TIM MOYA ASSOCIATES

Arboricultural Report

for planning purposes

23-35 Adelaide Road
Chalk Farm,
London,
NW3 3QB

February 2022

210870-PD-11a

Project	210870-PD-11a – 23-35 Adelaide Road, London, NW3 3QB
Report Type	Arboriculture (Planning)
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CONTENTS PAGE

1 EXECUTIVE SUMMARY

1.1 The key components and conclusions of this *Arboricultural Report* (the 'Report') are as follows:

- This AIA revision has been completed following the arboricultural clerk of works Site visit.
- Additional landscape improvements that would result in further tree loss on Site have been identified and this Report revision has been completed to seek planning permission for additional tree losses.
- The proposed development at *23-25 Adelaide Road* ('the Site') is for the consolidation of entrances to the shared front gardens, removal of piers to the street boundary wall, repair works and painting of the front boundary walls, addition of timber bin stores, mixed re-surfacing of the site, introduction of new planters and painting of building facades ('the proposed development'), within the area administrated by *London Borough of Camden* ('the LPA').
- Three small trees / shrubs have been removed as part of the previously approved landscape improvements.
- In additional to these losses the B category small-leaved lime (T1) and C category cherry (T4) will need to be removed as part of landscape improvements. As detailed in Section 6 two replacement trees of a suitable quality, size and species will be planted to mitigate for the loss of T1 and T4 close to / in their current with a 5 year maintenance and aftercare plan.
- At this stage of the planning process, the proposed development has included new raised beds to provide shrubs and other forms of vegetation within a more formal context. There is considered to be sufficient capacity to mitigate the proposed loss of trees / shrubs with new planting located within the Site.
- A working methodology for demolition and construction adjacent to the retained trees is provided within this report.
- The proposed development has relatively limited impacts upon trees and landscaping with the potential to enhance the landscape and amenities of the property.
- Two replacement trees have been proposed in this Report, as detailed in Section 6, which will not only mitigate for tree loss, but also enhance the street scene / local landscape in the short-medium term. The proposed development will therefore comply with Local and National Planning Policy.

2 INTRODUCTION

Instruction

2.1 This *Arboricultural Report* (the 'Report') has been instructed by *Cristina Siladi* (the 'Client').

Author

2.2 This report has been completed by Kit Hardy who is a Senior Arboricultural Consultant specialising in trees and planning with around 15 years industry experience. Related professional qualifications that he holds are as follows; MSc Arboriculture and Urban Forestry, Professional Tree Inspection (PTI) qualification by LANTRA, Quantified Tree Risk Assessment (QTRA) and Tree Risk Assessment Qualification (TRAQ) by International Society of Arboriculture (ISA).

Proposed development

2.3 The proposed development at *23-25 Adelaide Road* ('the Site') is for the consolidation of entrances to the shared front gardens, removal of piers to the street boundary wall, repair works and painting of the front boundary walls, addition of timber bin stores, mixed re-surfacing of the site, introduction of new planters and painting of building facades ('the proposed development'), within the area administrated by *London Borough of Camden* ('the LPA').

Scope

2.4 This report has been provided to assist all parties involved in the planning process, in accordance with *British Standard 5837:2012 - Trees in relation to design demolition and construction - Recommendations* ('BS5837').

Site survey

2.5 The Site was visited, and the trees and other vegetation surveyed, referring to the recommendations of BS5837, on 6th September 2021 by Ed Clevedon. The Author also attended site on 3rd December 2021. The details of this survey are found within the report appendices.

2.6 The survey was not an assessment of the health and safety of the trees. However, any trees identified as a current notable risk to people and property will have been highlighted in the schedules, at Appendix B.

Image 1: aerial photograph of the site with approximate red line boundary, Google images not to scale.

Report preparation

2.7 This report has been prepared, with reference to the following supplied documents and information:

- proposed architectural plans;
- topographical survey.

2.8 The appendices of this report include:

- Appendix A (plans); and
- Appendix B (schedules).

Definition of terms

2.9 The following terms and abbreviations may be used within this Report. These terms are defined by BS5837 as follows, unless provided without quotation marks:

- **Arboricultural Method Statement ('AMS')** - "*methodology for the implementation of any aspect of development that is within the root protection area, or has the potential to result in loss of or damage to a tree to be retained*".
- **Local Planning Authority ('LPA')** - the planning department of the borough, district, or metropolitan council.

- **Root Protection Area ('RPA')** - "*layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority*.
- **Service(s)** - "*any above- or below-ground structure or apparatus required for utility provision*" that may for example include "*drainage, gas supplies, ground source heat pumps, CCTV and satellite communications*".
- **Tree Protection Plan ('TPP')** - "*scale drawing, informed by descriptive text where necessary, based upon the finalized proposals, showing trees for retention and illustrating the tree and landscape protection measures*".

3 SITE INFORMATION

Current Site use

3.1 The site is formed of the front gardens of Number 23 - 35 Adelaide Road which are in a state of disrepair and require refurbishment. The most notable works required include the repair or rebuild of the front boundary wall which has been pushed out over time by the stems or epicormic growth of the mature trees that line the front boundary, the replacement of existing and inclusion of new hard surfacing across the site, the introduction of new purpose-built bin stores; and the introduction of planters to improve the aesthetics of the site.

3.2 Key trees on the site include the mature lime trees T1 - T3 which are regularly pollarded to keep a narrow form, and the mature cherry tree T4 which has recently undergone significant limb reduction on the northern aspect of the canopy towards the road.

3.3 All four trees are planted within locations adjacent to the low front boundary wall and have exerted pressure over time through stem growth, stem lean or epicormic growth; resulting in significant movement in the structure of the wall. In order to avoid future conflicts, the proposal seeks to demolish the wall to ground level and rebuild with gaps around the stems of the trees.

3.4 Surfacing across the site is formed of a mix of grassed areas, paving flags and concrete paths which the development seeks to regenerate to create a more cohesive residential setting. Bins are also informally stored within areas of concrete surfacing adjacent to trees which the development seeks to replace with timber framed bin stores.

3.5 The trees present a significant landscape feature within the Adelaide Road street scene which the development seeks to retain by incorporating a mix of low impact design and no-dig surfacing across the site.

Image 2: stem lean of T1 out towards the road and adjacent boundary wall.

Image 3: damage to wall adjacent to T1.

Image 4: movement and damage to wall adjacent to T2.

Image 5: soft surfacing around trees will be replaced with Flexipave or other porous no-dig solution.

Image 6: hard surfacing around trees will be replaced with porous paving.

Image 7: young cherry tree T7 will be removed to facilitate landscape improvements.

Image 8: viburnum shrub S8 will be removed to facilitate landscape improvements.

Image 9: young holly tree T9 will be removed to facilitate landscape improvements.

Landscape character

3.6 England is divided into 159 distinct areas ('*National Character Areas*' or 'NCAs'), assessed by *Natural England*, which follow natural lines in the landscape to define the given area and how it differs from adjacent areas.

3.7 The Site is within NCA 112 for the area known as *Inner London* (the Profile'), which is predominantly urban and "*relies heavily on ecosystem services provided by the surrounding NCAs*". Nonetheless, it has an "*extensive network of green infrastructure throughout*" that is often "*close to people's homes and places of work*", though "*many*

communities in London suffer a shortage of green space". The Profile recognises that it is important to "*protect, manage and plan for expansion of the urban forest*", because of its overall beneficial effects to the character and function of the NCA.

Geotechnical information

3.8 The *British Geological Survey* ('BGS') provides on-line information, regarding the general soil properties of an area, including the underlying bedrock and any superficial deposits that overlay the bedrock. This information indicates that the Site is situated upon a bedrock of *London Clay* (comprised of clay, silt and sand), over which no superficial deposits are recorded.

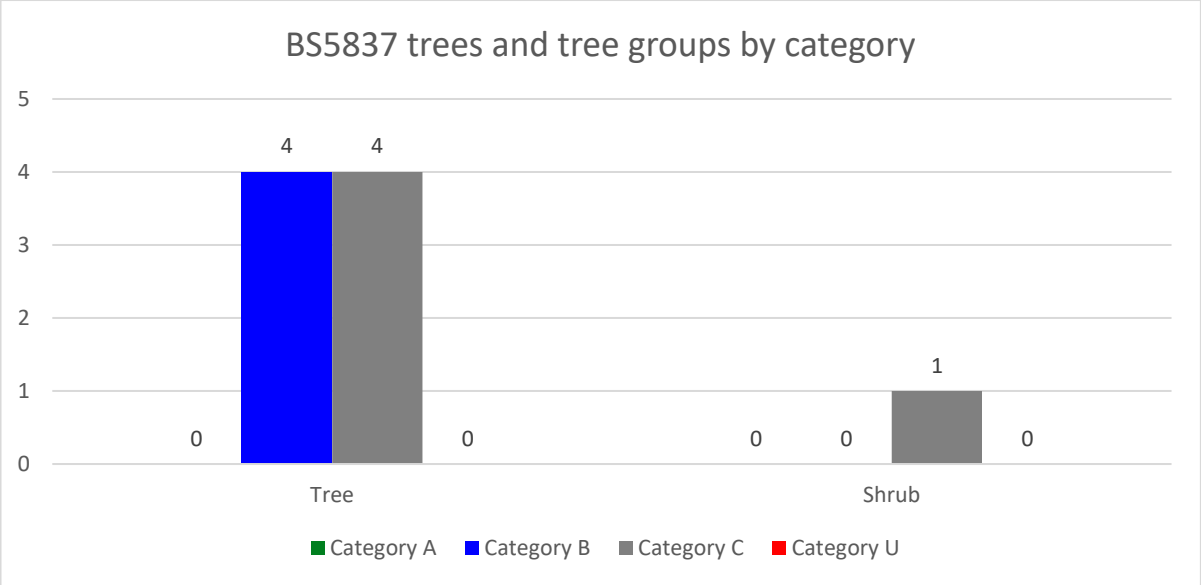
3.9 There are publicly available borehole logs adjacent to the Site that confirm the presence of stiff silty clay below layers of made ground.

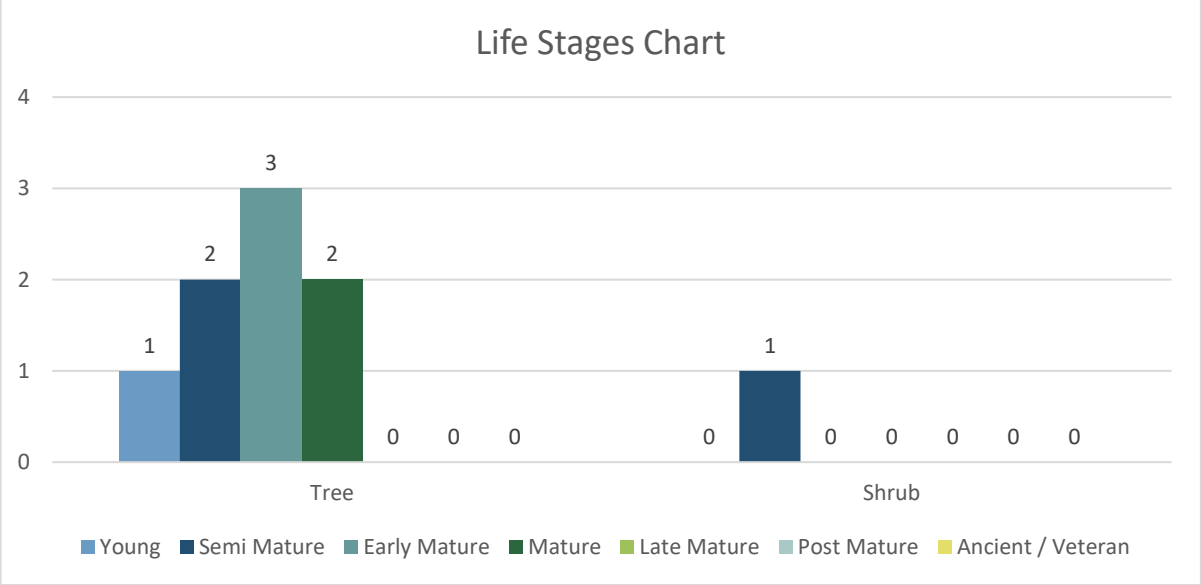
3.10 Soils where the clay content is significant will tend to encourage tree root growth at shallower depths - often, within the upper 600mm of soil. Where other soil components are present to greater extents, root morphology may differ, though impermeable layers of heavy compacted clay may restrict penetrative root growth, which may influence how far roots radiate from the stem of the tree to acquire nutrients.

4 TECHNICAL ARBORICULTURAL DETAILS

BS5837 details

4.1 The surveyed trees and vegetation items have been generally categorised, in terms of the landscape criterion as defined in BS5837, which focusses on the wider value afforded in contributing to the character of the landscape, in place of the individual merits of each item.





Statutory protections

4.2 The LPA publishes details of its *Conservation Areas* ('CAs') online. According to this information, the Site and any surveyed trees adjacent to the Site are not within a CA.

4.3 The LPA have confirmed via email on 29th October 2021 that there are *Tree Preservation Orders* ('TPOs') that apply to the lime trees T1 - T3. The relevant provisions of *The Town and Country Planning (Tree Preservation)(England) Regulations 2012* therefore apply, to these trees.

5 PLANNING POLICY AND GUIDANCE

National

5.1 Planning policy at national level is set out in the government's *National Planning Policy Framework* (the 'NPPF')[1] that was published in July 2021.

5.2 At this level, policy addresses the key principles of development. At its core, there is a presumption in favour of sustainable development incorporating good and durable design, by combining economic, social, and environmental strands in a balanced manner. Trees comprise an element of green infrastructure, which is one aspect of the environmental strand of sustainability.

5.3 In the context of the proposed development, the NPPF provides the following guidance that is relevant in terms of the surveyed trees:

- **Paragraph 131** - "*Trees make an important contribution to the character and quality of urban environments, and can also help mitigate and adapt to climate change. Planning policies and decisions should ensure that new streets are tree-lined, that opportunities are taken to incorporate trees elsewhere in developments (such as parks and community orchards), that appropriate measures are in place to secure the long-term maintenance of newly-planted trees, and that existing trees are retained wherever possible. Applicants and local planning authorities should work with highways officers and tree officers to ensure that the right trees are planted in the right places, and solutions are found that are compatible with highways standards and the needs of different users.*"
- **Paragraph 174** - "*Planning policies and decisions should contribute to and enhance the natural and local environment by: ... b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services including the economic and other benefits of ... trees and woodland*".

Greater London

5.4 Planning policy at the *Greater London* level is set out in *The London Plan* (the 'LP'). The current iteration of the LP was published, in March 2021.

5.5 In the context of the proposed development, the LP provides the following guidance that is relevant in terms of the surveyed trees:

- **Policy D8 Public Realm** - "*[D]evelopment proposals should: ... i) incorporate green infrastructure such as street trees and other vegetation into the public realm*

1 - Ministry of Housing, Communities and Local Government (2021). National Planning Policy Framework.

to support rainwater management through sustainable drainage, reduce exposure to air pollution, moderate surface and air temperature and increase biodiversity".

- **Policy G1 Green Infrastructure** - "*London's network of green and open spaces, and green features in the built environment, should be protected and enhanced. Green infrastructure should be planned, designed and managed in an integrated way to achieve multiple benefits*".
- **Policy G7 Trees and Woodlands** - "*Development proposals should ensure that, wherever possible, existing trees of value are retained. If planning permission is granted that necessitates the removal of trees there should be adequate replacement based on the existing value of the benefits of the trees removed, determined by, for example, i-tree or CAVAT or another appropriate valuation system. The planting of additional trees should generally be included in new developments particularly large-canopied species which provide a wider range of benefits because of the larger surface area of their canopy*".

Local

5.6 Planning policy at the local level is currently set out in the LPA's Local Plan (the 'LDP'), published in 2017.

5.7 In the context of the proposed development, the current LDP provides the following guidance that is relevant in terms of the surveyed trees:

- **Policy D1: Design** - "*The Council will seek to secure high quality design in development. The Council will require that development: ... k. incorporates high quality landscape design (including public art, where appropriate) and maximises opportunities for greening for example through planting of trees and other soft landscaping*";
- **Policy D2: Heritage** - "*The Council will: e. require that development within conservation areas preserves or, where possible, enhances the character or appearance of the area; ... g. resist development outside of a conservation area that causes harm to the character or appearance of that conservation area; and h. preserve trees and garden spaces which contribute to the character and appearance of a conservation area*"; and
- **Policy A3: Biodiversity** - "*The Council will protect, and seek to secure additional, trees and vegetation. We will: j. resist the loss of trees and vegetation of significant amenity, historic, cultural or ecological value including proposals which may threaten the continued wellbeing of such trees ... [and] l. expect replacement trees or vegetation to be provided where the loss of significant trees or vegetation or*

harm to the wellbeing of these trees and vegetation has been justified in the context of the proposed development".

6 ARBORICULTURAL IMPACT ASSESSMENT

Removals

6.1 Three small trees / shrubs will be removed as part of landscape improvements to the site.

6.2 In addition to the previously approved tree losses, the B category small-leaved lime (T1) and C category cherry (T4) will need to be removed as part of landscape improvements.

6.3 The C category cherry sp. (T4) has been noted for its poor condition and limited remaining life expectancy, seen in Photo 10. During the arboricultural clerk of works site visit it was identified that T4's removal and replacement would allow for the proposed wall along the Site's frontage to be constructed in position of the trees stem offering continuity of this new feature whilst enhancing the landscape. A new tree planted in or close to T4's current position is likely to offer arboreal benefits for longer than the existing C category tree aiding continued tree cover / greenery within the street scene.

6.4 The proposed design includes replacing the raised planting bed containing T1, seen in Photo 11. Although T1 has been identified as a B category tree, its overall condition is fair and it has been heavily reduced with dense epicormic growth developing from its main stems. T1 is also leaning slightly out towards the highways. Therefore, due to its fair condition, relatively limited life span and opportunity for landscape improvement T1 will be removed and replaced with a suitable tree in its current location. This is deemed to be appropriate as the two other small-leaved lime (T2 and T3) will be retained and the overall tree cover on Site will be diversified promoting a more sustainable tree population on Site.

6.5 While some tree loss is required in order to facilitate the proposed development, these losses are confined to low-value trees and one moderate-value tree on site with the retention of more appropriate low-moderate value trees which have be incorporated into the design. By seeking arboricultural advice and designing for tree retention, the proposals have provided the best possible chance of successfully retaining better quality trees.

Image 10: C category cherry (T4) in a relatively poor condition.

Image 11: existing raised bed with retaining wall in relation to the small-leaved lime (T1).

Mitigation greening

6.6 At this stage of the planning process, the proposed development has included new raised beds to provide shrubs and other forms of vegetation within a more formal context. There is considered to be sufficient capacity to mitigate the proposed loss of small trees / shrubs with new planting located within the Site.

6.7 Details relating to the provision of a landscape specification can be provided, in response to a suitable planning condition.

6.8 To mitigate for the loss of T1 and T4 two new replacement selected standard trees (10-14 cm stem circumference at 1 m) will be planted close to or in their current position following the completion of all construction work. Selected species will include 1x *Liquidambar styraciflua* 'Lane Roberts' - Sweet Gum Lane Roberts and 1x *Acer campestre* 'Louisa Red Shine' - Field Maple Louisa Red Shine.

6.9 The new trees will be provided from nursery in good condition with their quality checked on delivery looking for transport damage. The planting pit will be excavated 1.5 x wider than the width of the root ball / containerised grown root system with the trees planted so that the root flare remains visible (i.e. not too deep). Soil excavated from the tree pit will be used, unless it is of poor quality, to back fill the planting pit. The trees will be securely staked and tied at around one-third the total tree height to allow for stem movement and sufficient adaptive growth. A surface layer of mulch will be formed at a depth of no more than 50-100 mm centred on the stem of the tree at a diameter of 1.5 m wide.

6.10 Maintenance and aftercare will involve annual checks on the condition of the newly planted trees for a 5-year period. Stakes, ties and mulch will be replaced as required and in the case of failed tree establishment, the tree/s will be replaced by a new tree. Providing root growth from the establishing trees is sufficient, the tree stakes and ties can be removed after two growing seasons. If root development and anchorage is not adequate for tree support after 2-3 years of growth from planting this may be an indicator of poor tree health and failed tree establishment.

6.11 Further information for best practice tree planting can be found at *BS 8545:2014 Trees: from nursery to independence in the landscape - Recommendations*.

Retained tree juxtapositions

6.12 In relation to the retained trees and vegetation (including any outside of the Site), the proposed development does not place any increased pressure upon these items that may result in inappropriate management (e.g., major branch removal or heavy pruning). The proposed development is therefore considered to be acceptable, regarding its juxtaposition to the retained trees and vegetation.

Demolition works

6.13 The TPP at Appendix A sets out the specifications for tree protection that are associated with the implementation of the proposed development, based on the details that are currently available. This TPP includes an AMS, which provides some baseline information relating to the installation and management of tree protection measures.

6.14 The demolition of the existing hard surfaces on the site will have the potential to impact upon retained trees. Where these operations are to take place within the root protection area (RPAs) of retained trees special methods of work will be required. These specific areas are highlighted and precautionary measures outlined in the tree protection method statement at Appendix A.

6.15 A working methodology is supplied below:

- All working operations with tree RPAs are required to be carried out under the guidance and supervision of the arboricultural clerk of works.
- The use of machinery to fracture and remove waste material will only be permitted if approved by the supervising arboricultural clerk or works and under the careful guidance of a banksman.
- Works will commence at the point closest to the tree and operate backwards until outside the designated RPA to avoid moving over exposed ground.
- Working from either outside the designated RPA or from an area of existing hard standing or temporary ground protection, the upper surface layer of hard standing will be fractured into small sections.
- Broken material will be lifted and removed to a designated storage area located outside the RPA of retained trees.
- The removal of the sub-base material will be undertaken in a carful manner, ensuring that no excavation works occur beyond the depth of the built material and into the soil layer below.

Construction works

6.16 Built development for new hard surfacing and light structures is proposed within the root protection area of retained trees. Details of the measures proposed are included in the Tree Protection Method Statement at Appendix A. A working methodology is detailed below.

6.17 A working methodology for the construction of new hard surfacing within RPAs is included below:

- All areas of existing hard surfacing to be replaced with paving will utilise the existing subbase depth to avoid excavation within undisturbed ground, unless hand dug excavations are monitored by the arboricultural clerk of works to ascertain the depth of significant roots. The proposed surface treatment will utilise porous paving slabs to facilitate water infiltration and gas exchange between the surface and roots below.

- All areas of new hard surfacing within grassed areas will utilise Flexipave, cellular confinement systems or other no-dig or porous surfacing that does not require a subbase. All works to create these new hard surfaces most be overseen by the arboricultural clerk of works.
- A surface scrape for no-dig surfacing may be undertaken by hand or using a rubber tracked mini excavator and sharp edged (not toothed) grading bucket to scrape back no more than 50mm depth of surface vegetation.
- Excavation along the edges closest to the trees may be undertaken by hand, working under guidance of the arboricultural clerk of works, to gauge the depth of surface layer and the level at which significant roots are present.
- Any exposed roots measuring less than 25mm diameter will be cut cleanly at the edge of the working area to leave as small a wound as possible.

6.18 A working methodology for the construction of slab / raft foundations within RPAs is included below

- A maximum 50mm vegetation scrape will be permitted to create an even surface.
- Should no roots be uncovered further careful excavation may be made by hand around the permitter of the slab location closest to the tree, whilst monitored by the arboricultural clerk of works, to ascertain the depth of significant roots greater than 25mm diameter.
- Once the base level of the slab has been ascertained, the excavated area will be lined within 1000-gauge polythene membrane prior to the concrete pour to prevent concrete from leaching into the soil.

6.19 Demolition and construction of the replacement boundary wall will observe the following methodology:

- The roots of the trees are likely intertwined or pushed into the foundation line of the wall, therefore where feasible the wall should be demolished to ground level only and the wall built up from the existing footings.
- Where this is not possible due to the condition of the existing footings, the subbase material may be manually broken out by hand exposing any significant roots within the foundation line.
- As the wall will not be rebuilt adjacent to the stem of the retained trees, the presence of significant roots within 1m surrounding the tree may be a good indicator of the best dimensions to start and stop this gap.
- Where significant roots, greater than 25mm diameter, are exposed further than 1m from the tree, they may not be cut back to allow for realignment of the footings but

must instead be incorporated into a lintel or other method of bridging or gapping the root within the foundations.

- Any exposed roots within the footings must be wrapped with 1000-gauge polythene membrane and a flexible plastic casing prior to the concrete pour to prevent damage.

6.20 It is likely that the majority of landscape work will be completed at the end of the project. Any exposed ground / soil on Site within RPAs will need to be protected using Temporary Ground Protection (TGP) prior to the installation of final hard surfaces. The TGP will consist of a geotextile membrane covered in a compressive layer of woodchip (100-150 mm depth) and boards securely held together to sustain pedestrian traffic. An example of this set up is shown in Image 12.

Image 12: Example Temporary Ground Protection - BS5837 - Ground protection, wood chip and scaffold boards: Ground protection incorporating 100mm wood chip layer placed on a geotextile membrane with scaffold board surface to support pedestrian traffic.

7 CONCLUSIONS

Arboricultural impacts

7.1 The proposed development will have relatively limited impact upon trees with the potential to enhance the landscape and amenities of the property. The proposals are therefore considered to be positive in landscape terms overall providing the two new selected standard trees as detailed in Section 6 are planted to mitigate for the loss of the C category cherry (T4) and B category small-leaved lime (T1).

Landscape impacts

7.2 Landscape proposals, with regard to planting detail, have not yet been formulated but there is sufficient space within new raised beds to plant shrubs and vegetation which can contribute significantly to the amenities of the site. The detail of the size, number of new planting on the site may be conditioned as part of the consented development.

7.3 As well as the more general landscaping requirements, two new trees will be planted as detailed in Section 6.

Policy compliance

7.4 The proposed development has complied with local planning policies in relation to trees. Specifically, trees have been properly considered in formulating these proposals and alterations have been made to accommodate the retention of trees and to minimise impacts on retained trees and offer replacement tree planting to ensure future canopy cover on Site.

8 APPENDICES CONTENTS

APPENDIX A

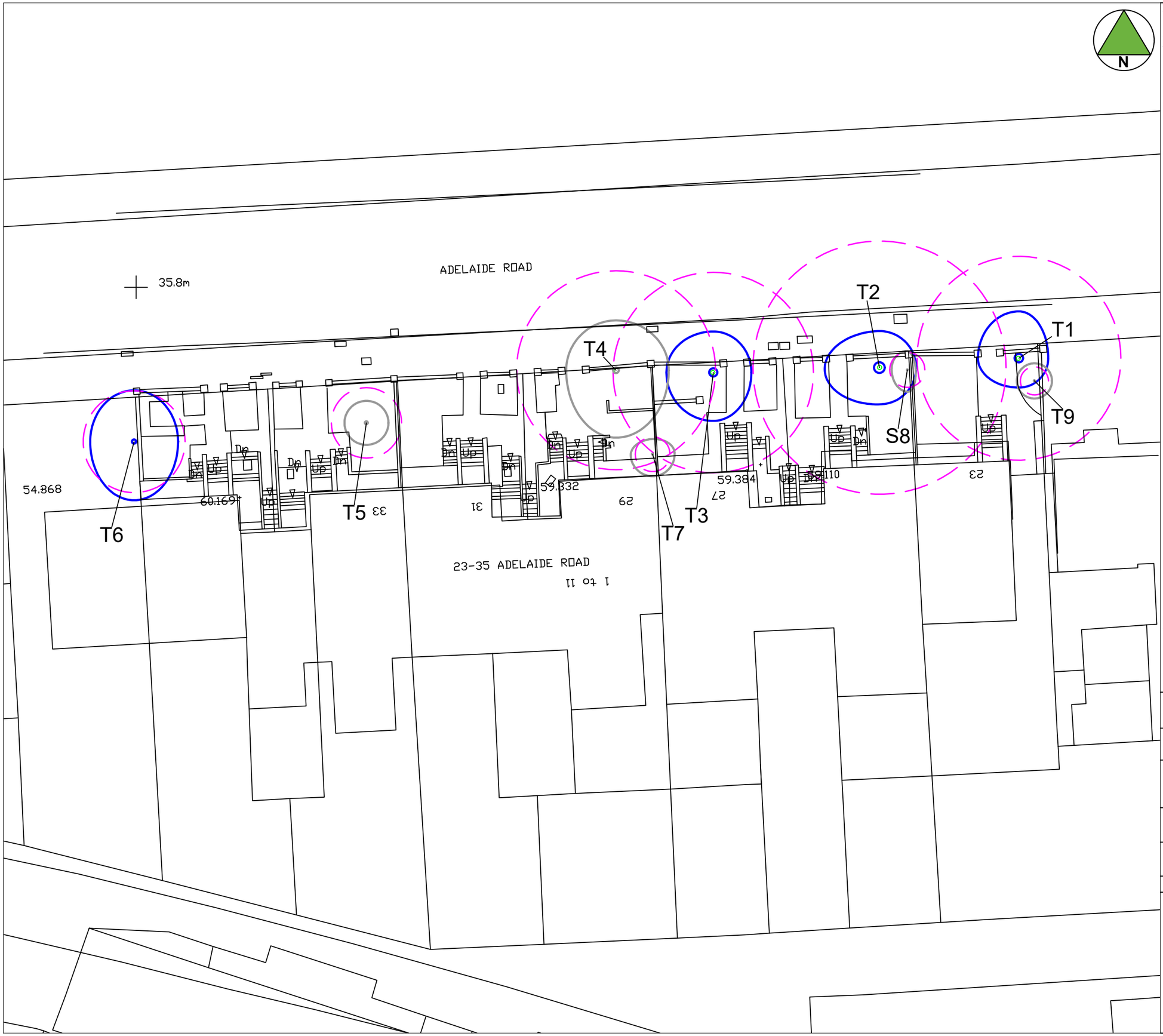
- 210870-P-10; Tree Survey
- 210870-P-11b; Proposed Layout and Tree Protection

APPENDIX B

- 210870-PD-10; Tree Schedule

APPENDIX A

- 210870-P-10; Tree Survey
- 210870-P-11b; Proposed Layout and Tree Protection



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BS 5837:2012 TREE RETENTION CATEGORIES

Category A
Trees of high quality with an estimated remaining life expectancy of at least 40 years.

Category B
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.

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.

Category U
Those in such a condition that the tree cannot realistically be retained as living trees in the context of the current land use for longer that 10 years.

BS5837 Root Protection Areas
Precautionary areas within which tree roots and soil structure must be protected. All works within these areas will require special methods of work.

REV	DATE	DESCRIPTION	DRAWN
-	xx.xx.xx	-	xx
Base Drawing			
-	09.10.21	TOPO	

0 1m 5m 10m

Title
Tree Survey

Client
Cristina Siladi

Project
23-25 Adelaide Road, Chalk Farm, London NW3 3QB

Date	Drawn by	Checked by
September 2021	HR	EC
Drawing No	**Rev**	**Scale**
210870-P-10	-	1:250@A3

DO NOT SCALE Use only figured dimensions

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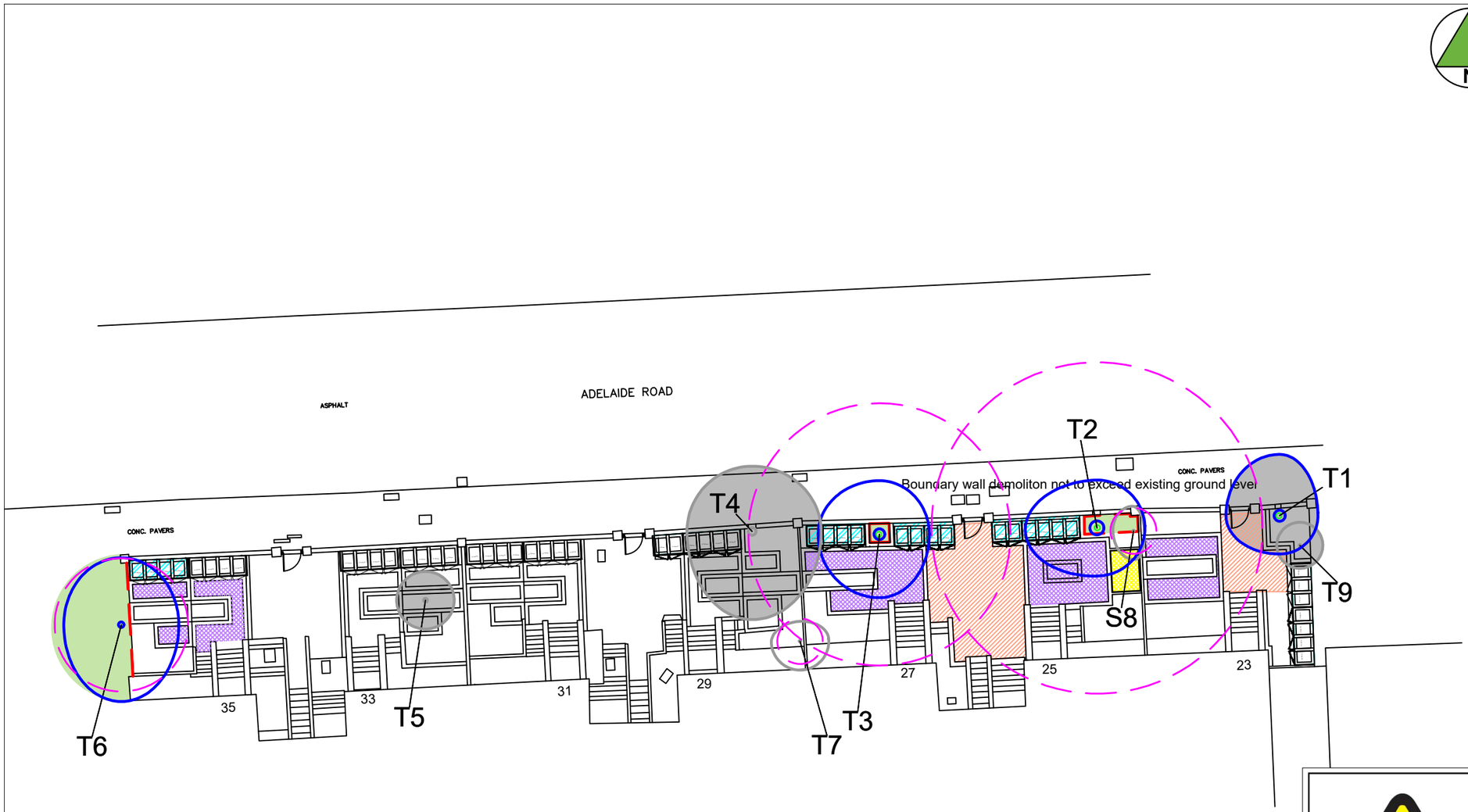

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BS5837 Root Protection Areas
Precautionary areas within which tree roots and soil structure must be protected. All works within these areas will require special methods of work.

Position of protective fencing and tree protection zones.

Areas of existing hard surfacing to be replaced with porous paving.

Areas of existing soft surfacing to be replaced with Flexipave or other porous no-dig solution.

Bike store cast on above-ground slab.

Proposed bin store areas cast on minimum depth reinforced slab utilising surface scrape only to install.

Trees to be removed shown shaded grey.

Temporary ground protection will be used in all areas where there is exposed ground / soil with RPAs prior to the installation of hard surfaces.

ARBORICULTURAL METHOD STATEMENT

TREE WORKS

Only the tree works specified within this report may be undertaken, after the appropriate planning consents have been acquired and in order to implement the consent. In the event of any uncertainty regarding tree works, the retained arboricultural consultant will be consulted and where appropriate the Local Planning Authority.

All tree works will be undertaken, in accordance with the best-practice recommendations provided in BS 3998:2010. The statutory responsibilities as outlined in the Wildlife and Countryside Act 1981 (as amended) and the Habitat Regulations 2010 will also be complied with.

TREE PROTECTION FENCING

The tree protection fencing and (where appropriate) ground protection, will be installed as specified within this plan, prior to the commencement of any demolition and construction works. No plant or materials will be delivered to site prior to the construction of the tree protective fencing other than those required to install the tree protection fencing. On every third panel, a sign will be fixed that states "*Tree Protection Zone (TPZ). Keep out. Any incursion into this area must be agreed in advance with the retained arboricultural consultant and Local Planning Authority*." An example of this sign is provided within this plan.

The position of the tree protection fencing must not be amended and no individual panels will be uncoupled, without the agreement of the retained arboricultural consultant and/or Local Planning Authority.

SERVICES AND DRAINAGE

The installation of drainage runs, manholes, storage tanks, and utilities will be positioned outside the root protection areas of retained trees. If the installation of new services and drainage runs are required within the root protection areas (RPAs) of retained trees, all methods of working will follow the guidance within Table 3 of BS 5837 or the National Joint Utilities Group's (NJUG) Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees (volume 4, issue 2).

Excavation works within the RPAs of retained trees will be undertaken manually with the use of hand tools only (under the supervision of the retained arboricultural consultant), unless otherwise agreed in advance by the retained arboricultural consultant. It is recommended that an air lance - and if required a soil vacuum - is used, to excavate service trenches within RPAs. If soil conditions are not suitable for this method of excavation, alternative hand tools can be used once agreed in advance by the retained arboricultural consultant.

All roots greater than 25mm in diameter will be retained and will immediately be wrapped in hessian or another appropriate material, to prevent desiccation and temperature fluctuations. Roots will be pushed aside to allow for runs to be installed, where this is practical and without causing root damage.

No machinery will be permitted within the TPZ, at any time, unless agreed in advance with the retained arboricultural consultant.

NO-DIG CONSTRUCTION AREAS

Areas that will require no-dig methods of construction are shown within this plan. Working methods within these areas will comply with the details outlined in the main report and in advance of works being undertaken will be agreed with the retained arboricultural consultant. Temporary Ground Protection will be used in all area where exposed ground / soil is formed prior to the installation of new hard surfaces.

ARBORICULTURAL CLERK OF WORKS

The monitoring of activities at the Site will occur, at the following points:

- To sign-off the tree protection measures;
- To sign-off the tree works;
- At other points as specified within this Report and the TPP.

It will be the responsibility of the main contractor (or other managing individual or organisation) to confirm the date and time of attendance, providing at least five working days of notice so that the project arboriculturist can confirm attendance.

GENERAL PROTECTION METHODS

No fires will be permitted, within 20m of the crown of any tree or other area of vegetation that includes hedgerows and groups of trees.

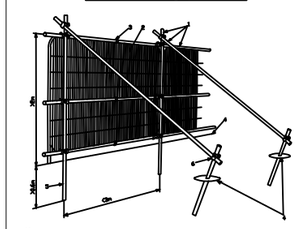
No changes in soil level will occur, within the TPZs and RPAs, without agreement in advance with the retained arboricultural consultant.

The TPZs will at all times remain free of liquids, materials, vehicles, plant, and personnel, without agreement in advance with the retained arboricultural consultant.

Any liquid materials spilled on site will immediately be cleared up. If liquids are spilled within 2m of any TPZ or RPA, the incident will immediately be reported to the retained arboricultural consultant, to determine the appropriate response.

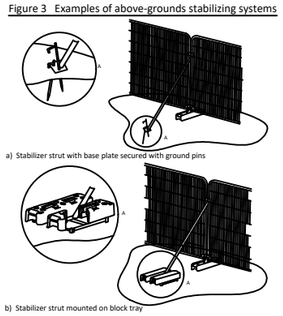
All damage to trees and other vegetation will immediately be reported to the retained arboricultural consultant, to determine the appropriate response.

Protective Fencing Specification



Key
1 Standard scaffold poles.
2 Heavy gauge 2m tall galvanized tube and welded mesh infill panels.
3 Panels secured to upright and cross-members with wire ties.
4 Ground level.
5 Uprights driven into the ground until secure (minimum depth 0.6m).
6 Standard scaffold clamps.

Figure 3 Examples of above-grounds stabilizing systems



a) Stabilizer strut with base plate secured with ground pins

b) Stabilizer strut mounted on block tray

REV	DATE	DESCRIPTION	DRAWN
b	01.02.22	Amendments to tree removals and tree protection	HR
a	07.10.21	5391_00_100 updated	HR
-	29.10.21	Base Drawing 5391_00_100	

0 1m 5m 10m

Title
Proposed Layout and Tree Protection

Client
Cristina Siladi

Project
23-25 Adelaide Road, Chalk Farm, London NW3 3QB

Date	Drawn by	Checked by
February 2022	HR	KH
Drawing No	**Rev**	**Scale**
210870-P-11	b	1:250@A3

DO NOT SCALE Use only figured dimensions

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APPENDIX B

- 210870-PD-10; Tree Schedule

210870-PD-10-Tree schedule (BS5837)

TIM MOYA ASSOCIATES

210870 - 23-25 Adelaide Road

Tree ID	No.	Species	Height (m)	Stem diameter (cm)	No. of Stems	CROWN SPREAD (m) N	NE	E	SE	S	SW	W	NW	Crown clearance (m)	L.B. (m)	Life stage	Condition Notes	Survey date	RPA (m^2)	RPR (m)	Life expectancy (yrs)	BS Category
Tree T1	1	Tilia cordata (Small Leaved Lime)	10.0	58	1	3.2		2.0		2.0		2.8		3.0		Early Mature	Structural condition Fair. Physiological condition Fair. Crown reduction - Recent. Minor stem lean. Located in raised brick planter. Planter splayed. Dense ground vegetation prevents close inspection. Multi stemmed above 4m. Stem location not accurately located on topo.	06/09/2021	152.2	7.0	20-40	**B2**
Tree T2	1	Tilia cordata (Small Leaved Lime)	14.0	72	1	2.5		2.5		2.5		3.74		7.0		Mature	Structural condition Fair. Physiological condition Fair. Crown reduction - Recent. Located at higher level than adjacent garden. Low retaining wall. Significant movement boundary wall. Epicotmic growth between base and wall. Vegetation obscures basal inspection.	06/09/2021	234.5	8.6	20-40	**B2**
Tree T3	1	Tilia cordata (Small Leaved Lime)	12.0	57	1	2.8		2.6		3.3		3.2		6.0		Early Mature	Structural condition Fair. Physiological condition Fair. Crown reduction - Recent. Dense epircomic growth. Extensive wall movement. Light hard surfacing for bin area. Basal vegetation obscures inspection.	06/09/2021	147.0	6.8	20-40	**B2**

Stem **green** Estimated value
Stem **AVE** Average stem diameter for tree groups
Stem **COM** Combined stem diameter in accordance with BS5837
L.B. Height of lowest branch attachment (m) - where relevant

The survey information in this schedule has been gathered following a BS5837 survey for planning purposes. Where hazardous trees have been noted recommendations for works may have been made but this survey cannot be relied upon as a full health and safety assessment of the trees.

Generated By MyTREES tree management software

210870 - 23-25 Adelaide Road

Tree ID	No.	Species	Height (m)	Stem diameter (cm)	No. of Stems	CROWN SPREAD (m) N	NE	E	SE	S	SW	W	NW	Crown clearance (m)	L.B. (m)	Life stage	Condition Notes	Survey date	RPA (m^2)	RPR (m)	Life expectancy (yrs)	BS Category
Tree T4	1	Cerasus avium (Wild Cherry)	11.0	56 COM	2	3.4		3.6		4.6		3.4		2.0		Mature	Structural condition Fair. Physiological condition Fair. Crown - Sparse upper crown. Higher value C category tree, reduced due to form and life expectancy. Varied levels and retaining walls. Brickwork and rubbish around stem. Concrete bin store at slightly higher level. Stem leaning on wall. Significant movement. Fused stems. Recent crown reduction, large diameter wounds over road. Basal inspection obscured.	06/09/2021	144.8	6.8	10-20	C1
Tree T5	1	Cordyline australis (Missing Species)	5.0	20	1	1.5		1.5		1.5		1.5		2.0		Early Mature	Structural condition Fair. Physiological condition Fair.	06/09/2021	18.1	2.4	10-20	C1
Tree T6	1	Acer pseudoplatanus (Sycamore)	14.0	29	1	3.5		3.0		4.0		3.0		2.0		Semi Mature	Structural condition Fair. Physiological condition Fair. Crown lifted over site. Low boundary wall.	06/09/2021	38.0	3.5	20-40	B2
Tree T7	1	Cerasus avium (Wild Cherry)	5.0	9 COM	2	1.03		1.5		1.5		1.5		1.0		Young	Structural condition Fair. Physiological condition Fair. Location - Estimated as tree not plotted on topographical survey.	06/09/2021	4.4	1.2	10-20	C2
Shrub S8	1	Viburnum sp. (Viburnum sp.)	2.5	10 COM	2	1.28		0.57		1.5		1.07		1.0		Semi Mature	Structural condition Fair. Physiological condition Fair. Crown reduction - Recent. Location - Estimated as tree not plotted on topographical survey.	06/09/2021	4.5	1.2	10-20	C2
Tree T9	1	Ilex aquifolium (Holly)	4.0	8	1	1.2		1.2		1.2		1.2		1.0		Semi Mature	Structural condition Fair. Physiological condition Fair. Location - Estimated as tree not plotted on topographical survey.	06/09/2021	2.9	1.0	10-20	C2

Stem **green** Estimated value
Stem **AVE** Average stem diameter for tree groups
Stem **COM** Combined stem diameter in accordance with BS5837
L.B. Height of lowest branch attachment (m) - where relevant

The survey information in this schedule has been gathered following a BS5837 survey for planning purposes. Where hazardous trees have been noted recommendations for works may have been made but this survey cannot be relied upon as a full health and safety assessment of the trees.

Summary table with retention category

	Shrub	Tree	Total
B2	0	4	4
C1	0	2	2
C2	1	2	3
Total	1	8	9

Summary table with life stage

	Shrub	Tree	Total
Early Mature	0	3	3
Mature	0	2	2
Semi Mature	1	2	3
Young	0	1	1
Total	1	8	9

Table 1 of BS5837 (2012) **Cascade chart for tree quality assessment**

Category and 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 (e.g. 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 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			**RED**
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Tree that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or 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 arboricutural and/or landscape features.	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture).	**GREEN**
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, 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.	**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 150 mm	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**

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