
eight
associates

Eight Associates
Ground Floor
57a Great Suffolk Street
London
SE1 0BB

+44 (0) 20 7043 0418

www.eightassociates.co.uk
info@eightassociates.co.uk

24 Heath Drive Arboricultural Implication Assessment

Prepared by:

Rachel Crookes
Eight Associates
Ground Floor
57a Great Suffolk Street
London, SE1 0BB

email:

rachel@eightassociates.co.uk

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Prepared for:

Hannes Voss
Studio Kyson
28 Scrutton Street,
London,
EC2A 4RP

Issue Status

24 Heath Drive

	Prepared on behalf of Eight Associates by
	Rachel Crookes
Position:	Ecologist
Signature:	RC
	Verified by
	Joanna Peacock
Position:	Associate
Signature:	JEP

DISCLAIMER

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Executive Summary

24 Heath Drive

Executive Summary

Eight Associates has been appointed by Studio Kyson to carry out an Arboricultural Implication Assessment to the British Standard 5837:2012 'Trees in relation to design, demolition and construction' at 24 Heath Drive, London, NW3 7SB.

A site visit was made on the 7th October 2016 to survey the trees, hedges and vegetation to the British Standard. The condition of all trees on site was assessed and a Category Rating was allocated; this information is detailed in Appendix 3 of the Tree Survey report [1948 24 Heath Drive Tree Survey 1610-31 sc]. A Tree Constraints Plan was produced following the survey, which along with the Tree Survey forms the basis of this report.

A plan of the trees to be retained and removed, as well as their Root Protection Areas (RPA) have been outlined on plans of the proposed development using AutoCAD. This report details considerations of trees to be affected by the proposed build.

Summary of tree work to be undertaken on site:

Consideration	Number of trees
Current tree population	25 trees, 2 hedges and 1 group
Trees to be retained	7 trees (including all three 'A' category trees and 4 'B' category trees).
Trees to be removed due to condition	3 trees
Category A trees to be removed	0
Category B trees to be removed	3 trees
Category C trees to be removed	12 trees, 2 hedges and 1 group

Introduction

24 Heath Drive

Introduction

Eight Associates Ltd has been instructed by Hannes Voss at Studio Kyson to produce an Arboricultural Implication Assessment (AIA) on specified trees and vegetation in and adjacent to the site as identified at 24 Heath Drive. The AIA is based on results of a Tree Survey and Tree Constraints Plan undertaken on 7th October 2016 in partnership by Eight Associates Ltd and Oliver Booth from Writtle Forest Consultancy Ltd.

The aim of this AIA is to consider how the proposed development and the associated trees will co-exist and interact in the present and the future. The AIA addresses and considers issues such as statutory constraints, above and below constraints, alternatives to tree loss and infrastructure requirements. It also considers such issues as end use of space, the need to prune or remove trees due to excessive shade or encroachment and whether it is possible to plant new trees.

There are some aspects that are not dealt with within report (please also refer to Appendix 1). The AIA does not include an Arboricultural Method Statement (AMS), or Tree Protection Plan (TPP). This AIA does not consider issues relating to boundary lines and the proposed structures. It may be that such issues affect ownership of trees but the assessment does not deal with this issue. (Issues of boundary line dispute and/or ownership of vegetation may require a land registry search and reference to local records. This can be conducted if requested).

Contact Details

24 Heath Drive

Ecologist's Details	
Company Name	Eight Associates
Company Address	57a Great Suffolk Street, London, SE1 0BB
Contact Name	Stacey Cougill
Contact Telephone Number	020 7043 0418
Tree Survey Report Reference	1948 24 Heath Drive AIA 1802-06rc.docx
Developer / Client Details	
Company Name	Studio Kyson
Company Address	28 Scrutton Street, London, EC2A 4RP
Contact Name	Hannes Voss
Contact Telephone Number	020 7247 2462
Development Details	
Development Name	24 Heath Drive
Development Address	24 Heath Drive, London, NW3 7SB

Proposed development 24 Heath Drive

Description of Proposed Development

The fundamental changes to the build affecting the trees are understood to include:

1. The demolition of the existing garage to the left of the build and establishment of new build to the left-hand flank wall.
2. Extension to the rear of the property.
3. Landscaping Proposals including:
 - a. Planting of trees and shrubs
 - b. Hard landscaping works involving brick retaining walls, path ways, gates.
 - c. Structures such as bike sheds, outdoor fireplace and sculpture.
 - d. External lighting installation

It is understood that there are further works primarily within the footprint of the build, including the extension of any existing basement. Whilst this will require suitable access for build works it will not affect trees as currently proposed to be retained and there is no requirement for mitigation of trees in relation to the improvements within the build line of the existing build.

Considerations of the trees affected by the proposed build 24 Heath Drive

Tree No.	Species	Removal due to		Mitigation required		Details of how proposed build layout affects tree and mitigation required
		Works	Condition	Canopy	RPA	
H1	Privet	X	N/A	N/A	N/A	Remove to allow suitable access, storage and working area.
H2	Privet	X	N/A	N/A	N/A	Remove to allow suitable access, storage and working area.
T1	London Plane	N/A	N/A	N/A	X	Possible infringement of RPA due to required working/storage area- install ground protection. Edging – Hand dug Resin bond – Lay on existing sub base Stone steps to front door - Lay on existing sub base. New Planting – Hand dug Bin and Bike store – Construct on sub base without excavation for foundation Posts for trellis – Hand dug Sliding gate installation – Any associated excavations including gate posts to be hand dug Retaining Wall – Utilise existing foundations Trenching for lighting cable - Hand dug Trenching for Air Condition Ducting
T2	London Plane	N/A	N/A	N/A	X	Possible infringement of RPA due to required working/storage area- install ground protection. Edging – Hand dug Resin bond – Lay on existing sub base New Planting – Hand dug Bin and Bike store – Construct on sub base without excavation for foundation Posts for trellis – Hand dug Sliding gate installation – Any associated excavations including gate posts to be hand dug Trenching for lighting cable - Hand dug Trenching for Air Condition Ducting
T3	Oak	X	N/A	N/A	N/A	Remove to allow suitable access, storage and working area.
T4	Elder	X	N/A	N/A	N/A	Remove to allow suitable access, storage and working area
T5	Elder	X	N/A	N/A	N/A	Remove to allow suitable access, storage and working area
T6	Pyracantha	X	N/A	N/A	N/A	Remove to allow build works
T7	Pyracantha	X	N/A	N/A	N/A	Remove to allow build works
T8	Goat Willow	X	N/A	N/A	N/A	Remove to allow build works
T9	Elder	X	N/A	N/A	N/A	Remove to allow build works
T10	Birch	X	N/A	N/A	N/A	Remove to allow access for build works
T11	Cherry	N/A	X	N/A	N/A	Fell due to condition

Considerations of the trees affected by the proposed build 24 Heath Drive

Tree No.	Species	Removal due to		Mitigation required		Details of how proposed build layout affects tree and mitigation required
		Works	Condition	Canopy	RPA	
T12	Cherry	X	N/A	N/A	N/A	Remove to allow build works
T13	Rhododendron	X	N/A	N/A	N/A	Remove to allow build works
T14	Cherry	N/A	X	N/A	N/A	Fell due to condition
T15	Yew	X	N/A	N/A	N/A	It is considered that this tree has outgrown its position and will need to be removed to allow improvement to landscaped garden area.
T16	Yew	X	N/A	N/A	N/A	It is considered that this tree has outgrown its position and will need to be removed to allow improvement to landscaped garden area.
T17	Oak	X	N/A	N/A	N/A	Remove to allow access for build works
T18	Sycamore	X	N/A	N/A	N/A	Remove to allow access for build works
T19	Crab Apple	X	N/A	N/A	N/A	Remove to allow access for build works
T20	Sycamore	N/A	N/A	X	X	New Planting – Hand dug Tiered Planters – Constructed without excavation of soils below 150mm Seating - Constructed without excavation of soils below 150mm Air conditioning area surrounded by Trellis – Units need to re-direct warm air away from tree canopy, laid on bases constructed without excavation. Trellis posts to be hand dug. Trenching for lighting cable - Hand dug
T21	Oak	N/A	N/A	N/A	X	Turfed Lawn – Laid without excavation of soils below 150mm Seat on Breedon gravel - Laid without excavation of soils below 150mm Tiered Planters – Constructed without excavation of soils below 150mm Air conditioning area surrounded by Trellis – Units laid on bases constructed without excavation. Trellis posts to be hand dug. Replacement Fences – Posts to be hand dug in area of existing posts, removing concrete with hand operated tools. New posts to be located in same area without widening holes. Trenching for lighting cable - Hand dug

Considerations of the trees affected by the proposed build

24 Heath Drive

Tree No.	Species	Removal due to		Mitigation required		Details of how proposed build layout affects tree and mitigation required
		Works	Condition	Canopy	RPA	
T22	Horse Chestnut	N/A	N/A	X	X	<p>Turfed Lawn – Laid without excavation of soils below 150mm</p> <p>Seat on Breedon gravel - Laid without excavation of soils below 150mm</p> <p>Tiered Planters – Constructed without excavation of soils below 150mm</p> <p>Replacement Fences – Posts to be hand dug in area of existing posts, removing concrete with hand operated tools. New posts to be located in same area without widening holes.</p> <p>Raised Timber playhouse – Possible requirement to prune back canopy. All supporting posts to be hand dug. If set on concrete slab soils will not be disturbed beyond a depth of 200mm.</p> <p>Trenching for lighting cable - Hand dug</p>
T23	Lime	N/A	N/A	X	X	<p>Crown lift to a height of 4m retaining major laterals. Crown reduce by 2m to NW and SE and 1m to NE and SW. Crown clean.</p> <p>Turfed Lawn – Laid without excavation of soils below 150mm</p> <p>Seat on Breedon gravel - Laid without excavation of soils below 150mm</p> <p>Tiered Planters – Constructed without excavation of soils below 150mm</p> <p>Replacement Fences – Posts to be hand dug in area of existing posts, removing concrete with hand operated tools. New posts to be located in same area without widening holes.</p> <p>Raised Timber playhouse – Possible requirement to prune back canopy. All supporting posts to be hand dug. If set on concrete slab soils will not be disturbed beyond a depth of 200mm. Build should not be within 500mm of main stem.</p> <p>Feature wall – To be constructed without foundation. If concrete slab is to be constructed soils will not be disturbed beyond a depth of 200mm.</p> <p>Trenching for lighting cable - Hand dug</p>

Considerations of the trees affected by the proposed build 24 Heath Drive

Tree No.	Species	Removal due to		Mitigation required		Details of how proposed build layout affects tree and mitigation required
		Works	Condition	Canopy	RPA	
T24	Lime	N/A	N/A	X	X	<p>Crown lift to a height of 4m retaining major laterals. Crown reduce by 2m to N, W and S to balance crown. Crown clean.</p> <p>Turfed Lawn – Laid without excavation of soils below 150mm Seat on Breendon gravel - Laid without excavation of soils below 150mm</p> <p>Tiered Planters – Constructed without excavation of soils below 150mm</p> <p>Replacement Fences – Posts to be hand dug in area of existing posts, removing concrete with hand operated tools. New posts to be located in same area without widening holes.</p> <p>Feature wall – To be constructed without foundation. If concrete slab is to be constructed soils will not be disturbed beyond a depth of 200mm.</p> <p>Trenching for lighting cable - Hand dug</p>
T25	Oak	N/A	X	N/A	N/A	Fell due to condition
G1	Group	X	N/A	N/A	N/A	Removal for improvement of garden area and improved maintenance of retained trees in area

Summary of effects on the trees from proposed layouts 24 Heath Drive

Trees and hedges to the front of the property

All trees and hedges that are considered for removal to the front of the property are 'C' category trees of limited value. The removal of the trees and hedges will improve sight lines and access for vehicles. Furthermore their removal will ease access of operations, allow for space for temporary storage of materials necessary for the build as well as allow suitable area for the demolition and construction of the new build. Hedge H2 is situated on the boundary of the property, therefore ownership must be established with the adjacent householder and permissions sought before progressing works.

It is understood that the removal of all trees and hedges will be mitigated with replacement planting. It is recommended that native species are selected for replacement planting and chosen for the benefits of improved biodiversity and increased amenity within the area.

Trees T8 and T9

Trees T8 and T9 to the left-hand side of the build are of low value and could not be sustained in their current position without possible damage to the existing build. These will need to be removed to allow the demolition and installation of the proposed build.

Trees to the rear of the property

Three trees have been classified as 'U' category trees due to their current condition. Further tree loss relates primarily to the installation and access to the build works proposed. The removal of trees T12 and T13 will allow the installation of the single-storey extension. Removal of trees T10, T11, T18 and T19 will allow sufficient works to enable to progress the works. It is considered prudent to remove T17 as the RPA of the tree will be infringed by 30% to accommodate the working / storage area to the rear. All of these trees are 'C' category trees of little value to retain, save T10 which is a 'B' category tree. The loss of T10 may be mitigated with suitable replacement planting within the garden area.

Trees to the rear of the garden

The current garden is in a state of disrepair and the vegetation has generally been recently unmanaged. It is considered appropriate to remove those trees of low value, which will allow better management of the higher value trees to be retained and to allow the garden to be restored to better management into the future. This includes the removal of a group of trees that are generally self-sown and with misshapen crowns due to their proximity to larger trees. Works are also recommended to some of the larger trees to be retained, to improve the condition and general management of these trees as well the existing garden area.

It is also considered that Tree 15 Yew and Tree 16 Yew have outgrown their position and are causing damage to hard landscaping within the garden. It is considered that these trees should be removed to allow improvement to the landscaped garden area. The removal of these trees may be mitigated with suitable replacement planting within the garden, utilising species more appropriate for the garden and less competitive to existing larger trees to be retained. It is recommended that such replacement planting is native species and chosen for the benefits of improved biodiversity.

Summary of effects on the trees from proposed layouts 24 Heath Drive

Trees to the rear of the garden (*cont.*)

The general overall build proposal retains the better quality existing trees such that the general arboreal nature of the site and the surrounding area would not be lost. Suitable replacement planting will be required to mitigate lost trees and such replacement planting will be an opportunity to improve the existing tree stock within the area as well as improve overall benefits of biodiversity.

Required mitigation works related to
proposed build works

The main mitigation related to build works that are required in relation to retained trees is to the front of the property. This includes the RPA of London Plane trees T1 and T2 encroach upon the main drive of the property. There is currently an existing hard standing driveway and a shrub bed within this area. The existing hard stand should provide adequate protection against compaction from vehicles and machinery associated with the build. If it is considered the surface is not adequate for larger vehicles or machinery that may be used, then the area should be protected with suitable ground protection. This typically will consist of temporary road way, suitable to withstand and spread the weight of vehicles or machinery, such that there will be no compaction to the soils beneath the existing hard stand.

Where there is currently a shrub bed at the front of the property, adjacent to hedge H1 this would be required to have ground protection installed to ensure no compaction to soils from storage or from build operations, in order to protect the root protection areas of T1 and T2 London Planes. There are 2 smaller shrub beds to the front of the build. It is considered that no ground protection would be required due to their size and limited incursion within the RPA of T1.

Mitigation Works related to Proposed Landscape works 24 Heath Drive

Mitigation to avoid compaction

All landscaping works should be carried out where possible without the use of any driven machinery that may compact soils within the RPA of retained existing trees. Where this is not possible all machinery will be driven on temporary road way to reduce compaction of ground – please refer to Appendix 1 for further details.

Mitigation relating to excavations

The landscape works proposed involves numerous excavations relating to either planting, trenching for cable installation, installation of fence and trellis posts, installation of main access gate. These works will be required to be hand dug without the use of mini excavators. An Arboriculturist will be required to be on site to oversee these operations, to protect or prune roots as required and provide details of operations where roots are encountered within RPAs of retained trees as deemed appropriate. The following methodology will be observed:

1. All works will be over seen by a supervising Arboriculturist.
2. All excavations will be made to the minimal dimensions required to work and obtain the necessary depths. It is envisaged that no dug requirements will exceed 1.2m in depth and will therefore not require shoring to be installed.
3. All digging operations will be carried out using hand tools only. All care and attention will be due to ensure that the discoverable roots are not damaged.
4. All soils removed will be placed on suitable ply sheets and be used in the backfill process. All excess soils will be removed from site.
5. All roots under 20mm diameter can be cut using a suitable clean, sharp tool – back to a suitable growth point.
6. All roots over 20mm will be retained and wrapped in hessian sacking to avoid damage to the bark of the root.
7. If the pit is to be left open this will be suitably covered and protected from all unsupervised intrusion.
8. On completion of operation soils will be backfilled in 300mm layers and compacted around the roots. Soils immediately around the roots will be backfilled without compaction with sharp sand.
9. The Arboriculturist will take photos of the procedure and produce a brief report as to roots encountered.

Mitigation for driveway installation

It is understood that for installation of the front drive way there will be need to set edging/ kerb stones. These should be installed using hand dug methodology as detailed in the 'Mitigation relating to excavations' section above

There will be requirement to install resin bond surface and stone paving to the front door. This will require removal of the existing surface. However, the sub base material should be retained. This should not be excavated and should form the base for the resin bond and paving to be laid upon. If it is that the sub base is inadequate, then the consulting Arboriculturist must inform as to best procedure to proceed with alternative works. As with the hand dug excavations the works will be supervised by an Arboriculturist.

Summary of effects on the trees from proposed layouts 24 Heath Drive

Mitigation relating to installation of concrete bases and subsequent structures

As part of the landscape proposals to install bike store, shed and possibly related to the air conditioning units and playhouse to be installed it may be necessary to lay concrete bases. These should be laid ideally without excavation. If there is requirement to excavate this should not exceed 150-200mm below existing soil levels with due care and attention to any possible roots encountered. Where roots may be encountered over 20mm in diameter the Arboriculturist will be consulted as to how best to proceed.

Before laying the concrete base it should be ensured that grounds will not be contaminated with water associated with the concrete. It will be necessary to lay a suitable protection to exposed soils prior to laying the concrete and to protect the surrounding soils whilst working.

Mitigation relating to air conditioning units

It is understood that the air conditioning units are to be installed at a height of 1.2m and that the consequent air released will be warm. Where these units are to be placed under the canopy of retained trees, it will be necessary to install suitable cowling to re-direct and dissipate the consequent air released. This is to ensure the canopy is not subjected to concentrated areas of unnatural warm air, that may be detrimental to the tree's biological functioning

All trenching relating to the installation of the air conditioning units will need to be carried out as of the mitigation outlined within the 'Mitigation relating to excavations' section above

Mitigation relating to fence posts

Where new fence posts are to be installed this may be done through the use of driven metal posts which the post is subsequently secured in, circumventing the need to excavate. Where excavation is required this should be done using the methodology as outlined the 'Mitigation relating to excavations' section above . Where concrete is to be used to secure the post, this should be installed either using dry compacted ballast mix or by lining the excavation if a wet mix is to be used. This is again to avoid contamination of soils.

Mitigation relating to turfed lawn

It will be necessary to level the area on which turf is to be laid. This should be achieved by levelling the area with hand tools only and without the use of machinery. Soils should not be removed or built up to levels in excess of 300mm of the existing ground levels. Ideal soils should not be imported to build up levels. If the ground is compacted and requiring to be tilled prior to laying turf, this should be carried out using an air spade only – not a rotavator - to ensure roots are not damaged.

Installation of vertical protective barriers

It is necessary to install permanent vertical protective barriers prior to the commencement of the proposed works. The barriers will remain in-situ throughout the development and removed only on completion of the main build prior to any landscaping.

Change in Site Use and Tree Management Implications 24 Heath Drive

The Implications of the Potential Growth and/or Nuisance of the Trees within the next 10 years

Potential Root damage to Infrastructure

There do not appear to be any implications in relation to the proposed retained trees in relation to the build proposals.

We are not aware of the sub-soils relating to the site in relation to possible subsidence issues. The trees considered for retention are of medium to high water demand. This report does not consider the implications of the trees either directly or indirectly on the proposed build/ construction.

Foundation depth and design to support the structures must take into account the local sub-soils and existing and future vegetation.

Appraisal of Tree Loss and Ground Disturbance

24 Heath Drive

Summary of tree work

Consideration	Number of trees
Current tree population	25 trees, 2 hedges and 1 group
Trees to be retained	7 trees (including all three 'A' category trees and 4 'B' category trees and 2 hedges)
Trees to be removed due to condition	3 trees
Category A trees to be removed	0
Category B trees to be removed	3 tree
Category C trees to be removed	12 trees and 1 group and 2 hedges

No direct ecological concerns have been raised in relation to the works or the trees on the site. Ecological considerations that involve EU Habitats Directive will over rule any arboricultural recommendations as given within this report. Before tree works are to progress, it may be necessary to carry out checks for nesting birds and bat roosts.

Conclusion

24 Heath Drive

Conclusion and further considerations

It is considered that the development as proposed will have little impact on the arboreal character of the landscape provided that specified mitigation as set out in the Arboricultural Method Statement are fully adhered to throughout the duration of the construction process.

The TPP outlines trees to be retained, removed, location of barriers and type of barrier to be installed. The AMS will take into consideration construction operations undertaken in the vicinity of the trees. It will deal with such issues as site access, intensity of construction activity, space needed for works, location of materials and installation of service runs.

Appendix 1: Limitations

24 Heath Drive

Limitations of the Arboricultural
Implication Assessment

Please also refer to the Introduction of the report.

This Assessment is based upon information obtained from the Tree Survey. All dimensions and measurements are based upon the previous data collected from the survey and from the design drawings as provided.

Data on which the Assessment is based

Validity, accuracy and findings of the report will directly relate to the accuracy of information provided at the time of the survey.

No checking of independent data provided will be undertaken. This is particularly relevant with regards to scaled maps and drawings provided to Eight Associates

Validation of the Assessment

The considerations/ findings in this tree report and tree survey are only valid for one year. Such considerations/ findings will become invalid if any building works are undertaken, soil levels are altered or tree work undertaken.

If there are any alterations to either the property or soil levels, or if tree works are carried out, it is recommended that a new tree survey/report is undertaken.

Trees in relation to other Properties

This assessment only considers the trees in relation to the site and the proposed structures as identified.

The Assessment only considers those trees as are relevant to the proposed structures. Comment is not made with regard to trees in relation to structures beyond the boundaries as identified, (third party property). Issues with regard to neighbouring property and trees on the site considered maybe relevant if new planting is considered or required.

Damage to, or possibility of damage to, any other structure that is not referred to within the report is not considered unless otherwise specified. This includes both neighbouring structures and any other structure on the property.

Appendix 1: Limitations

24 Heath Drive

Trees in Relation to Subsidence, Heave and Direct damage

This report does not deal with issues relating to subsidence or heave in relation to any built structures and surrounding vegetation. However, it may be prudent to consider the effects of heave on any property if trees are removed. Unless information relating to soils is presented or if the client has instructed the assessment to consider the type and depth of foundations, then this is not considered within the assessment.

Trees subject to statutory controls

If the trees are covered by a Tree Preservation Order or are located in a conservation area it will be necessary to consult the local authority before any pruning works, other than certain exemptions, can be carried out.

The works specified above are necessary for reasonable management and should be acceptable to the local authority. However, tree owners should appreciate that the local authority may take an alternative point of view and have the option to refuse consent.

Trees are subject to changes outside man's control

Trees are living organisms subject to changes outside man's control.

Changes to ground water conditions will affect the root growth of a tree. Such changes are not always the result of man's influence and others factors may be involved.
