BS5837:2012 TREE SURVEY / Arboricultural Impact Assessment

Customer No: MBHDE05
Document No: 800717
14/09/2021



Site Address:
FS408 MFG RUSHOLME SERVICE STATION
10 WILMSLOW ROAD
MANCHESTER. M14 5TQ

Client:

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Site

Site:MFG Rusholme, 10 Wilmslow Road, Manchester.M14 5TQ
Inspection date: 15th September 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 in response to a query from Manchester City Council Technical Support Team, Planning.

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.

An informed decision may then be made regarding the relationship between the trees and the proposed design, the future of the trees or adjust the development to accommodate the trees.

Remedial or other works may also be recommended.

A site visit was carried on 15th September 2021 to survey trees
Two trees were recorded immediately adjacent to the site, with one being against the proposed development. Two more trees were recorded within site.

Trees have been categorized as follows:

Out of the four trees recorded, three trees are Category C and one tree Category U.

Normally, trees or groups of trees that are categorized A or B should be 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

Inspect the site and provide an Arboricultural Impact Assessment in response to the following communication from Manchester City Council Technical Support Team in Planning.

> *The position of the proposed ev canopy where the existing car wash is to be demolished appears to be within the canopy of off site tree cover. Could an Arboricultural Implications Assessment be submitted.*

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 trees 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:

ufm5.pdf
13664 - P01 - 408 - Existing Site Layout.pdf
13664 - P02 - 408 - Proposed Site Layout.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 design, demolition and construction.

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

The TPO / CA (Tree Preservation Order / Conservation Area) status has not been checked.
Manchester City Council require an web based / email enquiry to confirm the presence or not of a TPO / CA. Whether the trees are protected or not is irrelevant during the Planning Process. The trees are effectively protected as part of the Planning Process until a conclusion is reached.
Out of the four trees inspected, Two are within site and two outside site, presumed to be under the ownership of others, possibly, Manchester City Council.
It is important to check for the existence of controls as well as the ownership of the trees, with the Local Planning Authority before any treeworks 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 BS5837:2012 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. Where barriers to roots are noted, an educated assessment is made as to the likely root location. Depending on the tree and what is proposed, further investigation as to root location may be required.

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 Arboricultural Impact Assessment

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.

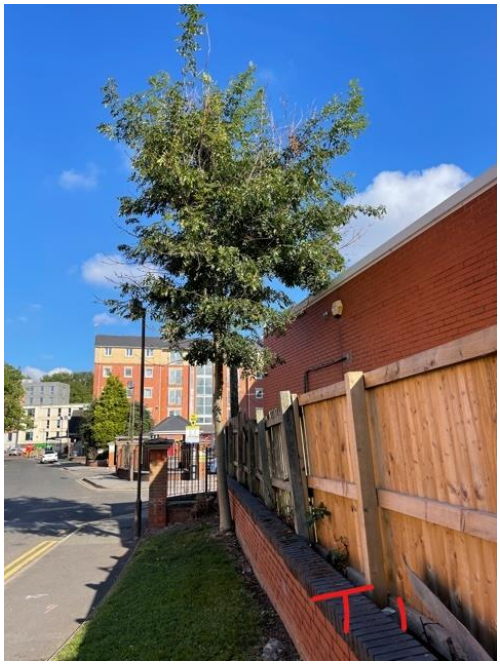
Ideally any conflicts with trees (roots, canopies, and trunks) should be designed out with careful consideration of building location and size and special design arrangements where required.
Trees that overhang or are close to a new building are often subject to excessive pruning over time or even removal.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

See next page for details.

Tree 1: Ash



Off site Ash tree, Semi mature,
Height approx. 10m.
Stem diameter at 1.5m: 175mm.
Crown spread approx. 2.5m radius.

Condition: Early indications of Ash Dieback (Hymenoscyphus fraxineus) a fungal disease of recent distribution in the Uk, causing leaf and stem dieback, leading to death of the tree.

The tree is also against the boundary wall of the Fuel Filling Station. If allowed to grow unchecked (and if it survives Ash Dieback) is likely to damage the wall.

5837:2012 Category U with less than 10 years expected safe useful life remaining.

Impact on the Proposed Design?
None

Tree 2: Elderberry



Off site Elderberry, Mature,
Height approx. 8m.
Stem diameter at 1.5m: 6 stems of average diameter 120mm.
Crown spread approx. 3.5m radius.

Condition: Mature, Fair condition, Surgery, crown raising and removal of dead wood has been carried out in the past. The fence appears to have a rotten base and is tied to the tree for support.
While the tree is against the boundary wall of the Fuel Filling Station, it is unlikely to cause significant damage to the wall. The roots are unlikely to be significantly under the wall foundations given the relatively soft and fibrous nature of Elderberry roots.

5837:2012 Category C with possibly around 10 years expected safe useful life remaining.

The impact on the Proposed Design is limited. The Car Wash is around 4.5m tall, the crown is impacting against the top corner of the wall. The proposed design calls for demolition of the Car Wash and installation of an EV Charging Canopy of 3m tall to be located in the same place.

The EV Charging Canopy requires minimal foundations and is much lower in height than the current Car Wash on both counts.

Tree 3 and 4: Cherry



On site Cherries, Mature,
T3 Height approx. 7.5m.
Stem diameter at 1.5m: 270mm
Crown spread N 2.75m, E 2.9m, S 4.8m, W 4m radius.

Condition: Good. Crown height is just below statutory height over the pavement and tips just over the road, below the 5m height requirement. One main root has grown through the wall expansion gap and down to the pavement, protruding a little over the edge of the pavement. At present there appears to be no damage to the wall or obstruction / danger to the pavement and its users.

T4 Height approx. 6m.
Stem diameter at 1.5m: 245mm
Crown spread N 3.6m, E 4m, S 3m, W 3m radius.

Condition: Fair. Crown canopy density is a little sparse. Crown height over the road is as T3. Exudate marks on the trunk hint at a potentially compromised vascular system. Longer term there is likely to be limited safe useful life with the tree potentially being in a state of decline.

5837:2012 Category C for both T3 and T4 with 10 to 20 years expected safe useful life remaining.

There is no impact on the Proposed Design. There is currently a line of tarmac hard surfaced parking spaces adjacent to and under the trees. The parking spaces under the tree will not be altered.

It is anticipated that the hard surfacing below the trees will not be disturbed.
If for some reason the surface has to be lifted. Hand tools and toothless bucket should be used to remove the top layer within the RPA to avoid damage to the roots below. A new surface can then be laid, preferably avoiding disturbance of the sub surface layers.

The new GRP Substation Enclosure is just outside the tips of the branches of T4 and outside the Root Protection Area.
Given the dimensions of the trenching and power cables required, from the Substation to the EV Charging bays, the trenching and the cables must not pass through the Root Protection Areas of T3 and T4

Proposed works

No works are proposed to T1

Proposed works to T2.



It appears that the branches overhanging onto site are supported by the top of the car wash, it is expected that the branches will sag or drop lower once the building is removed.

Therefore, remedial minor works are proposed to lightly lift the crown of the Elderberry over the site to maintain approx. 4.5m to 5m crown height. The crown lift is prudent works to maintain the rights and enjoyment of the property, removing just sufficient overhanging branches under what is often called ‘common law’. The crown raise should be carried out before the demolition works.

While it is presumed that the fence may be replaced, it or an alternative screen to replace it should be left in place during demolition and construction of the EV Charging Canopy.

No storage of materials, or vehicles should be allowed to the grass area around T1 and T2

Works to T3 and T4

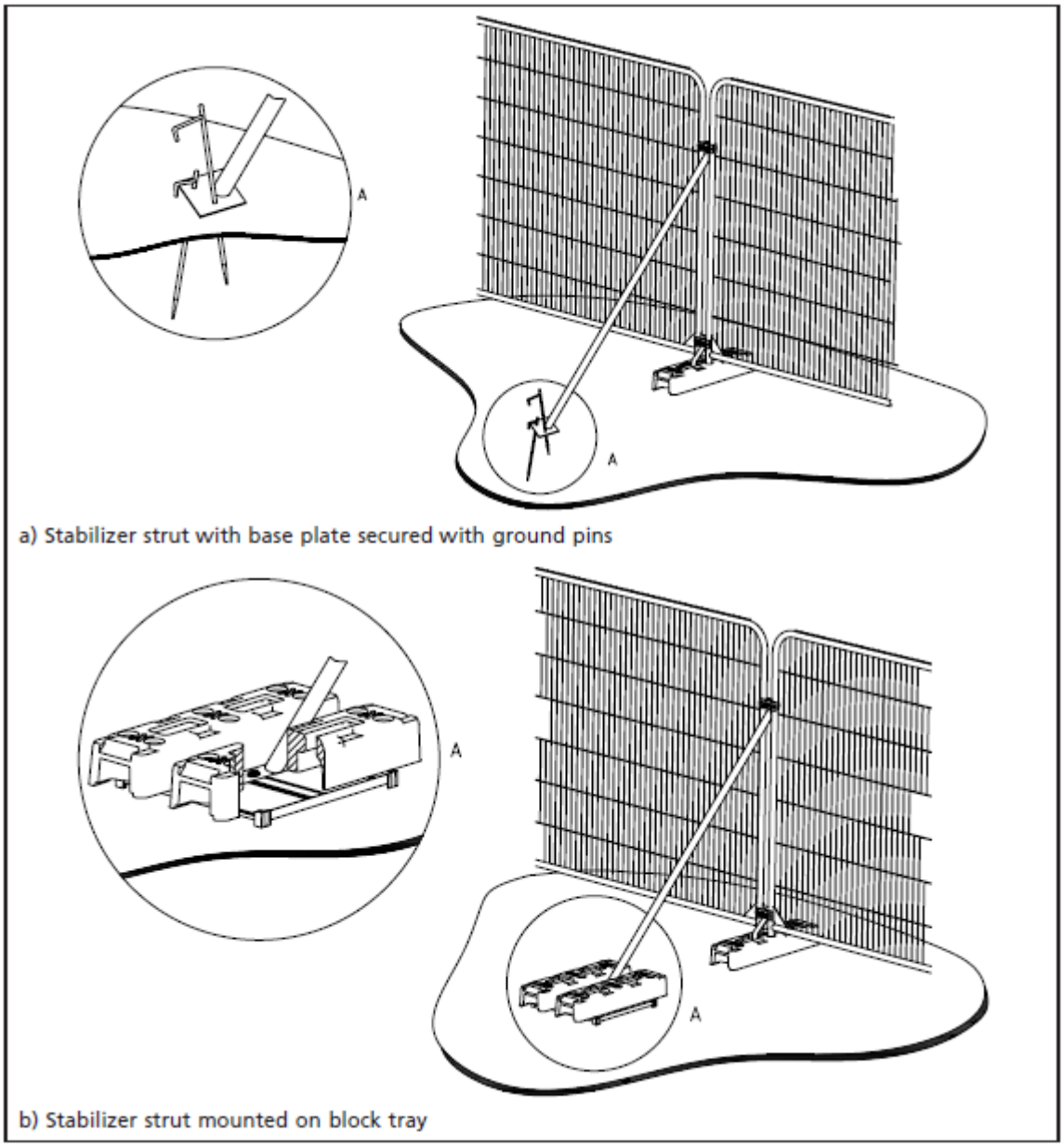
Works required are to ensure the statutory requirement that the crowns are lifted to 2.4m over the pavement and tipped back to avoid overhang to the roadway below 5m

5.0 Tree Protection

Specific Tree Protection is not required, except in a limited way for T2 to either keep the existing fence temporarily or replace it with an alternative, eg Harris Fencing, for the duration of the works.

The extract below from BS5837:2021 gives an indication of the screen required, to be positioned in place of the existing fence if required.

Figure 3 **Examples of above-ground stabilizing systems**



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.

6.0 Special Measures for working within a Root Protection Area

It is strongly recommended that no trench or cable run be placed within the Root Protection Area (RPA) of T3 or T4. The size of the trench and cables would lead to unacceptable damage to the root systems if installed within the RPA.

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 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.

7.0 Arboricultural Method Statement

The trees on the site and adjacent are likely 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.

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 breath, 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





Survey Data

Tree ID	Tree Type	Latin Name	Maturity	Likely Bat Habitat	Height (m)	Height and direction of first significant branch (m)	Number of Stems	Stem (mm)	Spread N E S W (m)	Crown Height (m)	Crown	Stem	Basal Area	Category	Life Expectancy	Phys Condition
1	Ash	Fraxinus excelsior	Semi-mature	No	10	3.5 S	1	175	2.5 2.5 2.5 2.5	3	Poor	Good	Fair	U	<10 yrs	Decline
2	Elder	Sambucas nigra	Mature	No	8	-	6	120 avge	3.5 3.5 3.5 3.5	3	Fair	Fair	Fair	C2	10 to 20 yrs	Fair
3	Prunus	Prunus avium	Mature	No	7.5	1.8 S	1	270	2.75 2.9 4.8 4.0	2	Fair	Fair	Fair	C2	10 to 20 yrs	Fair
4	Prunus	Prunus avium	Mature	No	6	3 E	1	245	3.6 4.0 3.0 3.0	2	Fair	Fair	Fair	C2	~10 yrs	Decline

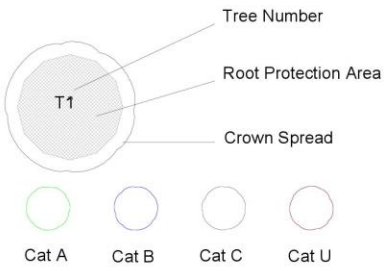
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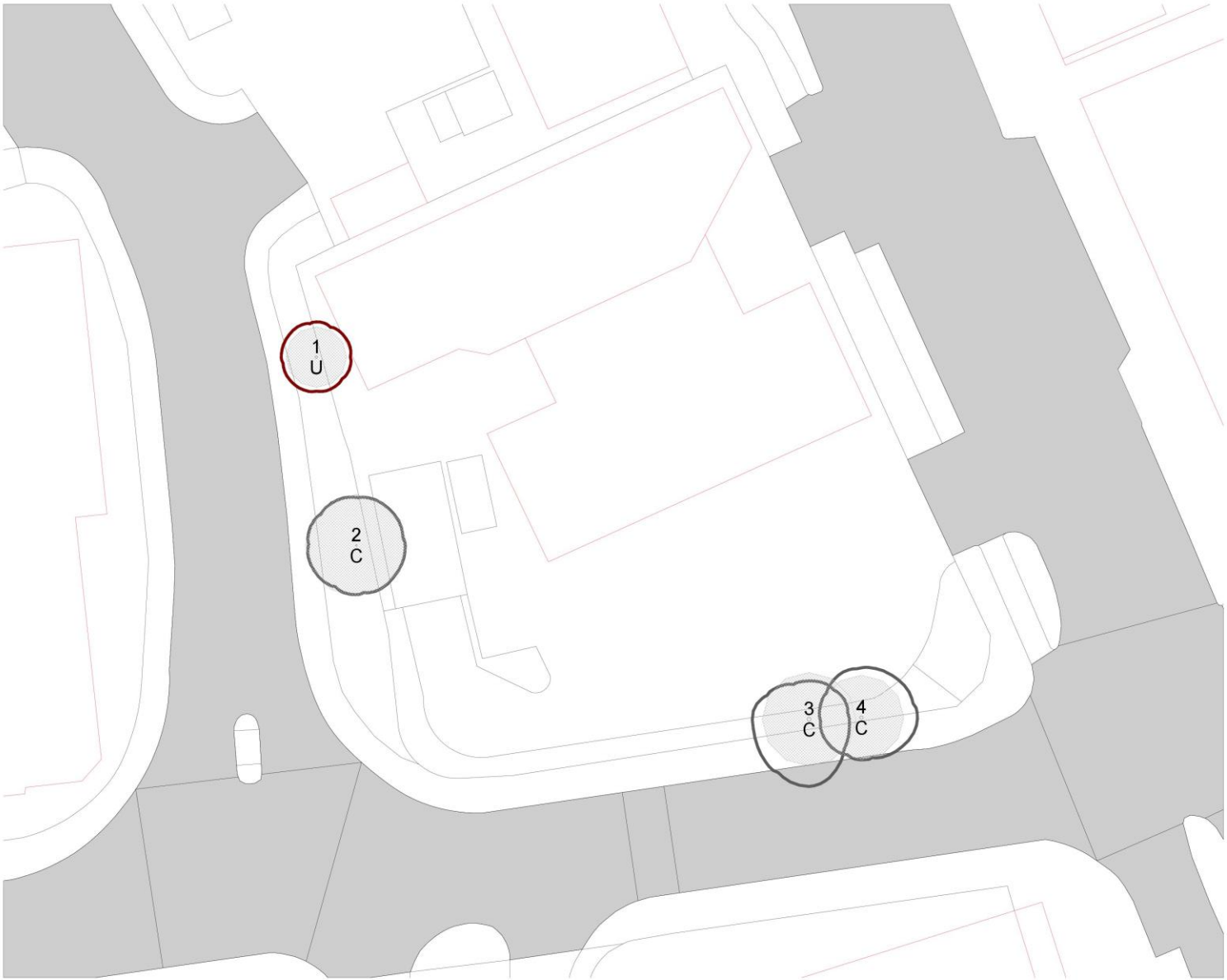
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Tree Constraints

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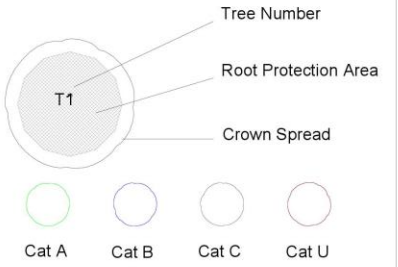
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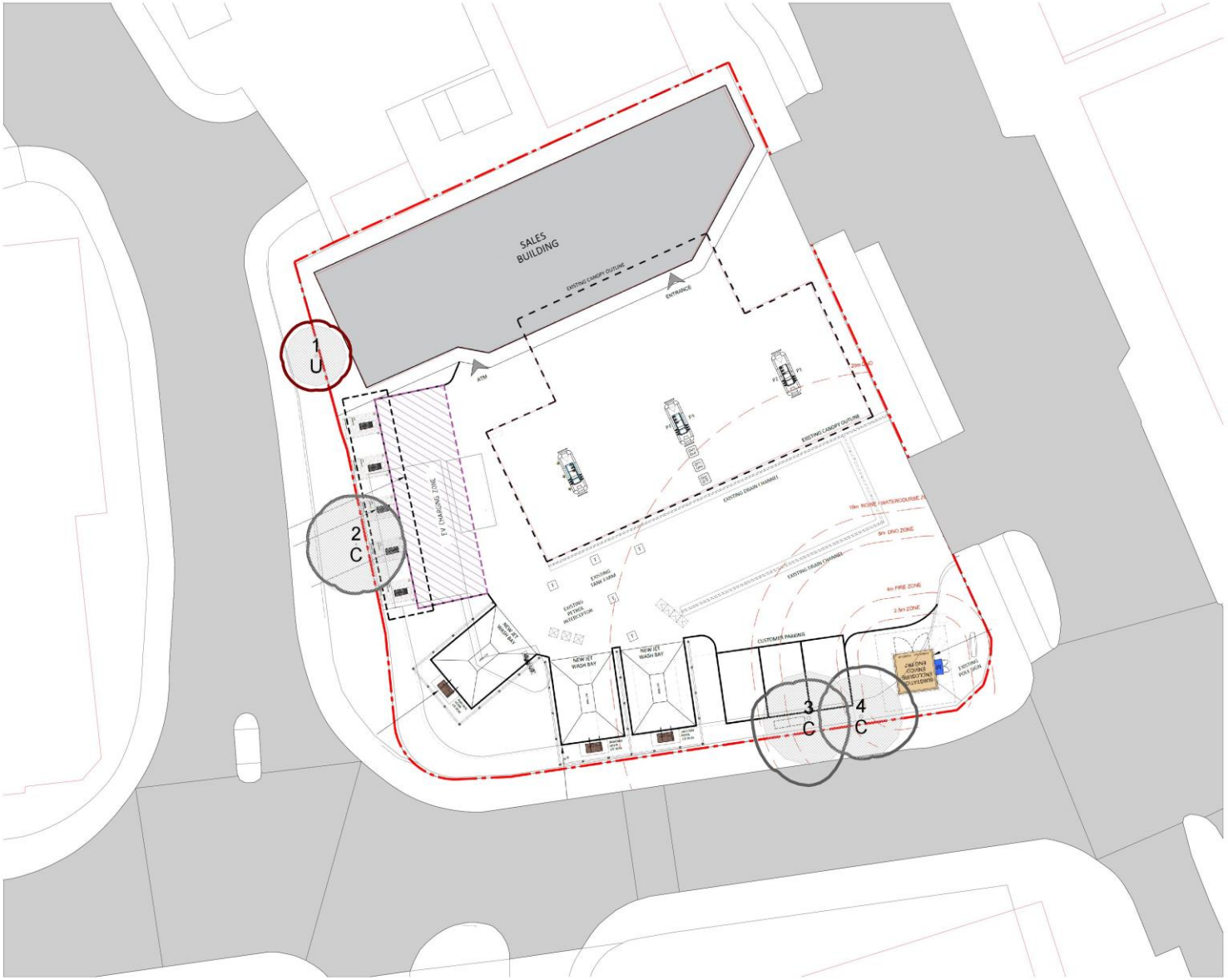
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Proposed design		

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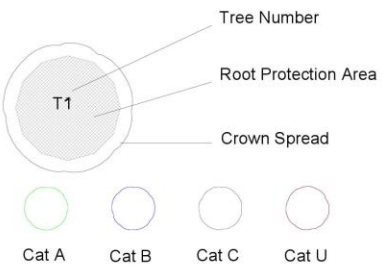
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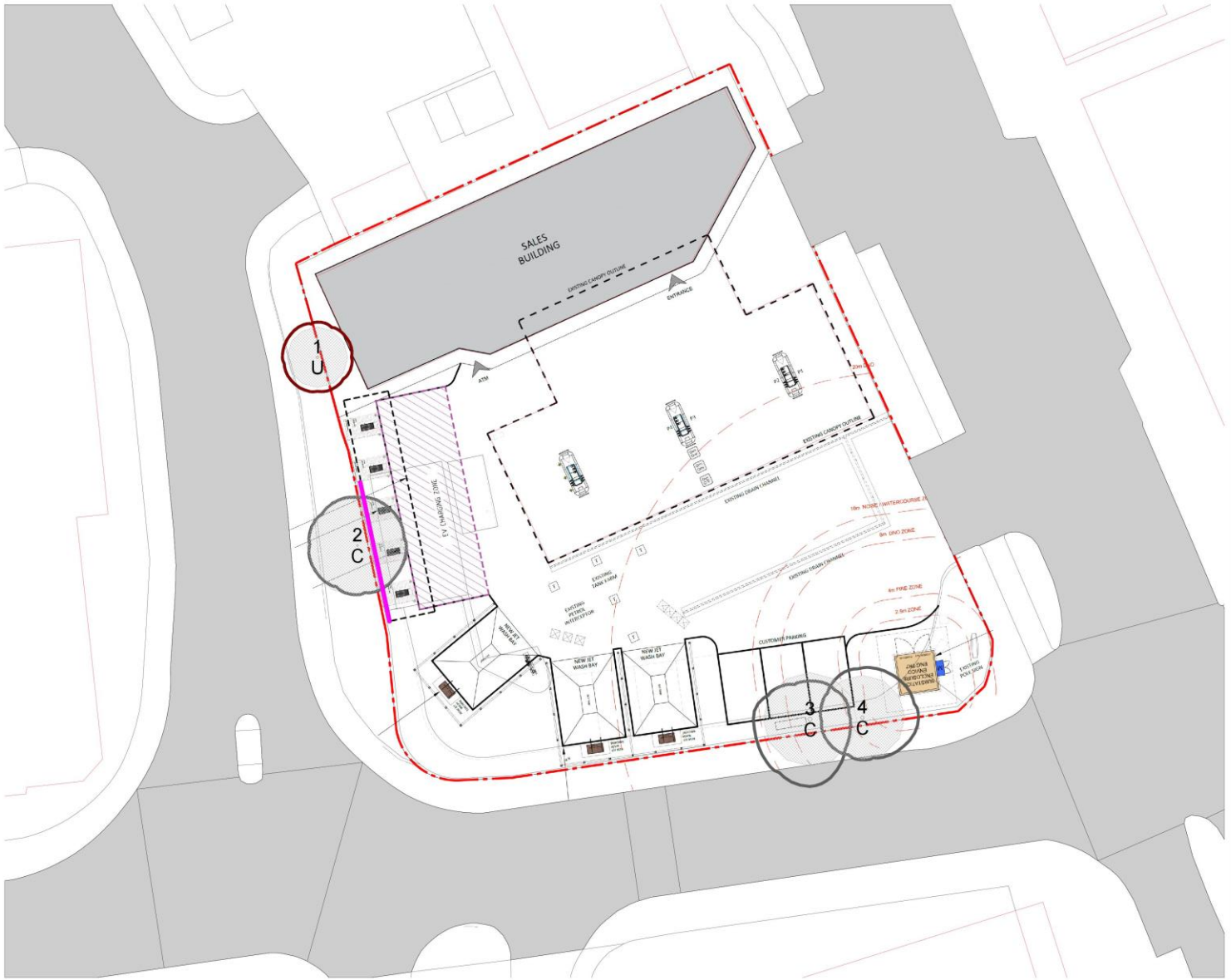
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