

BS5837:2012 TREE SURVEY / Arboricultural Impact Assessment

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Site Address:
FS304 Levenshulme Service Station
Stockport Road, Manchester M19 2RE



Client:

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Version 2. Apr 2022

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Site

Site: FS304 Levenshulme Service Station, Stockport Road, Manchester M19 2RE

Inspection date: 15th July 2021

Inspected by: Steve Launchbury

1.0 Terms of Reference

I am instructed by MBH Design Studio Ltd to carry out a BS5837:2012 survey at the above address.

This report contains survey information in accordance with BS 5837:2012 Trees in Relation to design, demolition and construction – Recommendations.

It details the quality and the value of the trees on site or immediately adjacent to the proposed development site.

Decisions can then be made whether to keep or remove trees or adjust the development to take advantage of the trees.

Remedial or other works may also be recommended.

A site visit was carried on 15th July 2021 to survey the Petrol filling Site (PFS), survey the trees for a Tree Constraints Survey, Overlay the Proposed design, detail tree retention, removal and detail protection measures required during construction.

13 individual trees and one group of trees were noted on site.

They have been categorized as follows:

BS 5837:2012 Category B, 1 tree

BS 5837:2012 Category C, 11 trees and one group

BS 5837:2012 Category U, 1 tree

Trees or groups of trees that are categorized A or B should be ideally considered as constraints to development and every effort should be made to keep them within the design. Trees categorized C will not usually be seen as a constraint unless by virtue of for example grouping, they attain a higher categorization. Trees categorized U are rarely a constraint to development and may generally be felled.

Steve Launchbury of Alltree Consultancy Ltd trained at Kew Gardens in Horticulture in the early 80's and specialised in Arboriculture.

Since then he has worked in the industry for over 35 years, gaining further professional qualifications including passing the Professional Tree Inspection course by Lantra.

2.0 General Information

2.1 The Brief

Visit site, survey the area proposed for development of an Electric Vehicle Charging facility. Survey the trees for a Tree Constraints Survey, Overlay the proposed design on to the Tree Constraints Survey, detail tree retention, removal and detail protection measures required during construction.

2.2 Scope of Report

This report is a preliminary report and as such did not entail an examination of the root system, did not ascend the tree or use internal decay detection equipment. Further inspections may be required as a result of these preliminary findings.

2.3 References

The British Standard Institute publication BS 5837:2012 'Trees in relation to design, demolition and construction - Recommendations' is the basis for this report.

2.4 List of relevant documents provided by the client:

13664 - P02 - 304 - Proposed Site Layout (Rev.C).pdf

2.5 Limitations

The information contained in this report is for the use of the client for whom it was prepared.

The contents are copyright and may not be used by third parties without written consent from Alltree Consultancy Ltd

This document is a report identifying trees, their locations and their condition in respect of planning.

It is not a tree health or safety report, it has not been prepared for use in a mortgage application or for insurance claims.

Detailed inspection, aerial access, drillings and soundings were not done for this report.

A tree owner is advised to have their trees regularly inspected, and again after strong winds or other severe weather.

This report is valid for one year.

2.6 Tree Preservation Orders

During the Planning process, trees on site are protected until any planning proposals have run their course.

It is recommended to liaise with the Local Planning Authority, Manchester City Council before any tree-works are carried out.

2.7 Disclaimer

This report was prepared for the named client and the Local Authority Planning Department.

This report does not constitute advice to any third party not directly involved. No liability for any loss or damage will be accepted from any third party reliant on this report who is able to access the content by any means.

3.0 The Tree Survey

Methodology

Data is collected in accordance with BS5837 requirements.

All data is collected from ground level without climbing or other potentially invasive methods including digging to expose the root system.

Tools normally used are a diameter tape, laser measure and a handheld GPS data capture device.

Heights are also estimated using a surveyor's pole next to the tree.

Measurements

Where there is no access into the next door property, measurements are estimated where 'hands on' measuring is not possible.

Complete accurate tree data is therefore not possible for trees on adjoining properties unless there is access granted and no reliance should therefore be made on the limited data possible.

Parts of the tree obscured by ivy or other climbing plants or materials cannot be assessed accurately and no reliance must be made without further inspection.

Data is plotted using PT-Mapper Professional from Pear Technology.

Where tree canopies are symmetrical, one measurement is taken of the radius. Where the crown is asymmetrical, readings are taken at North, East and South. These will give a general idea of the shape as a representation.

Tree stems are measured at 1.5m above ground level.

A Root Protection Zone figure is derived from this reading with variations for multiple stems.

Rooting Zone

Ground features or obstructions may limit or encourage root spread into an asymmetrical area rather than the plotted area.

The plotted data will show the Root Protection Area as an idealized area and must be subject to confirmation or otherwise by hand dug trial pits if required.

For the Constraints survey the trees are recorded as at the present with no reference to any proposed plan or development.

For the Arboricultural Impact Assessment, the tree data is used where applicable in conjunction with the proposed construction layout to establish Tree Protection requirements.

The survey data will detail the recorded measurements.

4.0 Observations and Discussion

Category A and B trees should normally be retained and be a constraint to development. Category U trees can normally be removed as good Arboricultural practice. Any trees within neighbouring properties that affect or are affected by a proposed development may then be subject to negotiation.

Root Protection Areas are recommendations due to the difficulty of mapping the extent of the root system. Hand digging is recommended to locate the main roots if required.

Ideally any conflicts with trees (roots, canopies, and trunks) should be designed out with careful consideration of building location and size and special design arrangements where required. Trees that overhang or are close to a new building are often subject to excessive pruning over time or even removal.

Surgery may be required to trees adjacent to new structures, but this should be kept to a minimum due to the potential adverse long term health impact and retention of the tree. All surgery works must be agreed beforehand and must conform to BS3998:2010

Before any works (including demolition) commence on site, storage of materials, or changes of levels, a plan must be submitted to and approved by the Planning Authority. Protective fencing that is required must be set up and remain operational and not repositioned without the advice of the Arboricultural Consultant.

Consent for any works to protected trees (either Conservation Area, Tree Preservation Order or Planning Conditions) must be obtained prior to being carried out. If the trees are in adjoining properties under third party ownership, permission must be obtained in writing from the tree owner in addition.

The site is effectively an isosceles triangle with the northern end a narrow triangular grassy area set in the angle between Stockport Road and Cringle Road. Set around the perimeter of this triangular section is a group of semi mature Birch, Field Maple, Ash, Goat Willow and Hawthorn, all Category C. Towards the west of the main site against Cringle Road is a line of mature Birch Category C and an (early) mature Oak tree Category B.

Against the edge of the neighbouring properties to the east of the site is a mature Cherry Category U in poor condition with a large Ganoderma fungus at the base.

Adjacent to the customer parking is a large mature Goat Willow, growing out on a lean to the car parking. This tree is full mature with limited safe useful life.

G14 is a densely planted group of Birches that are crowded, leading individually to bad form. The edge trees are typical edge trees with branches towards the outside of the group.

5.0 Arboricultural Impact Assessment

Implementation of the proposed design as detailed in 13664 - P02 - 304 - Proposed Site Layout (Rev.C).pdf will require the removal of a few of the trees on site.

The Survey Map – Design Overlay shows the trees that are likely to be affected.

The Survey Map Tree Removal, details the trees to be removed and other trees that may be retained.

Tree Removal, Retention (and Treeworks Required)		
Tree Id	Removal Required ?	Retention possible, Minor works required
T1 Birch		Retain
T2 Field Maple		Retain
T3 Ash		Retain, Raise the crown to 4m and a light reduction required against the GRP enclosure to allow for installation
T4 Ash		Retain, Raise the crown to 4m and a light reduction required against the GRP enclosure to allow for installation
T5 Field Maple		Retain, Raise the crown to 4m and a light reduction required against the GRP enclosure to allow for installation
T6 Hawthorn		Retain
T7 Hawthorn		Retain
T8 Birch		Raise Crown
T9 Goat Willow	Remove	
T10 Birch		Raise Crown
T11 Oak		Raise Crown
T12 Cherry	Remove	
T13 Goat Willow	Remove	
G14 Birch Group	Remove	

Trees T1 to T7 to be retained

The remainder of the trees, are required to be removed to realise the development of the EV Charging capability for the PFS.

T8 and T10 are mature Birch that have an expected life of 10 to 20 years. They are required to have their crown lightly raised to install the EV Charging bays.

T11 is and Early Mature Oak that will required to have its crown lightly raised to allow the installation of the EV Charging Bays.

T12 Cherry should be removed as a matter of normal tree maintenance due to the basal decay caused by the fungus Ganoderma.

T13 is a full mature Goat Willow, Single trunk, bifurcating inclined with a heavy lean to the PFS hard standing. There is limited safe useful life for this tree. The recommendation is that while it may last 10years or more, it is becoming an increasing liability and should be removed regardless of any proposed development.

The group of Birch G14 is recommended to be removed as a group. The planting is dense, the growth is therefore affected in each individual tree. Removal of just a selected few to install the Vac unit would damage the roots of any remaining trees, hence removal of the group as a whole.

While on site, as an aside, at the base of T13 and behind G14 would appear to be a dumping ground and possibly a shelter of some kind?

Opening the area up with the redevelopment would solve this potential problem.

Mitigation Planting

Space for replanting is at a premium and is unlikely to allow for any mitigation planting.

6.0 Tree Protection

Tree Protection is required to protect the retained trees and their Root Protection Areas

Fencing extracts taken from BS5837:2012 to show a fencing example and stabilization methods.

Figure 2 Default specification for protective barrier

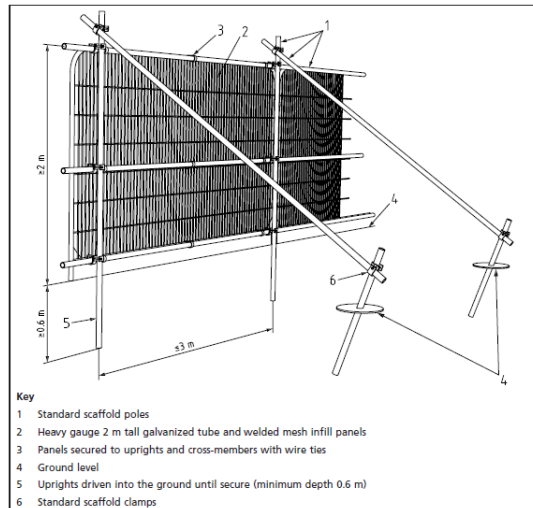
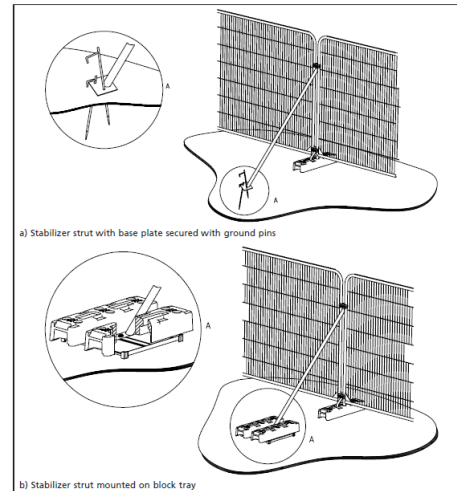


Figure 3 Examples of above-ground stabilizing systems



The fenced off area is to be protected and is to be regarded as sacrosanct.
A weatherproof warning notice is to be placed on the Tree Protection Barrier.



If required, preliminary tree removal or other works required before the site is set up may take place before the Tree Protection Fencing is installed.

The Tree Protection shall be erected before any plant or equipment is brought onto site.

The integrity of the fencing shall be maintained throughout the construction period.

The fencing shall only be removed once the construction phase is complete.

7.0 Special Measures for working within a Root Protection Area

The area within the Root Protection Zone is to be considered a No Dig Area, with the only digging to be with hand tools.

Should any roots require being exposed, they must be protected by sacking and sharp sand (not building sand) or good soil and the hole filled in as soon as practical. Advice should also be sought from the project Arboricultualist.

Any pipework, cables or services should where possible be routed away from the Root Protection Areas.

Should any excavations or service runs within Root Protection Areas be required, advice must be sought from the project Arboricultualist who will also liaise with the Planners as appropriate.

Hand digging to plant shrubs is permitted but care must be taken to minimise damage, disturbance and compaction.

8.0 Arboricultural Method Statement

The trees on the site should be considered to be protected under planning conditions, it is essential that the process detailed in this method statement is followed in order to prevent damage to the trees being retained.

The site must be carefully managed in order to avoid damage within the Root Protection Areas.

No access is to be allowed within the Root Protection Area.

The Root Protection Area is the minimum area that must be protected. Please be aware that often the roots extend further or in different directions than indicated by the theoretical area dictated by the trunk size.

Where the roots are may be affected by different factors such as :

- Species of tree,
- Ground conditions (including man made obstacles such as foundations or trenches)
- The health of the tree, root damage or pruning.

An individual such as the Contract Manager is to be identified as a point of contact for arboricultural affairs during building works. This individual is to be fully aware of the arboricultural planning requirements on the site and is to be responsible for the monitoring and enforcement of tree protection measures.

It is advisable to have a Project Arboriculturalist who can oversee and direct Tree Protection and operations that involve the trees on site.

Operations that may damage trees

The following operations are likely to result in significant damage to trees. Damage resulting from these operations may take immediate effect resulting in the rapid death of a tree, or alternatively may result in years or even decades of gradual decline and ultimately an early death.

Compaction of Soil

Repeated pedestrian movements, vehicle parking, storage of materials or waste will result in a measure of soil compaction which within a Root Protection Area will inevitably lead to some root death and may reduce the longevity of a tree.

Storage or Spillage of Toxic Materials

The following materials that are commonly used on development sites are toxic to trees:

- Builders Sand which may contain some salt or other leachates.
- Cement
- Fuels eg Petrol, Diesel etc.
- Tarmac
- Washings eg from mixing cement or plaster

The uncontrolled storage or use of such materials within 10 metres of trees is likely to be detrimental to their long-term health.

Excavation, Soil Grading, Alteration of Soil Levels

Contrary to popular belief nearly all of a tree root system is located within the top 1 metre of soil, with the majority of roots found within 600mm of the soil surface.

Tree Root distribution may also be affected by steep banks.

The Root Protection Area must be considered the minimum area of protection required to retain a tree. The full root system of a tree will extend beyond this, usually to a distance at least equivalent to the height of the tree.

For this reason any excavations within a Root Protection Area present a risk of damage to the tree root system.

Damage to the larger structural roots may have an immediate detrimental effect to the stability of the tree as well as the longer term health.

Raising of Levels

Roots breathe, requiring gaseous exchange and take water from the soil and therefore normally develop in free-draining, aerated soil.

Where levels are raised over tree roots the ability to access oxygen and respire Carbon dioxide is reduced and moisture filtration hindered, tree roots will subsequently be starved of oxygen and water leading to root death, potential disease and reduced longevity.

Damage to the main stem and branches

Damage caused by equipment or plant movements and can result in long-term decline in tree health and serve as an entry point for decay fungi.

No access for plant/vehicles is permitted within the specified Root Protection Areas.

Pruning carried out by untrained operatives

Poor pruning practice can increase the risk of limb or complete tree failure, as well as providing entry points for decay fungi.

All tree work is to be carried out by a competent arborist in accordance with BS3998:2010 who is certified and insured.

Appendix

Contains

BS 5837:2012 Chart for Tree Quality Assessment

Photos

The survey data table

Survey maps

Table 1 (BS5837:2012) – Cascade Chart for Tree Quality Assessment.

Category & Definition		Criteria (Including subcategories where appropriate)			Identification On Plan
TREES UNSUITABLE FOR RETENTION (See Note)					
Category U Those 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	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (i.e. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby or very low quality trees suppressing adjacent trees of better quality NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.				DARK RED
TREES TO BE CONSIDERED FOR RETENTION					
Category & Definition	Criteria — Subcategories				
	1 Mainly arboricultural values	2 Mainly landscape values	3 Mainly cultural values, including conservation		
Category A Trees of high quality With an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	LIGHT GREEN	
Category B Trees of moderate quality With an estimated remaining life expectancy of at least 20 years	Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	MID BLUE	
Category 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	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value, and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	GREY	

Photos



Trees 1 Birch and 2 Field
Maple to be retained



Trees 3 Ash and 4 Ash to be
retained



Tree 5 Field Maple to be retained



Tree 6 Hawthorn to be retained



Tree 7 Hawthorn to be retained
Tree 8 Birch to be crown raised



Tree 9 Willow to be removed



Street scene to show tree locations along Cringle Road
 Tree 6 Hawthorn, to be retained
 Tree 7 Hawthorn, to be retained
 Tree 8 Birch, to be crown raised
 Tree 9 Willow, to be removed
 Tree 10 Birch, to be crown raised
 Tree 11 Oak, to be crown raised



Tree 13 Goat Willow, to be removed

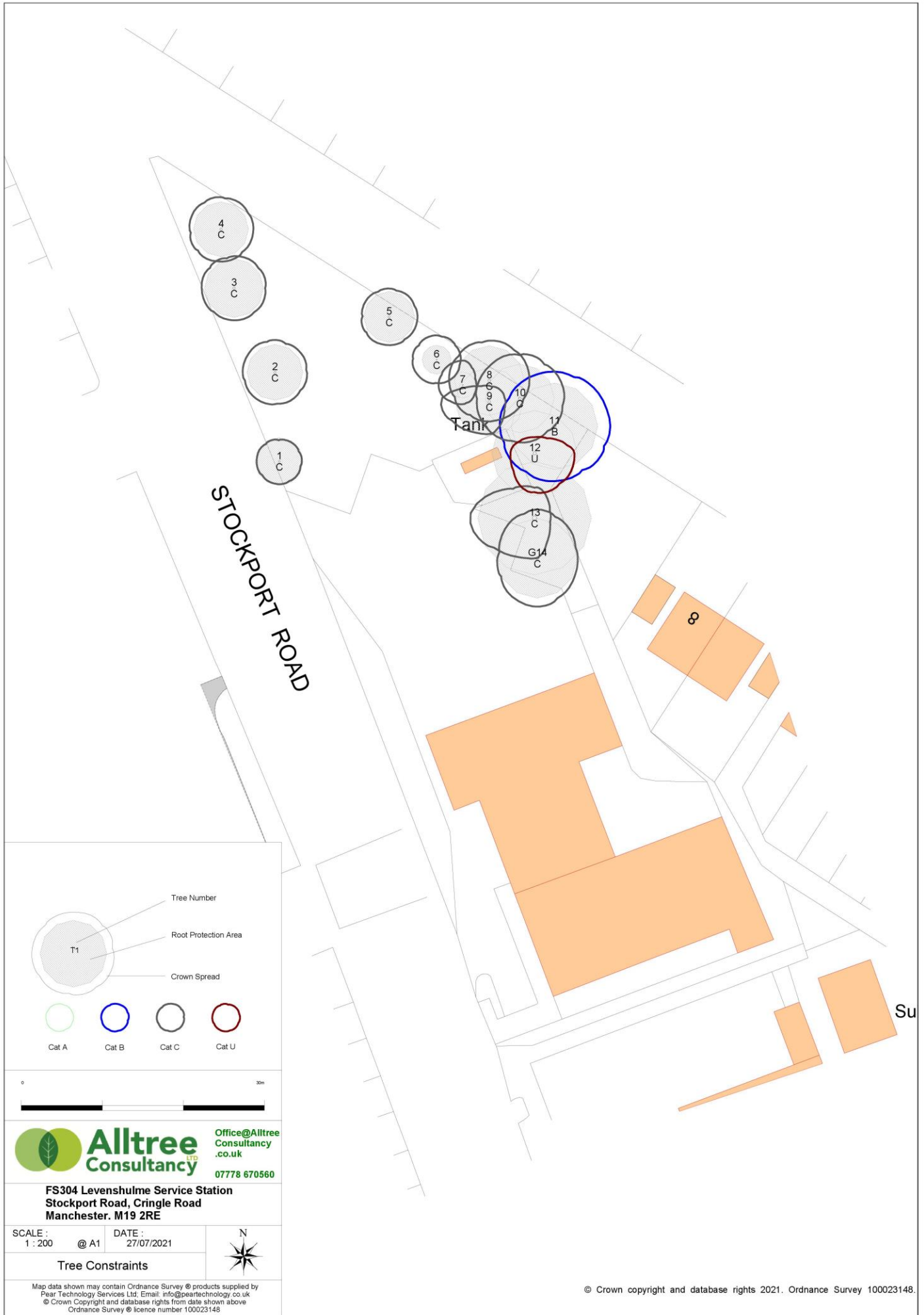


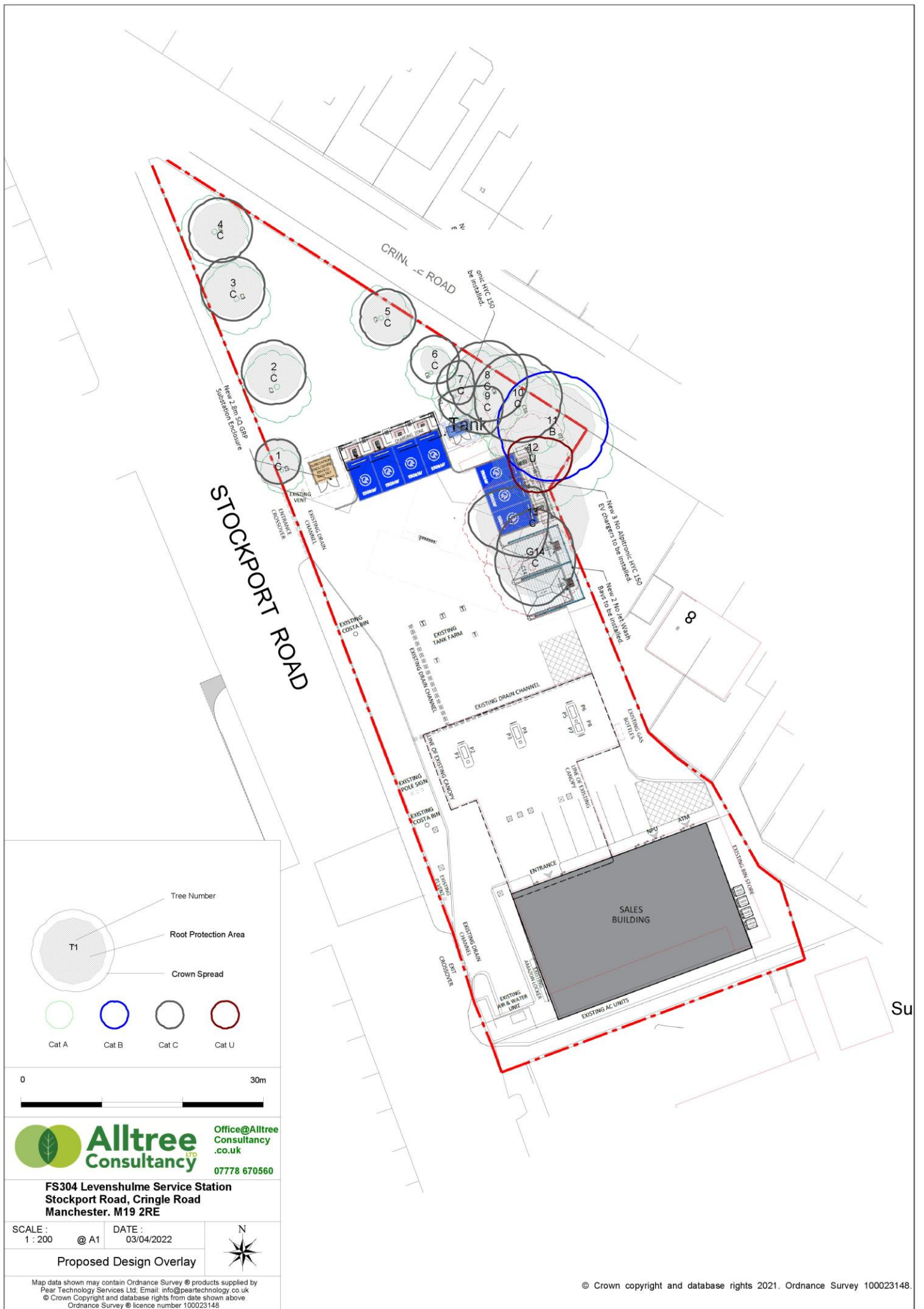
G14, Crowded group of young Birch. The edge trees are mediocre and unbalanced. To be removed

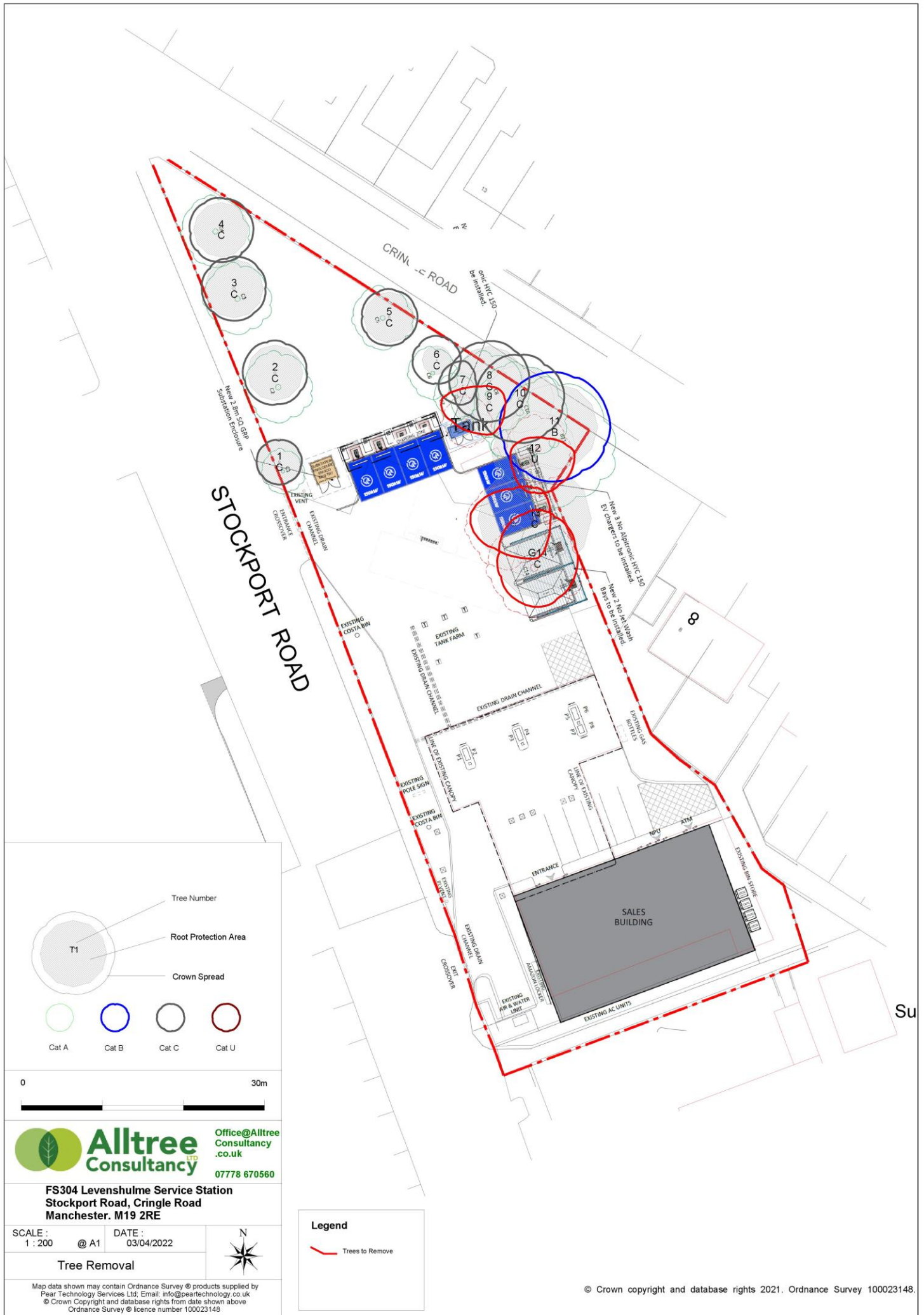
Survey Data

Tree ID	Common Name	Latin Name	Maturity	Likely Bat Habitat	Height (m)	Height of first significant branch (m)	Number of Stems	Stem 1 (mm)	Spread - N E S W (m)	CH (m)	Crown	Stem	Basal Area	Cat	Life Expectancy	Subcategories	Phys Condition	Comment
1	Silver Birch	Betula pendula	Semi-mature	No	9.5	2	1	240	2.8	2.5	Fair	Fair	Fair	C	20 to 40 yrs	2 Landscape Values	Fair	Mediocre tree of limited value
2	Field Maple	Acer campestre	Semi-mature	No	10	2.4	1	280	4	2.4	Good	Fair	Good	C	20 to 40 yrs	2 Landscape Values	Fair	Mediocre tree, Steel mesh guard embedded in the trunk
3	Common Ash	Fraxinus excelsior	Semi-mature	No	10	2.2	1	295	4	1.5	Good	Good	Good	C	20 to 40 yrs	2 Landscape Values	Good	Reasonable quality tree, no evidence yet of Ash Dieback.
4	Common Ash	Fraxinus excelsior	Semi-mature	No	10	2.5	1	275	4	1	Good	Good	Good	C	20 to 40 yrs	2 Landscape Values	Good	Reasonable quality tree, no evidence yet of Ash Dieback.
5	Field Maple	Acer campestre	Semi-mature	No	10	2	1	255	3.5	1.5	Fair	Fair	Fair	C	20 to 40 yrs	2 Landscape Values	Fair	Reasonable tree.
6	Common Hawthorn	Crataegus monogyna	Semi-mature	No	4	1.5	2	100 105	3	1.5	Fair	Fair	Fair	C	10 to 20 yrs	2 Landscape Values	Fair	Unremarkable tree
7	Common Hawthorn	Crataegus monogyna	Semi-mature	No	4	2.5	2	85 100	3 1.7 2.4 3	2.2	Fair	Fair	Fair	C	10 to 20 yrs	2 Landscape Values	Fair	Unremarkable tree shaded out by T8 Birch
8	Silver Birch	Betula pendula	Mature	No	14	3	1	350	5	1.5	Good	Good	Good	C	10 to 20 yrs	2 Landscape Values	Fair	Mature tree of unremarkable nature
9	Goat Willow	Salix caprea	Mature	No	8	0	3	195 115 255	2 2 4 6	0	Fair	Poor	Poor	C	10 to 20 yrs	2 Landscape Values	Fair	Poor quality tree, nearly classed as U
10	Silver Birch	Betula pendula	Mature	No	14	2.5	1	345	5.5	1.5	Good	Good	Good	C	10 to 20 yrs	2 Landscape Values	Good	Mature tree of unremarkable nature

Tree ID	Common Name	Latin Name	Maturity	Likely Bat Habitat	Height (m)	Height of first significant branch (m)	Number of Stems	Stem 1 (mm)	Spread - N E S W (m)	CH (m)	Crown	Stem	Basal Area	Cat	Life Expectancy	Subcategories	Phys Condition	Comment
11	Common Oak	Quercus robur	Semi-mature	No	14	3	1	435	6.8	1.5	Good	Good	Good	B	20 to 40 yrs	2 Landscape Values	Good	Reasonable quality tree
12	Wild Cherry	Prunus avium	Mature	No	6	2	1	430	2 5 5 3	2	Fair	Poor	Poor	U	<10 yrs	2 Landscape Values	Poor	Ganoderma decay at the base. Fell
13	Goat Willow	Salix caprea	Mature	No	13	4	1	570	4 2 5 8	1.5	Fair	Fair	Poor	C	10 to 20 yrs	2 Landscape Values	Fair	Large mature tree, leaning out to the forecourt. Limited life expectancy
G14	Birch	Betula pendula	Semi mature to mature	No	14	Varies from 1.5	1	140+	Group spread as per the map	1.5	Fair	Fair	Fair	C	20 to 40 yrs	2 Landscape values	Good	Group of variable trees of variable maturity planted too close together with no room to develop properly, edge trees unbalanced due to group shading.







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SCALE :
1 : 200

@ A1

DATE :
03/04/2022



Tree Removal

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Legend

— Trees to Remove

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