior to any demolition activities. This fencing should be located (as far is practical) at the edge of the RPA of each retained tree. Where this is not possible (due to hard standing) the trees should be shuttered with ply to limit/ risk the impact of direct damage.
- 5.9.2 Basic checks will be required following planning being achieved to ensure that protective fencing remains intact and ensure the proposed works close to trees are completed in accordance with the finalized report. Any unforeseen issues can also be identified and discussed before damage to the trees occurs. It is likely this approach will be secured by way of Planning Condition.
- 5.9.3 Following each visit a formal record is sent to the Local Authority to allow formal discharge of the planning condition. The scale of tree retention on this development is such that 4 visits are likely. One at the start to check fencing is of the correct specification and is in place, further checks for the duration of works before a final 'sign off' visit.

Visit Detail	Date	Status
Pre-commencement Inspection Attend site to inspect type and location of tree protection prior to works commencing and discuss any issues associated with enabling works/ proposal with site manager	TBC	Incomplete
Construction Phase Inspection Attend site to inspect type and location of tree protection and verify it remains in place. Tool box talk with operatives who will undertake any fencing/ landscaping/ surfacing or service installation works within RPA's. Discuss any issues and provide interim update to planning file/ tree officer.	TBC	Incomplete
Repeat at 8-week intervals with a combination of announced and unannounced inspection visits		
Final Site Inspection Final site visit to confirm that no damage has been done to retained trees/ identify any remedial actions in the event damage has occurred. Assess any required tree surgery following construction.	TBC	Incomplete

Appendix 1 – BS5837 Survey Key

BS 5837 Cat	Description
A	Those of high quality and value: in such a condition as to be able to make a substantial contribution (> 40 years)
B	Those trees of moderate quality and value: those in such a condition as to make a significant contribution (> 20 years)
C	Those trees of low quality and value: currently in an adequate condition to remain until new planting could be established (> 10 years)
U	Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed regardless of development (< 10 years)

Note: Subcategories are denoted in the tree survey data (A1, B1, C2 etc.). You are referred to BS5837 for further detail if required.

Tree No.	T (tree), G (group), H (hedge), W (woodland) + Ref No.
Species	Common Name
Ht (m)	Measured height in metres
DBH (m)	Diameter at 1.5m above ground level
No of stems	An indication of the trees form @1.5m (1 = single stem, m/s = multi-stemmed)
Branch Spread	In m to cardinal points
Cr Ht Clearance (m)	Overall height of lowest branches from the ground level on side of proposed development
Life Stage	Young, Semi-Mature, Early-Mature, Mature, Over-Mature
General Observations	Observations on the condition of the tree(s)
Tree Work Specification	Proposed tree works in accordance with BS3998
BS Cat	See above
Life Exp	Estimated remaining contribution in years.
RPA Radius(m)	Radius of the trees Root Protection Area measured from the trunk to the edge of the RPA circle in metres

Appendix 2 – BS5837 Survey Data

Tree No.	Species	DBH (m)	No of Stems	Ht (m)	Crown Spread				BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
					N	E	S	W							
T1	Sycamore	0.4	M/S	9.8	4.6	5	5.1	5	C1	Mature	20 to 40	2	3rd party tree so unable to fully inspect. Included basal unions. Some stem damage. Surface roots within site. Hard standing at base.	No works	4.8
T2	Plane (London)	0.75	1	13	9.6	8	9	8.9	A1	Mature	> 40	1.5	3rd party tree with no access to fully inspect. Has been heavily crown reduced in past but now fully regrown. Levels will require careful attention. Low canopy over site with scope to cut back/crown lift.	Crown lift to 4.5m above parking area. All works to accord with BS3998	9
T3	Ash	0.25	1	9	4	4	4.5	5	B2	Mature	20 to 40	1.5	Slightly asymmetric shape due to other trees nearby. Some previous branch removal.	Remove to facilitate proposed development	3
T4	Ash	0.28	1	9	4	5	5.8	3.5	B2	Mature	20 to 40	1.5	Slightly asymmetric shape due to other trees nearby. Some previous branch removal.	Remove to facilitate proposed development	3.4

Tree No.	Species	DBH (m)	No of Stems	Ht (m)	Crown Spread				BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
					N	E	S	W							
T5	Ash	0.25	1	9	4	4	4.5	3	B2	Mature	20 to 40	1.5	Slightly asymmetric shape due to other trees nearby. Some previous branch removal.	Remove to facilitate proposed development	3
T6	Cherry	0.16	M/S	8	2.6	3.2	3.9	3.8	C1	Mature	20 to 40	0.3	Poor overall form with multiple stems from 0.4m.	Advised as already removed by client	1.9
T7	Cherry	0.16	1	8	2.5	3	3.5	3	C1	Mature	20 to 40	0.3	Poor overall form with lower stem wounds. Suppressed. Thinning canopy.	Remove to facilitate proposed development	1.9
T8	Cherry	0.3	1	11	4	4	4.5	4	C1	Mature	10 to 20	1.5	Thinning canopy. V union at 2m. Better of the Cherries but still not a good tree due to thinning canopy.	Advised as already removed by client	3.6
T9	Poplar (Lombardy)	0.9	1	21	4	4	4	4	B1	Mature	20 to 40	4	3rd party tree so no access to fully inspect. Large and prominent.	Remove to facilitate proposed development	10.8

Tree No.	Species	DBH (m)	No of Stems	Ht (m)	Crown Spread				BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
					N	E	S	W							
T10	Walnut	0.45	M/S	8.5	4	4	3.5	4.5	U	Mature	<10	3	Undergrowth hindered full inspection. Canopy indicates in terminal decline.	Advised as already removed by client	5.4
T11	Willow (Weeping)	0.9	1	18	7	8	6	7	U	Over-mature	<10	1	Has shed multiple limbs. Large stem decay pockets evident. Continued risk of further branch failure events.	Already removed	10.8
T12	Lime	0.7	1	18	6	6	6	6	B1	Mature	> 40	0	Epicormic basal growth hindered full inspection but scope for long term retention.	Remove to facilitate proposed development	8.4
T13	Lime	0.5	1	15	5	5	5	5	U	Mature	<10	0	Extensive <i>Kretzschmaria deusta</i>	To be removed	6
T14	Lime	0.5	1	15	5	5	5	5	B1	Mature	> 40	0	Epicormic basal growth hindered full inspection but scope for long term retention. Hard standing at immediate base.	Remove to facilitate proposed development	6

Tree No.	Species	DBH (m)	No of Stems	Ht (m)	Crown Spread				BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
					N	E	S	W							
T15	Lime	0.4	1	10	5	4	5	5	C1	Mature	10 to 20	0	Epicormic basal growth hindered full inspection but appears in early decline.	Remove to facilitate proposed development	4.8
T16	Lime	0.3	1	7.8	3	3	3	3	C1	Early-mature	> 40	2	No access to fully inspect but young developing tree which could be retained.	Advised as already removed by client	3.6
T17	Cherry	0.27	1	2.6	3.8	3.8	3.9	3.7	C1	Mature	<10	1.8	Low wider visual significance but basal plaque reads "in memory of Bap Baker". Roots growing towards down pipe.	Remove to facilitate proposed development	3.2
T18	Acer	0.15	1	3.2	2.5	2.5	2.5	2.5	U	Mature	<10	1.8	Dead	Remove	1.8
T19	Ash	0.14	1	2.9	1	1	1	1	C1	Early-mature	20 to 40	1.6	3rd party tree. Recently topped.	No works	1.7

Tree No.	Species	DBH (m)	No of Stems	Ht (m)	Crown Spread				BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
					N	E	S	W							
T20	Cypress	0.25	1	8	3	3	3	3	C1	Early-mature	20 to 40	1	3rd party tree.	No works	3
T21	Oak	0.14	1	3.2	2.2	2.1	2.2	1.9	C1	Semi-mature	> 40	1	Small squat tree of poor overall form.	No works	1.7
T22	Cherry	0.34	1	7.5	2.7	3.7	3.9	3	B2	Mature	20 to 40	1	Forms a pair with T23. Some lower stem pruning wounds. Leaf necrosis. Spring feature tree.	No works	4.1
T23	Cherry	0.33	1	7.5	5.1	4.6	2.7	3.7	B2	Mature	20 to 40	1	Forms a pair with T23. Some lower stem pruning wounds. Leaf necrosis. Spring feature tree.	No works	4
T24	Maple (Norway)	0.24	1	4.8	2.8	1.2	3	3	C1	Early-mature	20 to 40	1.6	Asymmetric ornamental. Generally poor form. Autumn colour.	No works	2.9

Tree No.	Species	DBH (m)	No of Stems	Ht (m)	Crown Spread				BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
					N	E	S	W							
T25	Tree of Heaven	0.48	1	14	6.3	7	6.6	6.6	B1	Mature	> 40	2.5	Good form. Minor ribbing on lower stem. Needs space to develop fully.	Already removed	5.8
T26	Cherry	0.44	1	8.5	5.4	4.4	5.7	5.1	B2	Mature	20 to 40	1	Generally good form with some tight forks/ unions at crown break. Canopy thinning so should be monitored for signs of decline. Services at base. Spring feature tree.	Remove to facilitate proposed development	5.3
T27	Cotoneaster	0.15	2	5.8	3	2	1.8	2	C1	Mature	10 to 20	2	Asymmetrical. Suppressed.	Advised as already removed by client	1.8
T28	Ash	0.19	1	8	2.9	2.6	3	3.1	C1	Semi-mature	> 40	1.6	Self-set tree in good physiological health. Surface roots evident. Included V union at 1.6m limits value and retention lifespan.	No works	2.3
T29	Poplar (Lombardy)	1	1	18.5	6	6	4.2	5.6	C1	Mature	20 to 40	1	Big prominent tree but actually poor overall form with tight unions and open canopy for species. Prone to branch loss. Large surface roots with mower damage.	Remove to facilitate proposed development	12

Tree No.	Species	DBH (m)	No of Stems	Ht (m)	Crown Spread				BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
					N	E	S	W							
T30	Cherry	0.29	1	6.8	2.2	3.4	4.6	5	C1	Mature	20 to 40	1.5	Asymmetric canopy formation. Spring feature tree. Tight branch unions at crown break.	No works	3.5
T31	Ash	0.19	M/S	10.5	4.4	4.2	4	4.1	C1	Early-mature	20 to 40	1.5	Ivy covered lower stem. Reasonable size but poor multi stemmed form. Close to building.	Advised as already removed by client	2.3
T32	Ash	0.11	M/S	6	3	3.2	3.4	3.7	C1	Semi-mature	20 to 40	1.5	Ivy covered lower stem. poor multi stemmed form. Close to building.	Advised as already removed by client	1.3
T33	Cypress (Swamp)	0.52	1	15	5.2	6.6	5.5	5	A1	Early-mature	> 40	1.6	Great form. Fine ornamental tree with high growth potential. Recently lost limb which should be pruned off properly.	Remove to facilitate proposed development	6.2
TG1	Lime x 4	0.4	1	12	5	5	5	4.8	B2	Mature	20 to 40	0.4	Linear line of 3rd party trees. Unable to fully inspect. On raised bund. Low branches over site boundary which could be lifted/ cut back.	No works	4.8

Tree No.	Species	DBH (m)	No of Stems	Ht (m)	Crown Spread				BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
					N	E	S	W							
TG2	Cypress	0.2	1	8	3	3	3	3	C1	Early-mature	20 to 40	0	Boundary screen of closely planted conifers. Single Goat Willow evident to western end.	Remove to facilitate proposed development	2.4
TG3	Red Oak, Scots Pine, Ash, Sycamore & Hawthorn	0.45	1	13	5	5	5	5	B2	Mature	20 to 40	1.5	Red Oak to east most significant of trees. Scope to retain as individual. Pine has previously lost top. Sycamore & Ash self-set. Hawthorn leans and is in small brick retainer.	Advised as already removed by client	5.4
TG4	Willow, Ash, Holly, Elder, Poplar	0.45	1	16.5	5	5	5	5	B2	Mature	20 to 40	1	Willow dominates. No access to fully inspect but strong boundary feature of screening value. If retained full health and safety inspection advised after access created. Some dead stems of Willow which should be removed.	Advised as already removed by client	5.4
TG5	Ash, Hawthorn, Privet, Elder	0.2	1	8	3	3	3	3	C1	Mature	20 to 40	1	Scrubby undergrowth area.	Advised as already removed by client	2.4

Tree No.	Species	DBH (m)	No of Stems	Ht (m)	Crown Spread				BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
					N	E	S	W							
TG6	Privet x 1, Ash x 1	0.08	1	4.3	2	2	2	2	C1	Semi-mature	20 to 40	2	3rd party trees.	No works	1
TG7	Silver Birch X 3, Goat Willow X 1	0.29	M/S	13	4.3	3.4	6	5.7	C1	Mature	10 to 20	1	Silver Birch have localised pockets of decay on lower stems. Willow is generally poor form having been topped.	No works	3.5
TG8	Beech, Silver Birch and Cypress dominate.	0.3	1	10	4.5	4.5	4.5	4.5	B2	Mature	20 to 40		Group of mainly 3rd party trees running down boundary. Reasonable visual feature. Screening value. No access to fully inspect.	Remove trees within site boundary no works to 3 rd party trees.	3.6
TG9	Silver Birch X 6 Goat Willow X 1	0.3	1	14.5	4.4	4.5	4.5	4.5	C1	Mature	20 to 40	1.6	All sweep away from fence. Collective screening value for 3rd parties but individually poor overall form. Willow has been heavily pruned in past.	No works	3.6
SG1	Cotoneaster and Cherry Laurel	0.08	M/S	4	1.2	1.2	1.2	1.2	C1	Mature	20 to 40	0	Pruned to shape in places. Useful screen for 3rd party.	Remove to facilitate proposed development	1

Tree No.	Species	DBH (m)	No of Stems	Ht (m)	Crown Spread				BS Cat	Age Class	Life Expect	Cr Ht (m)	Observation	Recommendations	RPR (m)
					N	E	S	W							
H1	Hawthorn, Purple Plum, Sycamore & Fig	0.05	M/S	1.6	0.5	0.5	0.5	0.5	C1	Mature	20 to 40	0	Established hedge.	Remove to facilitate proposed development	0.6

Appendix 3 – Tree Works Schedule

NOTE: All tree works to be undertaken in accordance with BS 3998:2010 'Tree work - Recommendations'.

Tree Surgery & Removal

Tree No.	Species	Ht (m)	BS Cat	Age Class	Life Expect	Observation	Recommendations
T2	Plane (London)	13	A1	Mature	> 40	3rd party tree with no access to fully inspect. Has been heavily crown reduced in past but now fully regrown. Levels will require careful attention. Low canopy over site with scope to cut back/ crown lift.	Crown lift to 4.5m above parking area. All works to accord with BS3998
T3	Ash	9	B2	Mature	20 to 40	Slightly asymmetric shape due to other trees nearby. Some previous branch removal.	Remove to facilitate proposed development
T4	Ash	9	B2	Mature	20 to 40	Slightly asymmetric shape due to other trees nearby. Some previous branch removal.	Remove to facilitate proposed development
T5	Ash	9	B2	Mature	20 to 40	Slightly asymmetric shape due to other trees nearby. Some previous branch removal.	Remove to facilitate proposed development

Tree No.	Species	Ht (m)	BS Cat	Age Class	Life Expect	Observation	Recommendations
T7	Cherry	8	C1	Mature	20 to 40	Poor overall form with lower stem wounds. Suppressed. Thinning canopy.	Remove to facilitate proposed development
T9	Poplar (Lombardy)	21	B1	Mature	20 to 40	3rd party tree so no access to fully inspect. Large and prominent.	Remove to facilitate proposed development
T12	Lime	18	B1	Mature	> 40	Epicormic basal growth hindered full inspection but scope for long term retention.	Remove to facilitate proposed development
T14	Lime		B1	Mature	>40	Epicormic basal growth hindered full inspection but scope for long term retention. Hard standing at immediate base.	Remove to facilitate proposed development
T15	Lime	10	C1	Mature	10 to 20	Epicormic basal growth hindered full inspection but appears in early decline.	Remove to facilitate proposed development

Tree No.	Species	Ht (m)	BS Cat	Age Class	Life Expect	Observation	Recommendations
T17	Cherry	2.6	C1	Mature	<10	Low wider visual significance but basal plaque reads "in memory of Bap Baker". Roots growing towards down pipe.	Remove to facilitate proposed development
T18	Acer	3.2	U	Mature	<10	Dead	Remove
T26	Cherry	8.5	B2	Mature	20 to 40	Generally good form with some tight forks/unions at crown break. Canopy thinning so should be monitored for signs of decline. Services at base. Spring feature tree.	Remove to facilitate proposed development
T29	Poplar (Lombardy)	18.5	C1	Mature	20 to 40	Big prominent tree but actually poor overall form with tight unions and open canopy for species. Prone to branch loss. Large surface roots with mower damage.	Remove to facilitate proposed development
T33	Cypress (Swamp)	15	A1	Early mature	> 40	Great form. Fine ornamental tree with high growth potential. Recently lost limb which should be pruned off properly.	Remove to facilitate proposed development

Tree No.	Species	Ht (m)	BS Cat	Age Class	Life Expect	Observation	Recommendations
TG2	Cypress	8	C1	Early mature	20 to 40	Boundary screen of closely planted conifers. Single Goat Willow evident to western end.	Remove to facilitate proposed development
TG5	Ash, Hawthorn, Privet, Elder	8	C1	Mature	20 to 40	Scrubby undergrowth area.	Remove to facilitate proposed development
TG8	Beech, Silver Birch and Cypress dominate.	10	B2	Mature	20 to 40	Group of mainly 3rd party trees running down boundary. Reasonable visual feature. Screening value. No access to fully inspect.	Remove to facilitate proposed development
SG1	Cotoneaster and Cherry Laurel	4	C1	Mature	20 to 40	Pruned to shape in places. Useful screen for 3rd party.	Remove to facilitate proposed development
H1	Hawthorn, Purple Plum, Sycamore & Fig	1.6	C1	Mature	20 to 40	Established hedge.	Remove to facilitate proposed development

Note: Birds - In the event future tree works are required to be completed between 1st March & the 31st July (inclusive) a due diligence check for nesting birds must be completed before work starts in order to comply with the Wildlife & Countryside Act 1981. This check should be recorded in the Site-Specific Risk Assessment. If active nests are found work should not take place until the young have fledged.

Note: Bats – It should be noted that in England and Wales, the relevant legislation is the Wildlife and Countryside Act (1981) (as amended); the Countryside and Rights of Way Act, 2000; the Natural Environment and Rural Communities Act (NERC, 2006); and by the Conservation of Habitats and Species Regulations (2010).

Appendix 4 - Tree Constraints Plan

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40	Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48	Q49	Q50	Q51	Q52	Q53	Q54	Q55	Q56	Q57	Q58	Q59	Q60	Q61	Q62	Q63	Q64	Q65	Q66	Q67	Q68	Q69	Q70	Q71	Q72	Q73	Q74	Q75	Q76	Q77	Q78	Q79	Q80	Q81	Q82	Q83	Q84	Q85	Q86	Q87	Q88	Q89	Q90	Q91	Q92	Q93	Q94	Q95	Q96	Q97	Q98	Q99	Q100
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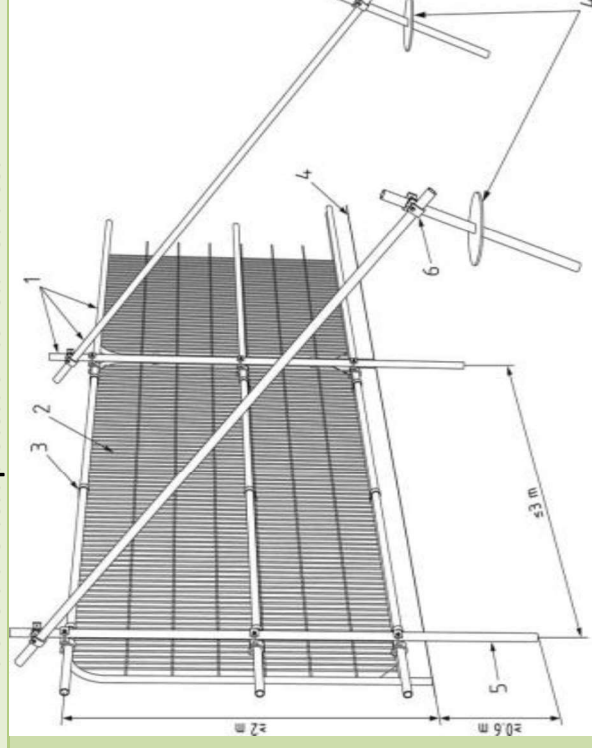
Figure 1: Aerial map of the study area showing the River Trent, Northwood Primary & District Hospital, and NHS Property Services Ltd. The map includes a key for symbols: Green circle for Category A (Tree of High Quality), Red circle for Category B (Tree of Medium Quality), Blue circle for Category C (Tree of Low Quality), and a Purple dashed circle for Category D (Tree of Very Low Quality). The map also shows the River Trent, Northwood Primary & District Hospital, and NHS Property Services Ltd. The map is titled 'Tree Constraint Plan (TCP)' and includes a scale bar (0 to 100m) and a north arrow.

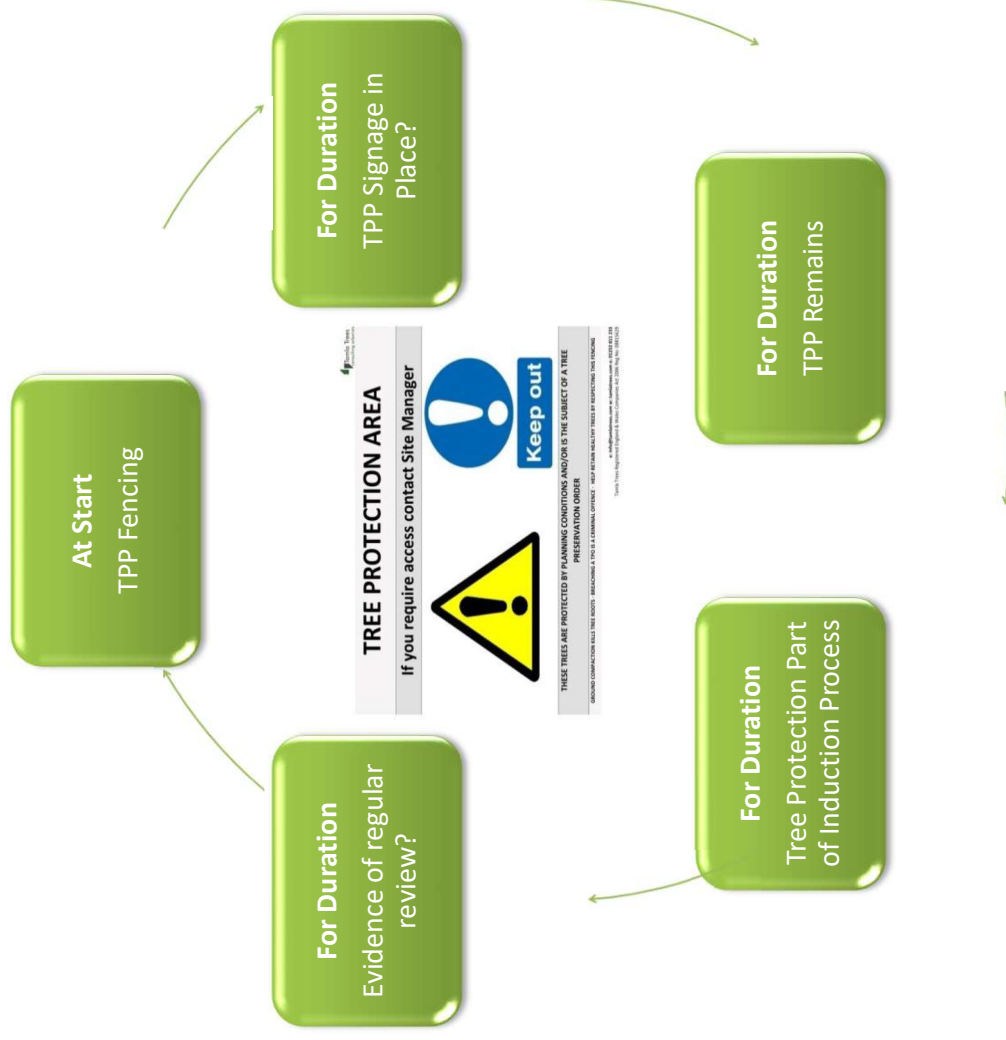
Appendix 5 - Tree Protection Plan

Tree protection is essential to successfully integrate the proposal into the surrounding trees. It is designed to manage the impact on the underlying soil and rooting environment. It must therefore be installed prior to any further site activity. Even apparently minimal tracking of the soil near trees has the capacity to irretrievably modify the soil environment to the detriment of tree health and stability.

All our fencing specifications accord with advice and guidance within BS 5837. Modifications to fence types are possible but should be discussed prior to implementation. In all other instances the form detailed below should be shown. This offers the best protection to retained trees.

- All tree protection must be in place prior to any site activities. It is recommended that this fencing is installed prior to any site works (including demolition).
- To be effective Tree Protection must remain in place for the duration of the development and form part of the site induction process.
- The warning signs (provided separately to A3 size with this report) should be fixed at 6/10m intervals to raise awareness of the fencing and its desired function.







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Tree Survey Drawing Key

See Tania Trees, Tree Survey for individual Tree Details

KEY

Please refer to Tania Trees report for details

Category A - Trees of high quality
Category B - moderate quality
Category C - low quality
Category U - Dead, Dying or Defect trees with <10 years retention value

- RPA - root protection area as defined by Table 2 BS 5837:2012
- Proposed removal - to facilitate development
- Site hoarding
- Parking surface laid over existing hard surface
- Building to be carefully demolished

REV AMENDMENTS DRAWN DATE AUTHD

PROJECT
Northwood, Pinner & District Hospital

CLIENT
NHS Property Services Ltd

DATE
Tree Protection Plan (TPP)

JOB	0237/AR	DATE	15/10/2021	REVISION	E
DATE	22/03/2021	TYPE	0237OP_TPP_02		

Tania Trees consulting arborists
Tel: 01252 811 233
Email: info@taniatrees.com
Web: www.taniatrees.com



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Tree Survey Drawing Key

Root Protection Area (m2)
Tree Canopy Extent
Stem Location - Coloured dots denote BS 5837 Category
Tree Number

See Tamla Trees, Tree Survey for individual Tree Details

KEY

Please refer to Tamla Trees report for details

Category A - Trees of high quality
Category B - moderate quality
Category C - low quality
Category U - Dead, Dying or Defect trees with <10 years retention value

RPA - root protection area as defined by Table 2 BS 5837:2012

Proposed removal - to facilitate development

Site hoarding

Parking surface laid over existing hard surface

REV	AMENDMENTS	DRAWN DATE	AUTHD
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PROJECT

Northwood, Pinner & District Hospital

CLIENT

NHS Property Services Ltd

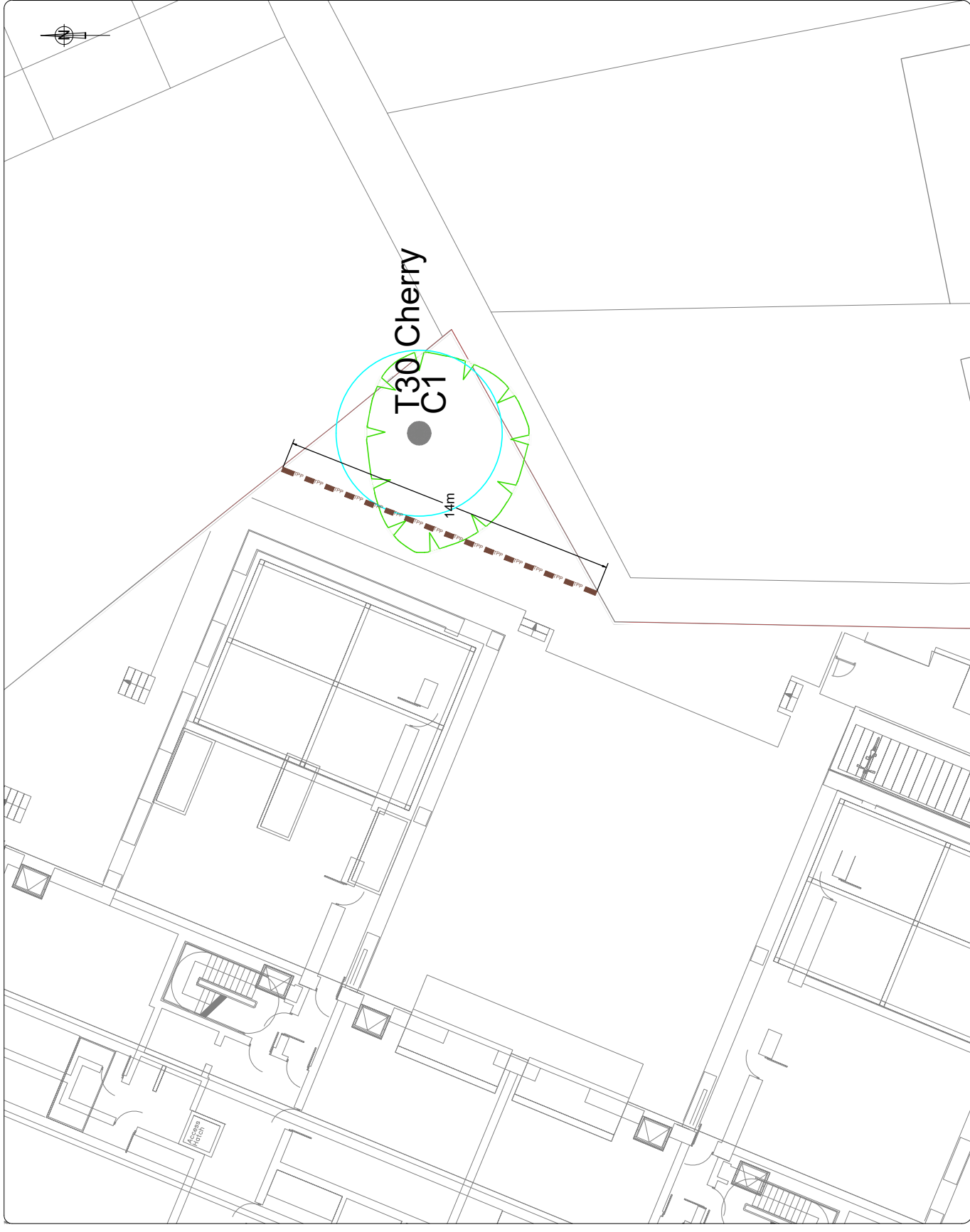
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Tree Protection Plan (TPP)

NO	DATE	BY	REV	DESCRIPTION
1	02/07/08	WJL	1	Initial design
2	22/03/2021	WJL	2	Revised design

Tamla Trees
consulting arborists

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Email: info@tamlatrees.com
Web: www.tamlatrees.com



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Tree Survey Drawing Key

See Tamla Trees, Tree Survey for Individual Tree Details

KEY

Please refer to Tamla Trees report for details

Category A - Trees of high quality
Category B - moderate quality
Category C - low quality
Category U - Dead, Dying or Defect trees with <10 years retention value

RPA - root protection area as defined by Table 2 BS 5837:2012

Proposed removal - to facilitate development

Location of protective fencing - Herras Panels (or similar)

Site hoarding

REV	AMENDMENTS	DRAWN DATE	AUTH'D
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PROJECT

Northwood, Pinner & District Hospital

CLIENT

NHS Property Services Ltd

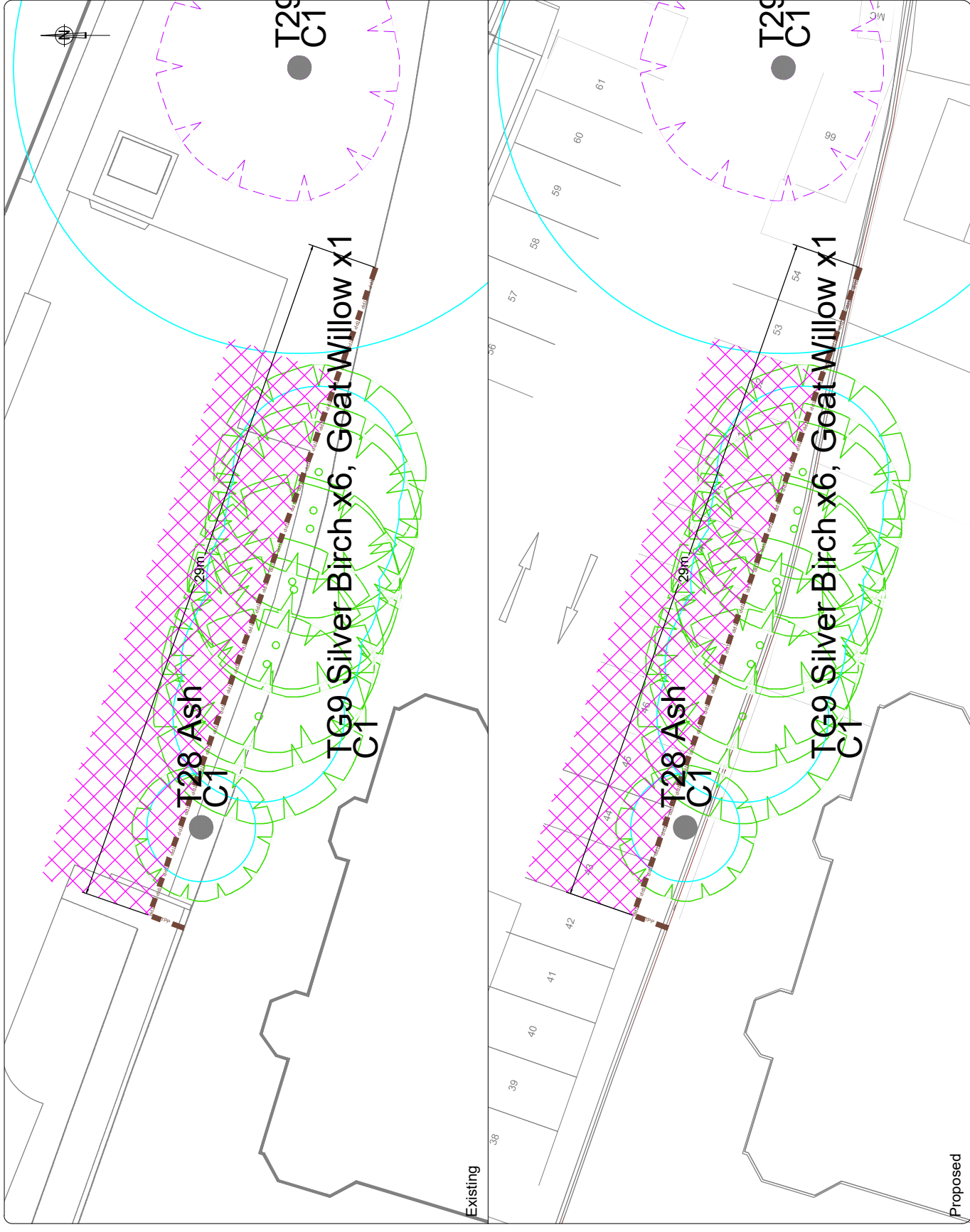
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Tree Protection Plan (TPP)

JOB	0237/AR	SCALE	1:150 @ A3	DATE	02/03/2021	REVISION	E
DATE	22/03/2021	TYPE	B				

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Web: www.tamlatrees.com

Tamla Trees
consulting arborists



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Tree Survey Drawing Key

Flood Protection Area m2
Tree Canopy Extent
Stem Location - Coloured dots denote BS 5837 Category
Tree Number

See Tamla Trees, Tree Survey for Individual Tree Details

KEY

Please refer to Tamla Trees report for details

Category A - Trees of high quality
Category B - moderate quality
Category C - low quality
Category U - Dead, Dying or Defect trees with <10 years retention value

RPA - root protection area as defined by Table 2 BS 5837:2012

Proposed removal - to facilitate development

Location of protective fencing - Herras Panels (or similar)

Site hoarding

Parking surface laid over existing hard surface

REV	AMENDMENTS	DRAWN DATE	AUTHD
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PROJECT

Northwood, Pinner & District Hospital

CLIENT

NHS Property Services Ltd

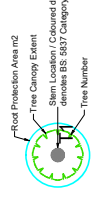
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JOB	0237/AR	DATE	22/03/2021
DATE	22/03/2021	TIME	15:00 @ A3
REVISION	0237OP_TPP_05	DATE	05/04/2021

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Email: info@tamlatrees.com
Web: www.tamlatrees.com

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Tree Survey Drawing Key



KEY

Please refer to Tamla Trees report for details

- Category A - Trees of high quality
- Category B - moderate quality
- Category C - low quality
- Category U - Dead, Dying or Defect trees with <10 years retention value

RPA - root protection area as defined by Table 2 BS 5837:2012

Proposed removal - to facilitate Development

Site hoarding

Parking surface laid over existing hard surface

Existing Hard Surface Retained

Existing boundary acting as protective fencing

REV AMENDMENTS

DRAWN DATE AUTHD

PROJECT

Northwood, Pinner & District Hospital

CLIENT

NHS Property Services Ltd

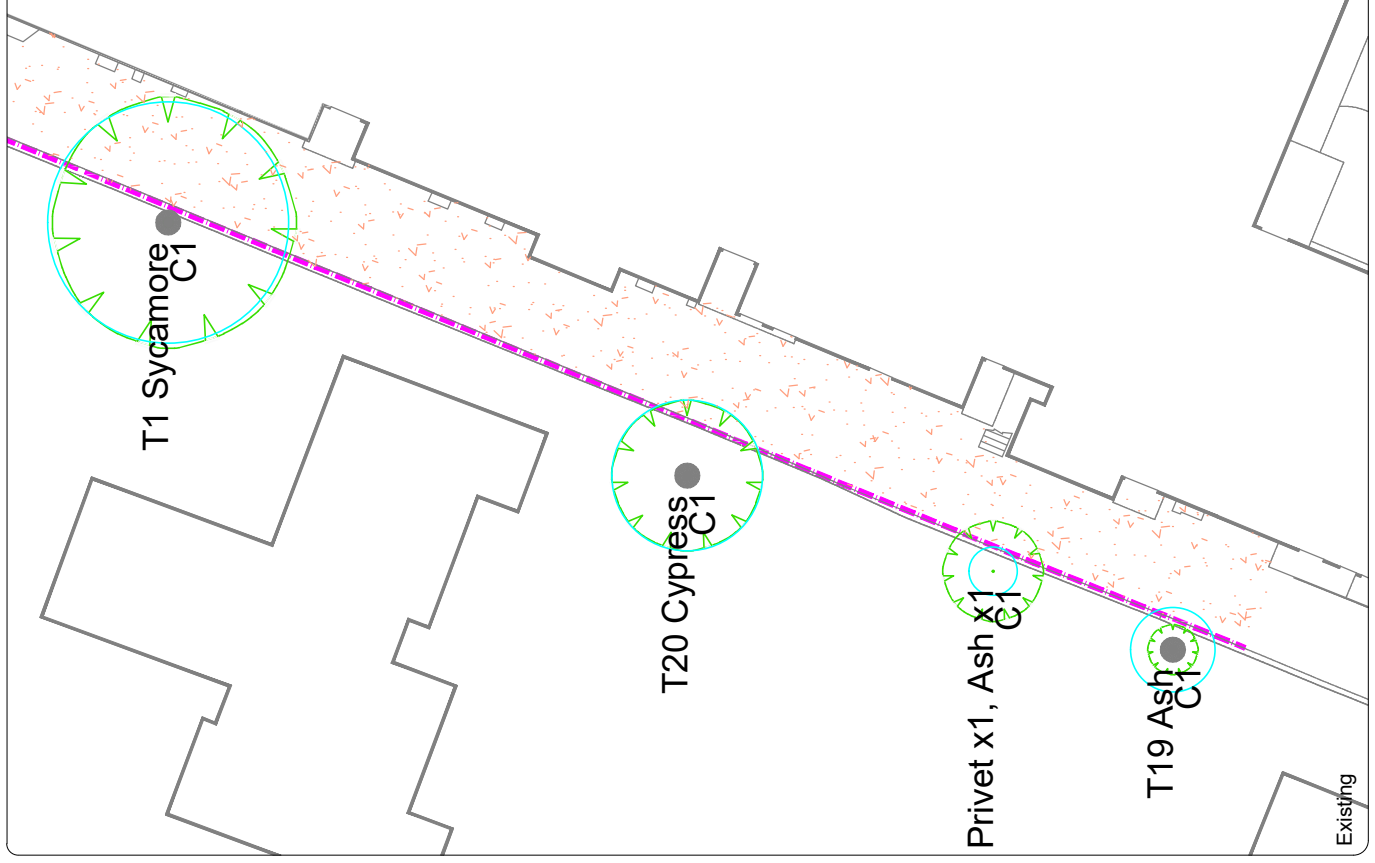
WTB

Tree Protection Plan (TPP)

NO	DATE	BY	REV	DESCRIPTION
1	02/07/19	AS		Issue for approval
2	22/03/2021	AS		Issue for approval

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Tamla Trees
consulting arborists



Appendix 6 – Site Photographs



Image 1 – Site frontage southern boundary (2017)