

ARBORICULTURAL IMPACT ASSESSMENT (AIA)



PROPOSED DEVELOPMENT AT

LYNEHAM,

WHISTON, PRESCOT

MERSEYSIDE

L35 3TN

PLA/0422/L35

19TH MAY 2022

1	CONTENTS	
2	Report caveats / Limitations.....	3
3	Qualifications of the author	5
4	Introduction	5
4.1	Brief	5
4.2	Site Specific Information.....	5
4.2.1	Location	5
4.2.2	Description	6
4.2.3	Topography.....	7
4.2.4	Soils.....	7
4.2.5	Statutory Controls	7
5	The proposed development.....	8
6	Tree Survey	9
6.1	Surveyor	9
6.2	Survey Parameters.....	9
6.3	Tree Categorisation.....	9
6.4	Tree Data Tables	11
6.5	Category Justification.....	16
6.5.1	Category 'A' trees.	16
6.5.2	Category 'B' trees	16
6.5.3	Category 'C' trees	16
6.5.4	Category 'U' trees	16
6.5.5	Groups of trees.....	16
6.5.6	Third party trees	16
6.6	Summary.....	16
7	Arboricultural Implication Assessment.....	17
7.1	Proposed Tree Removals	17
7.2	Root Protection Area (RPA) Incursions	18
7.3	Foundations.....	18
7.4	Surfaces.....	19
7.5	Services	19
7.6	Ground Level Changes.....	19
7.7	Shading	19
7.8	Construction Requirements	19
7.8.1	Access to and from the site	19
7.8.2	Site Compound Location.....	19

7.8.3	Materials Storage	20
7.8.4	Access around the site	20
7.8.5	Vehicular movements on site	20
7.9	Mitigation	20
8	Tree Protection during Construction	20
8.1	Protective Fencing.....	20
8.2	Temporary Ground Protection	21
8.3	Auditable/audited system of arboricultural site monitoring	21
9	Post Development Management	22
9.1	Soil compaction and remediation measures.....	22
10	Images	23
Table 1 - Tree Categorisation Summary.....		9
Table 2 - Tree Survey Data Tables		15
Table 3 - Proposed Tree Removal Table		17
Table 4 - RPA Incursion Summary Table.....		18
Table 5 - Site specific supervision		22
Figure 1- Map showing location of site (Site boundary marked in Red)		6
Figure 2 - Aerial view of site (boundary marked in red)		6
Figure 3 - BGS Soil Map for the location		7
Figure 4 - Screen Grab from Knowsley.gov.uk/my neighbourhood (04/04/2022)		8
Figure 5 - Proposed Site Plan (Drawing No. 418-1-PRE-002)		8
Figure 6 - Protective fencing recommendations taken from figure 2 of BS 5837:2012		21

APPENDIX 1 – ARBOR 001 (TREE SURVEY)

APPENDIX 2 – ARBOR 002 (TREE CONSTRAINTS PLAN)

APPENDIX 3 – ARBOR 003 (TREE PROTECTION PLAN)

APPENDIX 4 – ARBOR 004 (TREE SHADOW ARCS)

2 REPORT CAVEATS / LIMITATIONS

This report is not a Tree Risk Management Report or a Hazard Analysis Report and its use as such is invalid.

The trees have been assessed from ground level only. Assessment of condition is based on a visual tree assessment (VTA). No detailed inspection of the upper crown has been carried out. No decay detection equipment (destructive or non-destructive) has been used to further assess the condition of the trees, which is beyond the scope of the survey. Any dangerous trees requiring further assessment on safety grounds will be identified.

Tree dimensions were measured using a combination of a Trupulse 200 Laser Range Finder, a Leica Disto Laser Rangefinder and a Richter Diameter tape. All instruments were used in accordance with appropriate user guides.

Due to the changing nature of trees and other site circumstances, this report, and any recommendations made are limited to a 5-year period. Any alteration to the application site or any development proposals could change the current circumstances and may invalidate this report and any recommendations made. Should this be the case this report will require revision to reflect the development Proposals.

Trees are dynamic structures that can never be guaranteed 100% safe; even those in good condition can suffer damage under average conditions. Regular inspections can help to identify potential problems before they become acute.

A lack of recommended work does not imply that a tree is safe and likewise it should not be implied that a tree will be made safe following the completion of any recommended work.

Where tree surgery works have been identified these works are based on the assumption that planning is approved, no tree works should be undertaken prior to determination of this application without up to date confirmation of the Tree Preservation Order / Conservation Area Status of the vegetation.

All works should be undertaken in accordance with the appropriate Duty of Care. This should include, for example, site specific risk assessments and due diligence inspections for the presence of protected species. Any comment relating to 3rd party trees has been made without full access to the tree(s). Should these trees have any impact on the proposed development we would advise you to instruct us to contact the 3rd party and undertake further inspection work.

Please note no statutory control checks have been undertaken (unless specified).

No soil samples were taken, and no soils analysis was undertaken.

Any legal description or information given to Arbor Consultancy Limited is believed to be accurate.

Where solutions to arboricultural issues are specified which require the usage of a third party product or specialist design e.g., pile and beam foundations, no dig roadway construction etc. No liability is assumed for the performance or suitability of the product and specialist advice as to the suitability or installation of the product should be sought from the manufacturer or other specialist.

No responsibility is assumed by Arbor Consultancy Limited for legal matters that may arise from this report, and the consultant shall not be required to give testimony or to attend court unless additional contractual arrangements are made.

Any alteration or deletion from this report shall invalidate it as a whole.

3 QUALIFICATIONS OF THE AUTHOR

Giles Mercer is our Principal Arboricultural Consultant. He has a First Class Honours Degree in Arboriculture (BSc. Hons) awarded by the University of Central Lancashire.

He is a Professional Member of the Arboricultural Association and a Professional Member of the Consulting Arborist Society.

He has over 20 years of experience specializing in vegetation related clay shrinkage subsidence, tree failure, hazard evaluation, risk assessment related to trees and buildings, planning and development where trees are involved, protection of trees on or close to construction sites, personal accidents involving trees, insurance claims where tree failure is involved and or building damage occurs which may be attributed to the activity of trees, Tree Preservation Orders and Statutory Designations.

He has authored (and co-authored) a number of scientific papers in peer reviewed journals and articles in industry magazines. A list of publications is attached.

4 INTRODUCTION

4.1 BRIEF

This report has been commissioned by Mr David Belcher of the The Built Group Ltd. The scope of the report reflects his instructions.

The British Standard 5837: 2012 Trees in relation to design, demolition and construction – Recommendations provides a framework for considering trees in the planning process. It gives guidance on categorising the qualities of trees in order to enable decisions to be made as to which trees are appropriate for retention within a development. It then advises on options for protecting trees to be retained during the development (at all stages including demolition, construction and hard landscaping), and the means of incorporating trees into the developed landscape. This report complies with the recommendations of BS5837: 2012.

To prepare clear recommendations supported by relevant plans and data in order to facilitate consideration of the Arboricultural implications by the Local Planning Authority.

To consider the development proposals, identify areas where there are arboricultural issues and to recommend possible solutions.

To consider additional information supplied, to identify arboricultural issues arising from this information and to recommend possible solutions.

4.2 SITE SPECIFIC INFORMATION

4.2.1 LOCATION

The site is located approximately 1.0 km southwest of Whiston Hospital and 2.2km from the M57/M62 Junction, within the administrative boundaries of Knowsley Metropolitan Borough Council. The site is located on the corner of Haslemere (to the east) and Lyneham (to the south).

The application site is in a predominantly residential area although to the east (beyond Haslemere and the parallel Cumber Lane) there is the Whiston Wood Community Woodland.

The sites proposed residential development will integrate with the surrounding predominant land use.

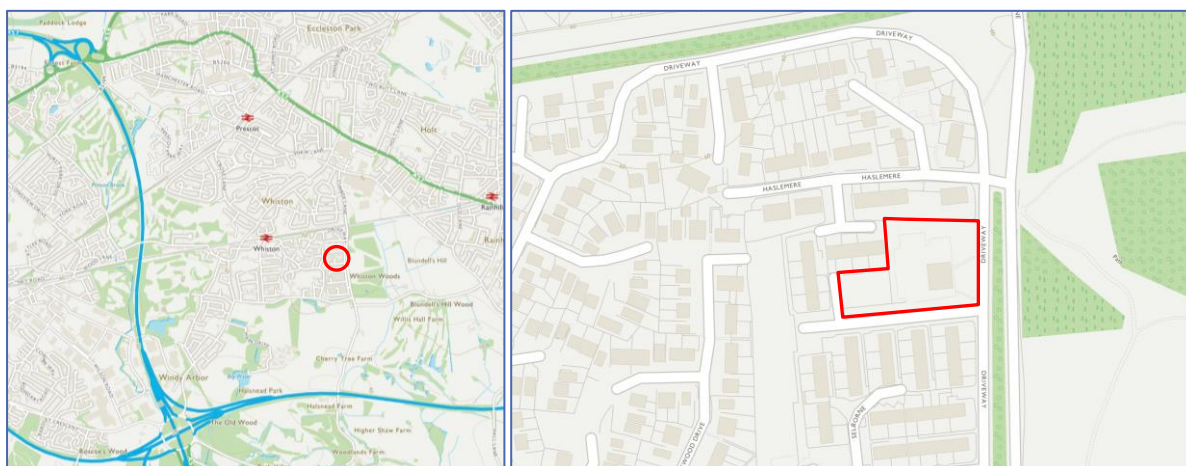


Figure 1- Map showing location of site (Site boundary marked in Red)

4.2.2 DESCRIPTION

The Site comprises an existing retail premise (two storey residential component with a single storey wraparound extension to south and west. There is a hard surfaced carpark to the shop bounded with concrete kerb edging. The site is generally unmanaged / overgrown although bounded with some relatively early mature trees. To the north there is an area of overgrown open space separated from the car park there is small belt of younger trees.



Figure 2 - Aerial view of site (boundary marked in red)

4.2.3 TOPOGRAPHY

The site is generally level with no adverse or unusual topographical features

4.2.4 SOILS

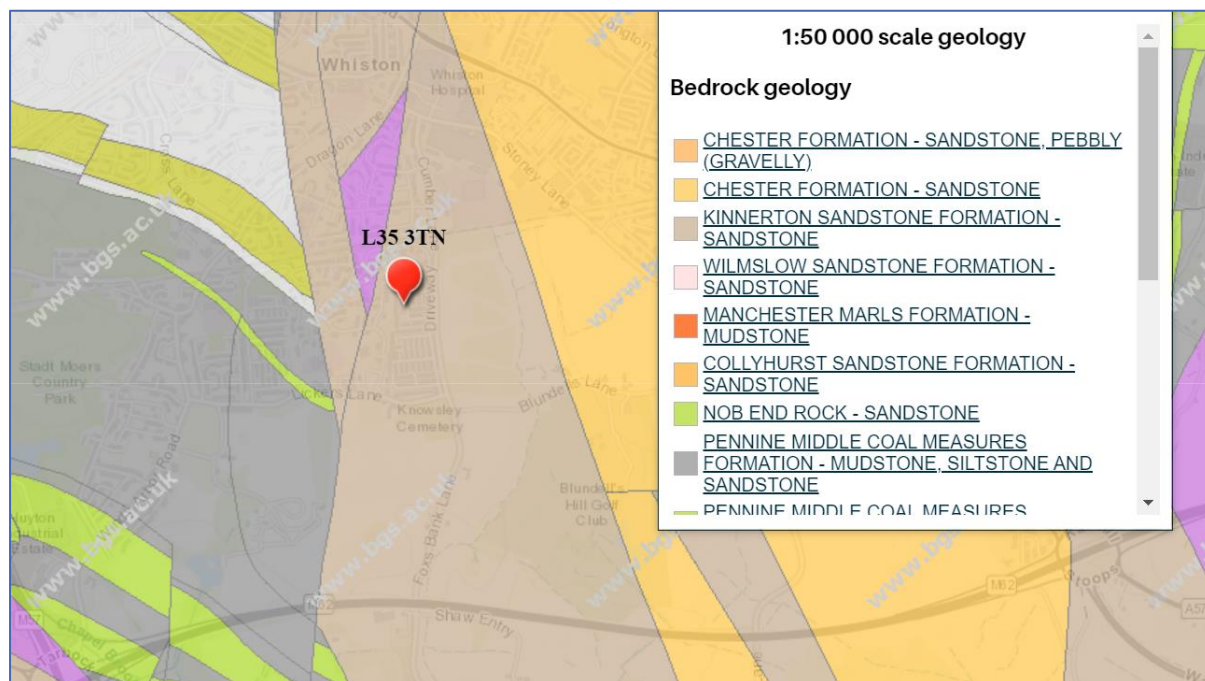


Figure 3 - BGS Soil Map for the location

BS5837: 2012 advises that soil properties should be considered as part of a tree survey report. This is necessary because trees can cause damage to structures founded on soils that shrink and swell with changes in moisture content (principally clays). Such movement is exacerbated by the influence of trees and therefore if a shrinkable soil is suspected foundations should be designed to extend below the likely zone of seasonal moisture change.

No Site Specific Investigation Data have been made available to us however, reference to the online 1:50 000 scale British Geological Survey map records the bedrock geology as a Kinnerton Sandstone Formation - Sandstone. Sedimentary Bedrock formed approximately 247 to 252 million years ago in the Triassic Period. Local environment previously dominated by hot deserts. No superficial deposits were recorded.

Whilst tree root activity can exacerbate changes in the volumetric properties of Clay soils i.e., cause them to shrink / swell (which can cause excessive localised soil shrinkage), In this instance the soils on which foundations will be founded are not considered to be plastic (shrinkable) and as such the risk of foundation movement attributable to clay shrinkage subsidence is negligible.

4.2.5 STATUTORY CONTROLS

We understand (Ref - Knowsley Council – My Neighbourhood Page on Website) that the Property is not listed nor located in a Conservation Area. No Tree Preservation Orders are indicated on the site (04/04/2022).

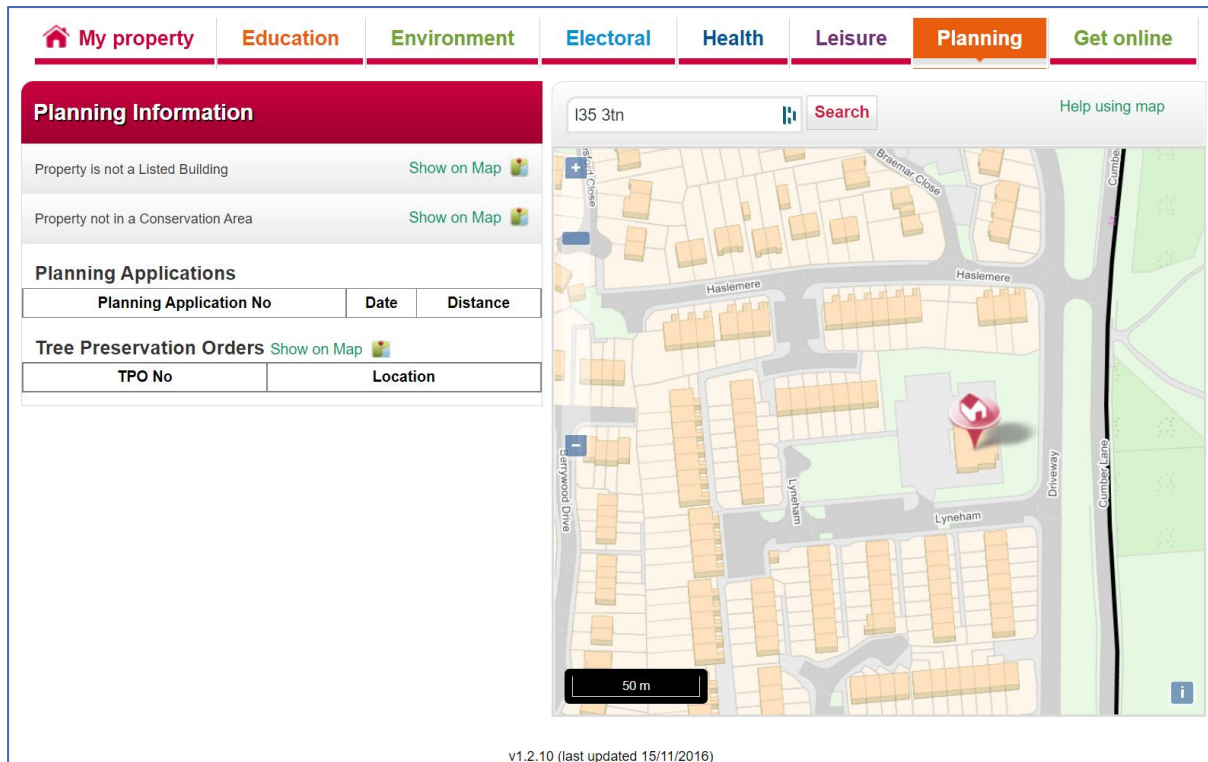


Figure 4 - Screen Grab from Knowsley.gov.uk/my neighbourhood (04/04/2022)

5 THE PROPOSED DEVELOPMENT

The development of eight 2 bedroom houses and twelve 2 bedroom cottage style apartments. Access to the development will be via a new entrance on to Haslemere, the existing entrance on to Lyneham and from the existing turning head on Lyneham to the west. all to be accessed via two vehicular accesses off Netherfield Lane.



Figure 5 - Proposed Site Plan (Drawing No. 418-1-PLN-002)

6 TREE SURVEY

6.1 SURVEYOR

The survey was undertaken by Giles Mercer B.SC. (Hons), M.Arbor.A on the 30th of March 2022. Weather conditions on the day were overcast with occasional light rain.

6.2 SURVEY PARAMETERS

All trees on site were inspected from ground level, using the Visual Tree Assessment (VTA) method. Any notable defects of trees were recorded, although the site survey did not constitute a full tree safety assessment. Tree heights and crown clearances were measured to the nearest 0.5 m with a clinometer. Crown spreads of trees were measured on their north, east, south and west aspects to the nearest 0.5 m. The Diameter at Breast Height (DBH) of trees was measured to the nearest 1 cm and was used to calculate the Root Protection Area (RPA) of trees using methods prescribed in BS 5837:2012.

6.3 TREE CATEGORISATION

In accordance with BS 5837:2012, trees were classified as either A, B, C or U using the criteria shown in Table 2.1. Trees were further classified by the subcategories 1, 2 and 3, depending upon whether they had mainly arboricultural, landscape, or cultural qualities. The additional subcategory does not affect the retention value of the tree, e.g. a Category A2 tree does not have a higher retention value than a Category A1 tree..

Category	Definition	Retention	Colour Code	Tree Numbers	Total
A	Trees of high quality with an estimated Remaining life expectancy of at least 40 years	Highly Desirable	Light Green	T10, T11	2
B	Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Desirable	Mid Blue	T1, T2, T3, T4, T5, T8, T9, T12, T16, T17, T18, T19	12
C	Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Feasible, but should be removed if posing a constraint to development	Grey	T7, T8, T13, T15, TG1	4 individual 1 group
U	Trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	Unfeasible	Dark Red	T14	1

Table 1 - Tree Categorisation Summary

6.4 TREE DATA TABLES

Ref	Species	Height (m)	Stem Diam (mm)	Radial Crown Spread (m)		Crown Height (m)	Age	Comments	Recommendations	ERC	Cat	RPA Radius (m)	RPA Area (m ²)
T1	Cherry (<i>Prunus spp.</i>)	13.8	335	N	3.4	2.0	EM	High pruned (alongside road and pavement). Multiple pruning wound encircling the stem at approximately 2m. Pruning wounds partially occluded although there is some evidence of stem swelling (thickening) in the area probably caused by the deposition of wound wood surrounding the coalescing decay pockets caused by the multiple pruning wounds.	Remove to facilitate development	20-40	B2	4.0	51
				E	4.4	(2* E)							
				S	5.4	4.5S to							
				W	2.7	major limb							
T2	Cherry (<i>Prunus spp.</i>)	12.5	335	N	3.2	4.0	EM	High pruned (alongside road and pavement). Multiple pruning wound encircling the stem at approximately 2m. Pruning wounds partially occluded although there is some evidence of stem swelling (thickening) in the area probably caused by the deposition of wound wood surrounding the coalescing decay pockets caused by the multiple pruning wounds.	Remove to facilitate development	20-40	B2	4.0	51
				E	3.3	(4.3 S)							
				S	4.8								
				W	4.1								
T3	Cherry (<i>Prunus spp.</i>)	12.0	345	N	3.0	2.0	EM	High pruned (alongside road and pavement). Multiple pruning wound encircling the stem at approximately 2m. Some epicormic growth surrounding the pruning points which creates a lower crown clearance. Pruning wounds partially occluded although there is some evidence of stem swelling (thickening) in the area probably caused by the deposition of wound wood surrounding the coalescing decay pockets caused by the multiple pruning wounds.	Remove to facilitate development	20-40	B2	4.1	54
				E	3.8	(2 S)							
				S	4.6	4.0S to							
				W	4.0	major limb							
T4	Cherry (<i>Prunus spp.</i>)	13.4	330	N	2.45	3.5	EM	High pruned (alongside road and pavement). Multiple pruning wound encircling the stem at approximately 2m. Pruning wounds partially occluded although there is some evidence of stem swelling (thickening) in the area probably caused by the deposition of wound wood surrounding the coalescing decay pockets caused by the multiple pruning wounds.	Remove to facilitate development	20-40	B2	4.0	49
				E	3.4	(4.0S)							
				S	4.4								
				W	2.5								

Ref	Species	Height (m)	Stem Diam (mm)	Radial Crown Spread (m)		Crown Height (m)	Age	Comments	Recommendations	ERC	Cat	RPA Radius (m)	RPA Area (m ²)
T5	Cherry (<i>Prunus spp.</i>)	12.7	400	N	2.7	2.5	EM	High pruned (alongside road and pavement). Multiple pruning wound encircling the stem at approximately 2m. Some epicormic growth surrounding the pruning points which creates a lower crown clearance. Pruning wounds partially occluded although there is some evidence of stem swelling (thickening) in the area probably caused by the deposition of wound wood surrounding the coalescing decay pockets caused by the multiple pruning wounds.	Remove to facilitate development	20-40	B2	4.8	72
				E	3.1	(4.3S)							
				S	5.7								
				W	4.2								
T6	Cherry (<i>Prunus spp.</i>)	12.1	380*	N	5.1	1.6	EM	Internal to the site. Ivy covered (detailed inspection not possible). Asymmetric crown because of proximity to the Willow (T7). Crown structure starts at circa 2.5m.	Remove to facilitate development	20-40	C2	4.6	55
				E	3.0*	(2.6W)							
				S	5.2								
				W	6.2								
T7	Willow (<i>Salix spp.</i>)	10.3	300* 300* 300*	N	6.0	0.7	EM	Third Party Tree Located to the rear of the boundary fence. Tri-stemmed from base (unable to inspect unions). No significant recent management. Partially ivy covered. Spreading asymmetric crown extending slightly into the site but could easily be pruned back to the boundary.	Reduce back to boundary	20+	C1	6.2	122
				E	6.0*	(2 W)							
				S	5.4								
				W	3.8								
T8	Sycamore (<i>Acer pseudoplatanus</i>)	12.0	300	N	3.0	1.4	EM	Stem bifurcates at 2.6m then the dominant leader further sub-divides at circa 3m. The initial bifurcation has an included union with the beginnings of 'Elephant Ears'. Low crown which could be easily crown lifted to provide clearance if necessary. Poor historic pruning stub at 2.3m.	Remove to facilitate development	20-40	B2	3.6	41
				E	3.7	(2.5E)							
				S	4.3								
				W	4.7								
T9	Sycamore (<i>Acer pseudoplatanus</i>)	12.8	360	N	4.9	1.5	EM	No significant visible defects. Single stemmed. Low crown which could be easily crown lifted to provide clearance if necessary. Minor damage to lower scaffold (probably vandalism). No significant visible defects	Remove to facilitate development	20-40	B2	4.3	59
				E	4.7	(2.2 S)							
				S	3.2								
				W	5.0								

Ref	Species	Height (m)	Stem Diam (mm)	Radial Crown Spread (m)		Crown Height (m)	Age	Comments	Recommendations	ERC	Cat	RPA Radius (m)	RPA Area (m ²)
T10	Oak (<i>Quercus sp.</i>)	11.0	275	N	5.0	1.8 (2.5 W)	EM	Nice specimen tree. Minor damage to lower scaffold (probably vandalism). Low crown which could be easily crown lifted to provide clearance if necessary. No significant visible defects	Retain and protect. Crown lift to 3m.	40+	A1	3.3	34
T11	Oak (<i>Quercus sp.</i>)	9.3	270	N	5.0*	1.0 (2 W)	EM	Nice specimen tree. Minor damage to lower scaffold (probably vandalism). Low crown which could be easily crown lifted to provide clearance if necessary. No significant visible defects	Retain and protect. Crown lift to 3m. (Given its proximity to the proposed development their may be undue pressure to prune this tree in the long term. As it is a young tree removal and replacement may be an alternative.	40+	A1	3.2	33
T12	Silver Birch (<i>Betula pendula</i>)	12.3	240	N	2.7*	2.0 (2 W)	EM	Nice specimen tree. Minor impact damage (in four areas from 0.5-1.6m) to stem (probably vandalism). No significant visible defects	Remove to facilitate development	20-40	B1	2.9	26
T13	Ash (<i>Fraxinus excelsior</i>)	11.9	275	N	3.5	2.0 (2.5 N)	EM	Probably self-set. Twin stemmed (co-dominant stems) from 1.9m (unions appears sound). No significant visible defects	Remove to facilitate development	20-40	C1	3.3	34
T14	London Plane (<i>Platanus x hispanica</i>)	5.2	60* ms	N	2.0	0.0 (n/a)	EM	Poor multi-stemmed specimen. Unmanaged regrowth from an old stump (average stem diameter 45mm).	Remove for Arboricultural Reasons	<10	U	1.8	10

Ref	Species	Height (m)	Stem Diam (mm)	Radial Crown Spread (m)		Crown Height (m)	Age	Comments	Recommendations	ERC	Cat	RPA Radius (m)	RPA Area (m ²)
T15	London Plane (<i>Platanus x hispanica</i>)	11.6	320	N	3.0	2.2	EM	Single stemmed. Historic pruning wounds (3) from 2.0m to 2.6m now occluded. Evidence of stem swelling (thickening) in the area probably caused by the deposition of wound wood surrounding the coalescing decay pockets caused by the multiple pruning wounds. Slight curve to stem.	Remove to facilitate development	20+	C1	3.8	46
				E	4.9	(3.5 W)							
				S	6.0								
				W	3.8								
T16	Lime (<i>Tilia x europaea</i>)	10.1	310	N	3.8	1.9	EM	Single stemmed with crown starting at circa 4m. Poor historic pruning to lower crown (stubs). Some minor deadwood and crossing branches. Bark stripping (vandalism) from circa 1.0-1.5m (incomplete so survivable). Epicormic growth to base (typical for species). No significant visible defects	Remove to facilitate development	20-40	B2	3.7	43
				E	3.6	(2.3 W)							
				S	2.7								
				W	3.6								
T17	Lime (<i>Tilia x europaea</i>)	10.8	300	N	2.1	1.9	EM	Single stemmed with crown starting at circa 4m. Poor historic pruning to lower crown (stubs). Some minor deadwood and crossing branches. Epicormic growth to base (typical for species). No significant visible defects	Remove to facilitate development	20-40	B2	3.6	41
				E	3.7	(2.3 W)							
				S	4.0								
				W	3.7								
T18	Lime (<i>Tilia x europaea</i>)	10.0	300	N	2.9	2.0	EM	Single stemmed with crown starting at circa 4m. Poor historic pruning to lower crown (stubs). Some minor deadwood and crossing branches. Epicormic growth to base (typical for species). No significant visible defects	Remove to facilitate development	20-40	B2	3.6	41
				E	3.8	(2.5 W)							
				S	4.3								
				W	4.1								
T19	Sycamore (<i>Acer pseudoplatanus</i>)	13.9	395	N	4.5	1.7	EM	Single stemmed with crown starting at circa 4.5m. Multiple historic pruning wounds from 2.0-3.0m with regrowth from the partially occluded wounds. No significant visible defects	Retain and protect.	20-40	B2	4.7	71
				E	4.0	(4.0 S)							
				S	3.7								
				W	4.1								

Ref	Species	Height (m)	Stem Diam (mm)	Radial Crown Spread (m)		Crown Height (m)	Age	Comments	Recommendations	ERC	Cat	RPA Radius (m)	RPA Area (m ²)
TG1	Mixed species Group	6.5	75* ms	N	2.0*	0.0 (n/a)	Y	Mixed species group located to the north of the car park (within the open space). Dominated by Willow with the occasional birch, Rose and Hawthorn. All components multi-stemmed varying from 25mm to 75mm. Poor specimens. No significant visible defects	Remove to facilitate development	20+	C2	Max 2.0	Max 13
				E	2.0*								
				S	2.0*								
				W	2.0*								

Table 2 - Tree Survey Data Tables

6.5 CATEGORY JUSTIFICATION

6.5.1 CATEGORY 'A' TREES.

Two trees on site were identified as Category A.

The Two Oak trees (T10 & T11) are young, unmolested trees and nice specimens. They have been categorised 'A' in the context of the current site use. However, while the trees in the short term will 'work' with the proposed development I believe that there will be increasing pressure to prune/remove the nearer (to the proposed development) of the two trees (T11). The trees are still comparatively young and while I believe that (T11) should be retained (for as long as possible), the Landscape scheme should allow for the potential future removal of this tree and compensate accordingly.

6.5.2 CATEGORY 'B' TREES

Twelve trees on site were identified as Category B.

The Cherries (T1, T2, T3, T4, T5) and the Sycamore (T19) have all been categorised as B. While they do fulfil the 'Landscape' criterion of Category 'A' trees in the BS:5837 Cascade Chart they do have defects arising from poor historic pruning (significant pruning wounds encircling the stem at the same level creating a coalesced decay pocket) which whilst manageable, reduces the SULE (Safe Useful Life Expectancy) of the trees to 20-40 years. The group would thus be categorised B/C. As the extent of decay and its impact on the future structural integrity of the trees has not been accurately determined (invasively or non-invasively), I have given the trees the higher categorisation.

The Lime trees T16, T17 and T18 do form an Arboricultural feature and whilst not in perfect condition they are clearly Category B.

6.5.3 CATEGORY 'C' TREES

Three trees on site were identified as Category C

6.5.4 CATEGORY 'U' TREES

One tree on site was identified as Category U

6.5.5 GROUPS OF TREES

One group of trees on site was identified as Category C

6.5.6 THIRD PARTY TREES

One third party tree was identified as Category C

6.6 SUMMARY

In total fourteen individual trees (T1, T2, T3, T4, T5, T6, T8, T9, T12, T13, T15, T16, T17 & T18) and one group of trees (TG1) would require removal in order to accommodate the development. One tree (T14) should be removed for Arboricultural Reasons.

7 ARBORICULTURAL IMPLICATION ASSESSMENT

The purpose of an arboricultural impact assessment (AIA) is to evaluate the direct and indirect effects of proposed development on trees and, where necessary, to consider appropriate mitigation. It should set out which, if any, trees are to be removed to facilitate the development and should consider the possible effects on retained trees of potentially damaging activities on the site (for example changes in ground level and installation of below ground services).

Requirements for access around trees should be considered and potential conflicts identified, for example, where branches overhang the development area and may require pruning.

Mitigation for any issues identified should be proposed and addressed in an arboricultural method statement (AMS).

The Arboricultural Impact Assessment (AIA) has been prepared based on the provided layout plans.

7.1 PROPOSED TREE REMOVALS

The following trees are proposed for removal in order to facilitate the development

Category	Definition	Retention	Colour Code	Tree Numbers	Total
A	Trees of high quality with an estimated Remaining life expectancy of at least 40 years	Highly Desirable	Light Green	n/a	0
B	Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Desirable	Mid Blue	T1, T2, T3, T4, T5, T8, T9, T12, T16, T17, T18.	11
C	Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	Feasible, but should be removed if posing a constraint to development	Grey	T6, T13, T15, TG1	3 individual 1 group

Table 3 - Proposed Tree Removal Table

Every effort has been made to reduce the removal of trees from the site. However, to mitigate the tree loss proposed, the Local Planning Authority is invited to secure a detailed Landscaping Proposal by way of Planning Condition. This may form part requirement to replace trees subject to statutory protection under The Town and Country Planning (Tree Preservation) (England) Regulations 2012.

7.2 ROOT PROTECTION AREA (RPA) INCURSIONS

The following incursions into the RPA's of trees to be retained have been identified:

Category	Definition	Tree Numbers	Total
A	Trees of high quality with an estimated Remaining life expectancy of at least 40 years	n/a	0
B	Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	n/a	0
C	Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	T7	1

Table 4 - RPA Incursion Summary Table

The foundations of the apartment block to the northeast of the site extend into the RPA of the third party Willow tree (T7).

7.3 FOUNDATIONS

The foundations for the apartment block to the northeast of the site extend c 3.3m in to the RPA of the third party Willow (T7) and typical strip foundations would effectively compromise 20.26 m² (or 16.61%) of the 122 m² (100%) calculated RPA.

The Standard allows for deviation in the RPA from the original circular plot however, it cautions that the modifications should take account of the following factors whilst still providing adequate protection for the root system:

- a) the morphology and disposition of the roots, when influenced by past or existing site conditions (e.g. the presence of roads, structures and underground apparatus);
- b) topography and drainage;
- c) the soil type and structure;
- d) the likely tolerance of the tree to root disturbance or damage, based on factors such as species, age, condition and past management.

In this instance the affected tree is an early mature self-set (presumed) Goat Willow of low quality. It is younger than the Cherry trees (T1 & T6) located within the site and is likely to have an asymmetric root system biased towards the gardens to the north of the site where there is less competition for water / nutrients etc. This asymmetry is mirrored in the crown (which is another indicator of the relative ages of the trees – the willow crown is asymmetric, growing around the Cherries).

Matheny & Clark (1998) ranked common tree species in respect of their tolerance to construction damage. Survival rates are high for resistant species and low for susceptible species with the same level of damage.

Willow is identified as a species 'Resistant' to construction damage.

While demonstrating the likelihood of an asymmetric RPA biased away from the site it would be prudent to assume that there may still be roots proximal to the proposed foundations.

The standard states that *'If operations within the RPA are proposed, the project arboriculturist should:*

a) demonstrate that the tree(s) can remain viable and that the area lost to encroachment can be compensated for elsewhere, contiguous with its RPA;

b) propose a series of mitigation measures to improve the soil environment that is used by the tree for growth'

I believe that we have demonstrated that the tree can remain viable (Matheny & Clark ranking) and that the area lost to encroachment is compensated for elsewhere (asymmetric rooting biased to the north).

In mitigation, to improve the soil environment (on-site) used by the tree we propose post development soil amelioration to include Airspade decompaction, tilling and soil enrichment (activated Biochar).

7.4 SURFACES

The proposed location of hard surfaces do not impact on the RPA of retained trees.

7.5 SERVICES

At this stage we have not been provided with details of the locations of service runs (electric / communication / water / drainage) and are unable to comment on any Arboricultural Impact.

In general, however, when designing any underground services scheme within, or in close proximity to, retained trees RPA's, guidance from National Joint Utilities Group 'Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees. Volume 4, issue 2' should be reviewed and implemented (with Arboricultural input in the form of a Site Specific Arboricultural Method Statement (AMS)).

7.6 GROUND LEVEL CHANGES

No level changes are necessary within the RPA of retained trees.

7.7 SHADING

Shading is not considered to be an issue on this site. Tree Shadow shading arcs are displayed on Arbor 004 – Tree Shadow Arcs.

7.8 CONSTRUCTION REQUIREMENTS

The Standard identifies that the working space and access space need for the construction of the proposed development should be considered and appropriately managed.

7.8.1 ACCESS TO AND FROM THE SITE

No pruning work is required to facilitate the proposed development as there is sufficient space between the buildings and retained trees for all works to take place without conflicts arising.

7.8.2 SITE COMPOUND LOCATION

At this stage we have not been provided with any specific information regarding the site compound location and as such are unable to comment on any Arboricultural Impact however, there is plenty of space on site to accommodate a compound without Arboricultural Impact.

7.8.3 MATERIALS STORAGE

No materials will be stored within the RPA of retained trees.

7.8.4 ACCESS AROUND THE SITE

There will be no requirement to alter / move any tree protection to facilitate movement around site.

7.8.5 VEHICULAR MOVEMENTS ON SITE

At this stage we do not have any information regards vehicular movements on site however, we do not envisage any Arboricultural issues.

7.9 MITIGATION

A landscape planting scheme to address the removal of trees required to facilitate the development has been prepared by the Project Architects.

8 TREE PROTECTION DURING CONSTRUCTION

8.1 PROTECTIVE FENCING

The exclusion zones as defined in this report will be protected with fencing. The site is open and we do not believe that protection of the entire site is necessary. We have indicated on the Tree Protection plan (Arbor 003 - Tree Protection Plan) where we believe additional precautions (Heras style fencing) should be installed. In other areas the trees are protected by existing boundary fencing and in our opinion, this will be sufficient to protect the trees off site. Where additional fencing has been specified the fencing is to be strong enough to resist impacts and suitable to the degree of construction activity on the site and to be in accordance with that specified within BS5837:2012.

All fencing will be in place prior to any other development work (with the exception of necessary tree works) commencing on site. Such fencing will therefore be erected before any materials or machinery is brought onto site. Once erected the fences will not be moved or altered in any way without prior consultation with the Local Planning Authority other than for operations detailed in this report. If the fencing is damaged in any way, it will be re-instated to its original condition before construction work can re-commence Notices will be erected on the fencing stating 'Protected Area – No Operations within Fenced Area'. Protective fences shall be maintained in situ until all equipment, machinery and surplus materials have been removed from the site. Nothing will be stored or placed in any area fenced in accordance with this condition and the ground levels within those areas shall not be altered, nor shall any excavation be made other than those detailed in this report, without the written consent of the Local Planning Authority.

The total exclusion zones are marked on the accompanying drawing Arbor 003 - Tree Protection Plan. British Standard 5837:2012 indicates the recommended areas for the Root Protection Areas (RPA) which should be enforced with protective fencing. Specifications within BS5837:2012 inform our recommendations for both the fencing type as detailed below (9.5) and the location of this fencing which given the works within the RPA is located at the point where works within the RPA stop.

All protective fencing (except where specified above) is to be constructed in accordance with BS:5837 (2012) – specification reproduced below.

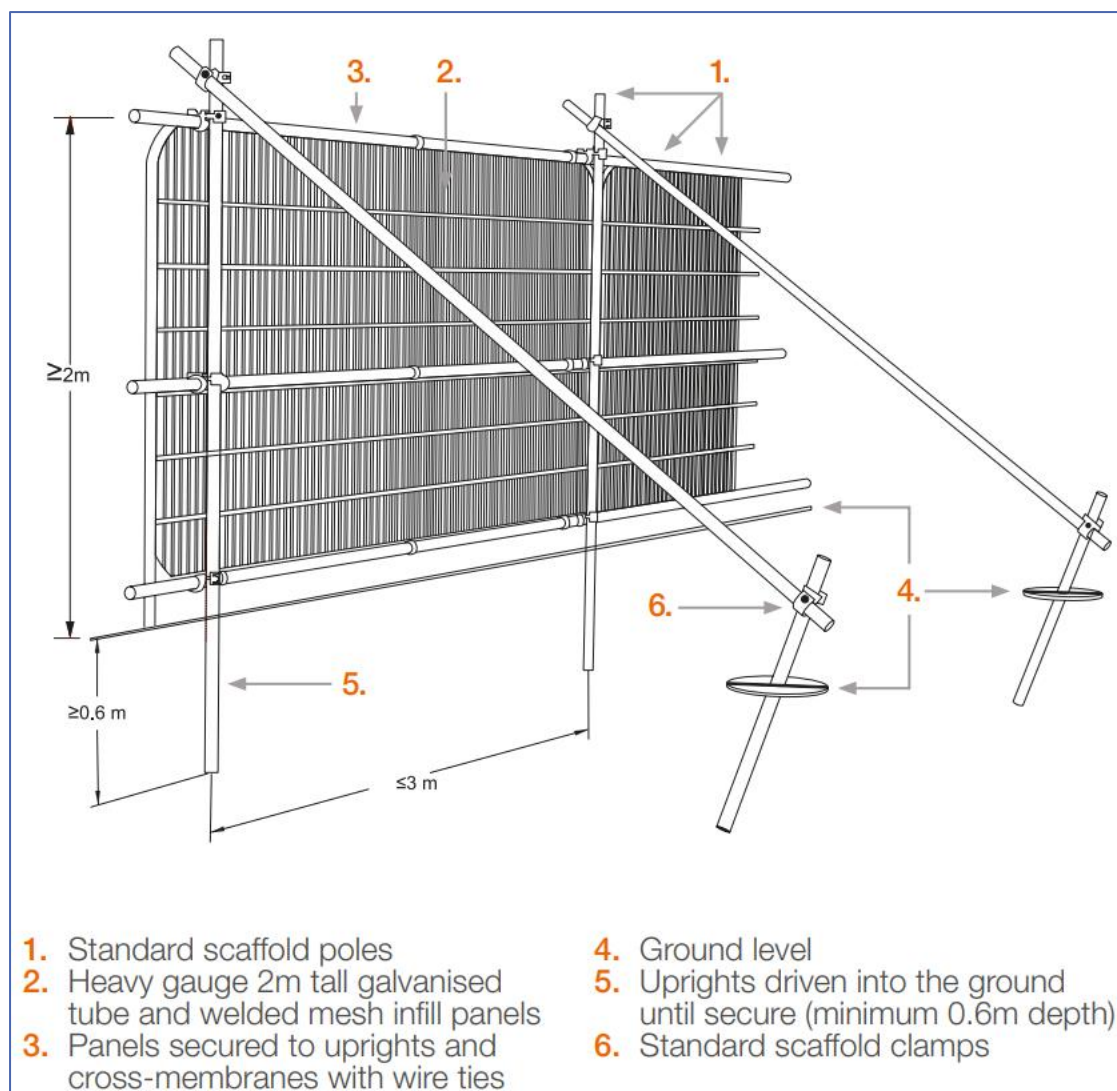


Figure 6 - Protective fencing recommendations taken from figure 2 of BS 5837:2012

8.2 TEMPORARY GROUND PROTECTION

No temporary ground protection is necessary.

8.3 AUDITABLE/AUDITED SYSTEM OF ARBORICULTURAL SITE MONITORING

Wherever trees on or adjacent to a site have been identified within the tree protection plan for protective measures, there should be an auditable system of arboricultural site monitoring. This should extend to arboricultural supervision whenever construction and development activity is to take place within or adjacent to any RPA.

NOTE Existing planning regulations include the provision for local authorities to enforce planning requirements. The project arboriculturist appointed by the developer can help monitor site activity, but enforcement is the responsibility of the local authority.

A series of site supervisions is considered appropriate to ensure tree protection measures are maintained and kept in-situ for the duration of the project. The supervisions schedule should be developed upon approval of the application and should encompass input from all relevant parties concerned with the project.

The Local Planning Authority is invited to secure the following schedule by way of Planning Condition.

A typical site supervision schedule is reproduced below in Table 5.

Phase No	Activity	Nominated person(s)	Stage
1	Pre-commencement meeting	Project manager, contractor's site manager and arboricultural consultant.	Prior to the commencement of any development including demolition and site set-up
2	Tree Awareness – Site Induction	Site manager, arboricultural consultant and construction operatives.	At pre-commencement meeting and prior to all construction operatives commencing work on site.
3	Installation of tree protection measures in compliance with approved reports and plans	Site Manager	During Site Set-Up
4	Pre-commencement tree protection inspection meeting.	Site manager, arboricultural consultant and construction operatives.	Prior to the commencement of any development (including demolition).
5	Completion	Arboricultural consultant	At end of works to confirm that tree protection may be removed
6	Post development	Arboricultural consultant	After removal of tree protection to identify any requirement for site remediation

Table 5 - Site specific supervision

9 POST DEVELOPMENT MANAGEMENT

9.1 SOIL COMPACTION AND REMEDIATION MEASURES

Airspade decompaction, tilling and soil enrichment (with activated Biochar) is proposed in the areas surrounding the Oaks (T10 & T11) and the Willow (T7).

10 IMAGES



Lime trees T16, T17 & T18



Bark damage to Lime tree T16



Plan tree (T15)



Multiple pruning wounds (T15)



Plane (T14)



Plane (T14) Regrowth from old stump



Mixed species group (TG1)



Cherries (T1 – T5) and Sycamore (T19)



Ash tree (T13)



Ash tree (T13) scaffold union



Mixed species group (TG1)



Birch (T12)



Stem damage to Birch (T12)



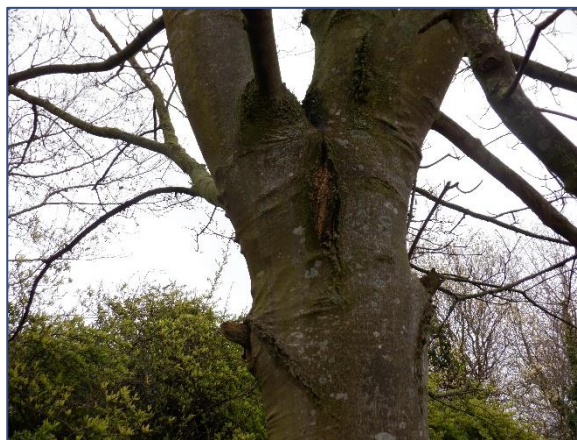
Oak (T11)



Oaks (T11 & T12)



Sycamore (T8 & T9)



Included union (T8)



Cherry (T6) and Willow (T7)



Willow (T7) with Cherry (T6) in foreground



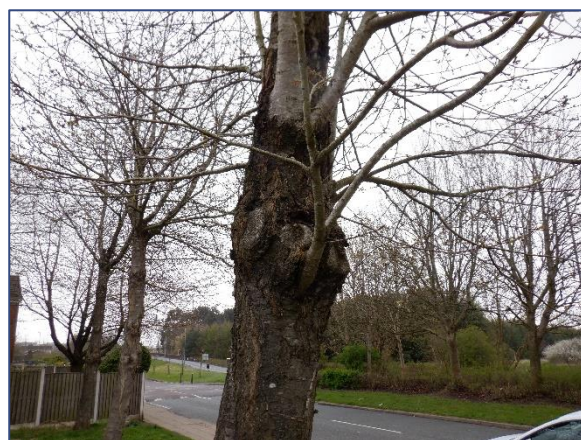
Cherries (T1 & T2)



Typical pruning wounds to Cherries (T1 shown)



Sycamore (T19)



Pruning wounds to Cherry (T3)



Typical Cherry pruning wounds.

Proposed development at Lyneham, Whiston

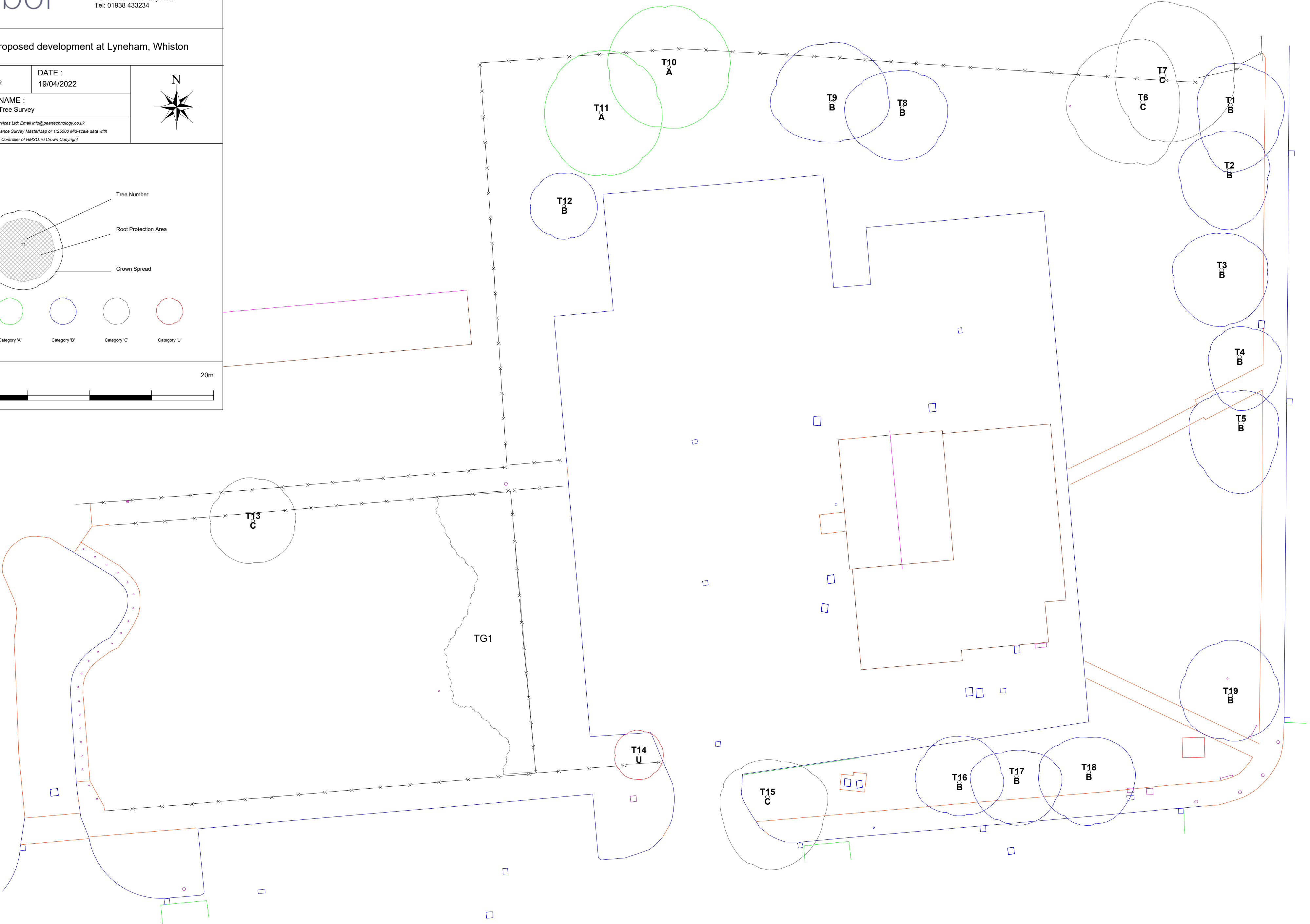
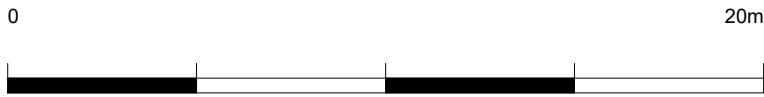
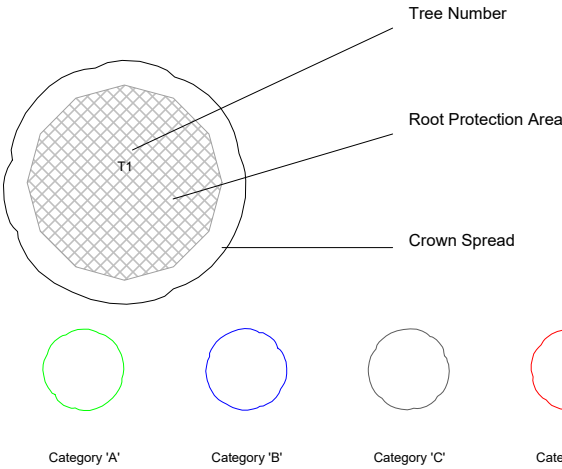
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DATE :
19/04/2022



MAP FILENAME :
Arbor 001 - Tree Survey

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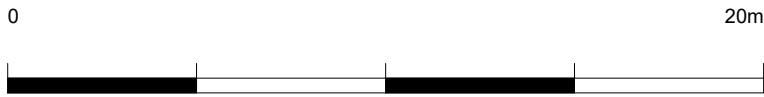
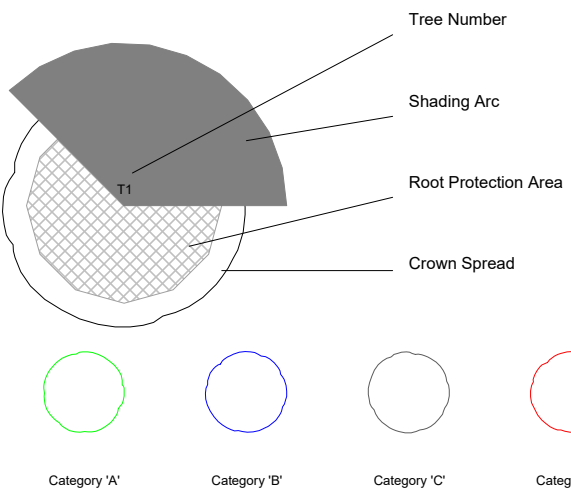
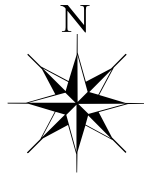
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MAP FILENAME :
Arbor 002 - Tree Constraints Plan

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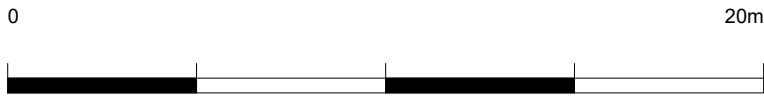
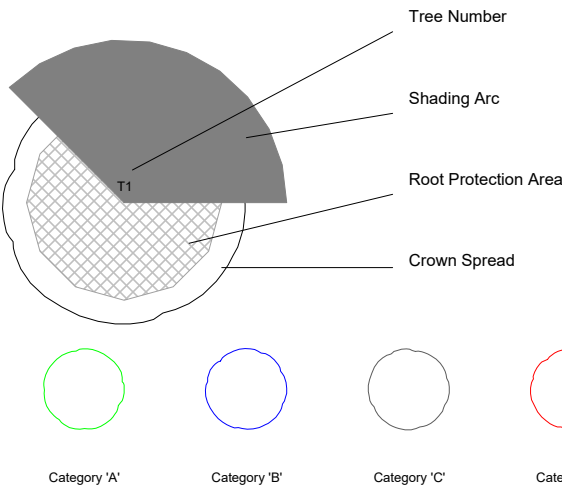
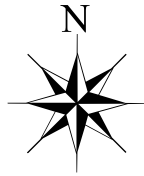
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Arbor 003 - Tree Protection Plan

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Protective Fencing



Proposed development at Lyneham, Whiston

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MAP FILENAME :
Arbor 004 - Tree Shadow Arcs

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