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Site Details: 7 Compayne Gardens, London, Nw6 3DG

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1.0 – Summary of Instruction

An arboricultural survey to undertake an above ground assessment of the physiological health and structural condition of two trees growing within the boundaries of the property was commissioned by our client.

The arboricultural survey and subsequent report are intended to provide an assessment of the trees' condition and present management recommendations where necessary.

Instructions were to:

- Carry out an above ground Visual Tree Assessment (VTA) of two individual trees which feature within the boundaries of the above property;
- Produce a written report detailing the trees' species, dimensions, age class, and comment on their physiological & structural condition;
- Make recommendations for tree surgery work, as required in the interests of sound arboricultural management for trees growing within the urban environment, including reasons for the suggested work.
- Set out management timescales for re inspection and ongoing maintenance;

The report is to include all relevant tree data, as well as recommendations, timescales and priorities for any necessary tree surgery work if required.

1.1 – Visual Tree Assessment (VTA)

The Visual Tree Assessment (VTA) method of inspection is an internationally recognised tree hazard assessment method developed by Prof. Claus Mattheck: *Body Language of Trees – a handbook for failure analysis (HMSO, 1994).*

The basis of VTA is the identification of (external) symptoms which a tree produces in reaction to a weak spot or area of mechanical stress. These can then be interpreted in terms of potential direct impact hazard features within a tree.

The VTA method of inspection does not allow for opinions to be made concerning the risk of a trees potential to cause indirect impact on nearby structures. Indirect impact refers to potential problems caused by changes in soil moisture content in shrinkable soils (i.e. those soils with a high clay content); to which trees can be a contributing factor.

The tree inspection survey undertaken at the above site was conducted in accordance with Stage 1 of the VTA process.

1.2 – Visual Tree Assessment (VTA) in a Seasonal Context

There are both advantages and disadvantages to carrying out VTA assessments in summer versus the winter:

Spring/Summer

Advantages: Vitality can be easily assessed and deadwood is clearly visible.
Disadvantages: Trees in full (heavy) leaf (e.g. Lime) can obscure assessment of branch/trunk defects. Pathogenic fungal bodies are not always present at this time of year.

Autumn/Winter

Advantages: Branch/trunk structure more readily visible from the ground and pathogenic fungi are best spotted at this time of year.
Disadvantages: Vitality is not so readily assessed and deadwood is not so easily identifiable.

For these reasons, spring/summer and autumn/winter VTA assessments are best alternated.

2.0 – Report Limitations – (*The scope of this report is restricted by the following limitations*)

- *All observations were from ground level, a visual assessment of external features only, assisted (as required) by the use of binoculars, a metal probe for inspection of cavities, splits etc. and a rubber sounding mallet for audible resonance testing.*
- *All observations were recorded from within the boundaries of our client's property.*
- *Below ground tree roots and buried parts were not inspected.*
- *Detailed background information is not known concerning the past history of the site, the soil type, geology or hydrology of the environs.*
- *No inspection material (such as a subsoil sample to determine the plasticity index of shrinkable soil) has been taken or assessed by a laboratory.*
- *No data regarding the structure, plasticity index or moisture volume change potential of the soil at the site has been made available from other sources.*
- *Assessing the potential influence of trees upon load-bearing soils beneath existing and proposed structures, resulting from water abstraction by trees on shrinkable soils, was not included in the contract brief and is not, therefore, considered in any detail in this report. Tree Sense Arboricultural Consultants cannot be held responsible for damage arising from soil shrinkage or heave issues related to the retention or removal of trees on site.*
- *An above ground Visual Tree Assessment (VTA) of trees does not allow for opinions to given by Tree Sense Arboricultural Consultants in respect of any trees potential to cause an indirect impact to structures situated at the property.*
- *Weather conditions were dry and bright at the time of the survey.*
- *All assessments of any previous tree management regimes are approximate based on the current appearance of the tree surveyed.*
- *Tree heights have been estimated to within 1m.*
- *Stem diameters have been measured where accessible to within 50mm.*
- *Where a tree is subject to a Tree Preservation Order (TPO) and/or stands within a designated Conservation Area, it will be necessary for the tree owner or his/her appointed agent to ensure appropriate compliance with planning requirements, before any recommended, non-urgent treatments can be undertaken. (See Section 9.0)*

2.1 – Time Limits

It should be understood that trees are not static objects, but growing, living organisms; and their condition, size and relationship to buildings, structures and other trees can change significantly and sometimes unpredictably over a period of time.
Therefore, this report has a maximum validity period of 12 months from the date of publication shown on the front cover. Any subsequent reports published within this period will supersede this report. The validity of the report is also subject to all management recommendations being undertaken to standards detailed in section 7.0 and within the advised time frames.
Re-inspection should be undertaken at regular intervals as set out in section 8.0 of this report. Updated reports following future re inspection surveys will supersede any previously published report.

2.2 – Severe Weather Limitations

Impacts of severe drought, storm, inundation, flooding, land slip or subsidence are not covered by this report.

3.0 – Background and General Observations

Instructions were received from our client to assess the physiological health and structural condition of two trees at the site, following concerns raised regarding their condition and safety.

The property at 7 Compayne Gardens features a terraced town house with private gardens at the front and to the rear of the dwelling.

The front garden features one *Crataegus monogyna* (Hawthorn) tree growing in close proximity to the front (northern) boundary wall, adjacent to the public footpath and carriageway of Compayne Gardens.

To the rear, the small courtyard garden features a semi mature *Fraxinus excelsior* (Common Ash) tree growing tight to the rear (southern) boundary wall. A large communal garden features further to the south outside of the boundaries of the property.

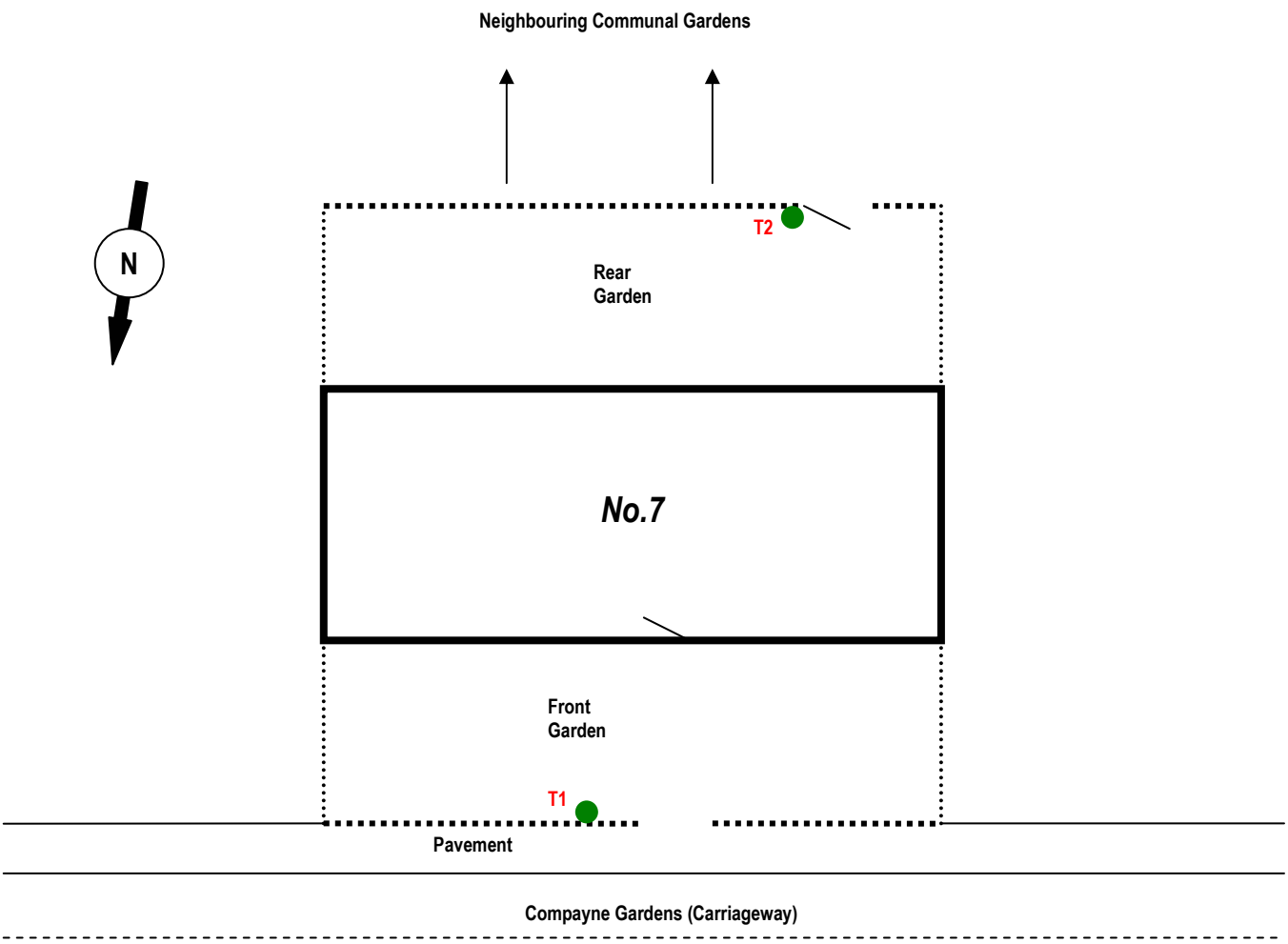
The property is located within the South Hampstead Conservation Area and the Hawthorn tree is subject to a Tree Preservation Order (TPO).
(TPO No: H3 – T41 as confirmed by Camden Council by phone on the 18/8/15)

The two individual trees listed above were inspected using the Visual Tree Assessment (VTA) method of inspection (See Section 1.1), to assess their physiological health and structural condition.

Inspection results and details of the assessed individual trees including management recommendations can be found in Table 5.0 below.

Further comments regarding tree management responsibilities and reasons for the recommended tree surgery works are provided in the Tree Survey Data Notes Section 5.1.

4.0 – Tree Position Sketch Plan (Not to Scale)



4.1 - Tree Position Sketch Plan Notes

The above sketch plan is for illustrative purposes and is not drawn to scale.

The plan is provided only to indicate the approximate position and numbering of the surveyed trees for identification at the site.

The Tree Position Sketch Plan also allows for simple cross referencing with information and management recommendations provided in the Individual Tree Data Table 5.0.

5.0 – Individual Tree Data Table

Tree No.	Species	Height (m)	Stem Diameter (mm)	Crown Spread (m)	Crown Height (m)	Age Class	Physiological Condition	Structural Condition	Comments	Recommendations	Priority
1	*Crataegus monogyna (Hawthorn)*	7	325	N – - E – - S – 3 W – 4	4	M	Fair	Poor	50% of the overall crown has been lost historically. Suspected failure of a significant scaffold limb on the northeast side, due to heavy wind loading in the past, where the union point may have been structurally weak or defective. A distinctive failure point is visible at the limb/stem union (Approx 2m from stem base on the north side). At the time of failure, the limb has torn downwards, splitting the main stem and resulting in the loss of a significant amount of the stem wood tissue. The exposed heartwood on the northeast side has over time succumbed to the onset of decay which is visibly evident from the stem base to the limb failure point. Minimal wound wood is visible. Sounding hammer testing suggests the decay channel is extensive radially through the remaining stem and around the point of failure. Probe testing confirmed this with little or no resistance felt up to 200mm laterally into the stem. Probe testing was undertaken in three places on the stem, at 500mm, 1m and 2m from the stem base. Central scaffold limbs have also died back but remain, with visible evidence of boring insect infestation. The remaining crown is featured entirely on the south and west sides of the tree, where foliage is being produced in good amounts from the remaining branches, indicating that the cambium layer is intact and functional on this side of the tree. The strength of the supportive wood in the stem is however, severely compromised by the onset of the internal heartwood decay, which will worsen and subsequently increase the risk of stem failure. Particularly as the entire crown weight is on the south west side of the tree, creating a lever arm in strong winds which will exert high tensional stress loading on the weakened areas where the decay is most prevalent on the opposing northeast side of the stem. **The tree is Subject to a Tree Preservation Order (TPO) and is located within the South Hampstead Conservation Area).**	*Fell tree and remove stump with a stump grinder.* *Target Assessment:* • *Front garden (No.7),* • *Public footpath and carriageway (Compayne Gardens).*	A

2	*Fraxinus excelsior (Common Ash)*	18	550	N – 6 E – 7 S – 7 W – 7	3	SM	Good	Fair	Some minor deadwood visible in the crown. The main stem exhibits an area of missing bark on the eastern side from approx. 300m above the stem base to 2m. The area of scarring was measured to be 1.5m in length, and on average 250mm across. Good wound wood is visible around the scarred area and is occluding around the wound. The cause of the wound is unknown, but its appearance (including the advanced wound wood visible) suggests the wound occurred when the tree was much younger. Sounding hammer testing of the exposed heartwood and around the wound suggests a solid and intact stem. No decayed wood is visible. Due to the lack of protection that bark provides, the exposed heartwood will be more susceptible to pathogen attack and decay. The crown spread of the tree is significant on all directions, with northern spreading branches coming into direct contact with the building, roof and guttering. **The tree is located within the South Hampstead Conservation Area.**	Crown reduction of up to 30%, removal of all hazardous deadwood.	A

Key to Table 5.0

1) Height describes the height of the tree from ground level in metres
2) Stem Diameter is the Diameter of the trunk in millimetres at approx 1.5m from ground level. For multi stemmed trees, a single stem diameter equivalent (SE) is calculated and indicated beneath the measurements of each separate stem. (Est.) indicates the stem diameter was estimated due to the tree being inaccessible to measure.
3) Crown Spread is the radius of branch spread from the centre of the tree in the direction of each cardinal point in metres
4) Crown Height is the distance between the lowest crown branches / foliage and the natural ground level in metres
5) Life Stage is represented as: Y= young (*in first third of life expectancy*), SM = Semi Mature (*in second third of life expectancy*), M= Mature (in *final one third of life expectancy*). Trees considered to be beyond their likely life expectancy are normally classed as OM = Over Mature or V = Veteran.
6) Physiological Condition indicates a grading for the biological health and vitality of the tree
7) Structural Condition indicates a grading for the mechanical integrity of the tree, its stem and the crown framework
8) Priority key:

- A = Immediate
- B = Within 3 Months
- C = Within 6 Months
- D = Within 12 Months
- E = As current garden management regime
- F = No Action Required (before annual re inspection)
- G = General Management Recommendation – (Client discretion)

5.1 – Tree Survey Data Notes

The following reasons are given to explain why the tree surgery recommendations have been made in Table 5.0 above:

1) To remove poor quality hazard trees which exhibit significant structural defects and are in close proximity to nearby “targets”.
2) To remove trees which have been deemed unsuitable for safe retention and pose a high risk of failure; which may in turn cause damage to property or injury to people.
3) To reduce oversized tree crowns to control branch spread and form with due consideration to the trees’ life stage, growth habit, urban surroundings and associated “targets”;
4) To reduce crown weight and sail factor of trees which exhibit minor structural defects in supporting stems and framework branches.
5) To prune dominant trees to allow more light into buildings and garden areas.

The recommendations in Table 5.0 above are made in the interests of arboricultural management and good practice as detailed above. Supporting photographs taken at the time of the survey are provided in Appendix A.

All parties should also be aware that tree owners have a legal obligation to manage trees which are growing on their property. For example, under the Occupier’s Liability Act (1957/84) both invited and uninvited visitors are owed a duty of care by the owner if:

- The occupier/owner is aware of the danger, or has reasonable grounds to believe it exists;
- The occupier/owner knows or has reasonable grounds to believe that the visitor / non-visitor is in the vicinity, or may come into the vicinity, of the danger concerned;
- The risk is one against which he may reasonably be expected to offer the non-visitor some protection.

In short, “*land owners / occupiers must ensure, as far as is reasonably practicable, that all reasonable steps have been taken to ensure that no reasonably foreseeable harm befalls anyone who one could reasonably expect to be injured, through their act or omission”*.

In the context of tree ownership therefore, if a tree is obviously dangerous for some reason, the owner must:

Ensure timely removal or reduction of the danger to an acceptable level.
If the owner does not possess sufficient technical knowledge to decide if a tree is in fact dangerous or not, they must employ someone with sufficient knowledge to advise them.

Further Statutory Law concerning trees and their management applies in other legislation, some of which are listed in Section 9.0 below.
These include subjects such as tree surgery work to trees which are protected under Tree Preservation Orders (TPO) or to trees situated within a Conservation Area and the protection of wildlife and habitat.

6.0 – Report Summary

The arboricultural survey was undertaken on the 12th August 2015, in line with the instructions received from our client.

Regular assessment and management of trees by timely pruning or removal of dysfunctional individuals will assist in minimising the risks associated with trees in the built up environment and help to safeguard their long term amenity value and contribution to their surroundings.

The tree surgery recommendations made for all trees in Table 5.0 are based on observations made during the Visual Tree Assessment (VTA) process and with consideration to factors associated with the trees' species, life stage, growth habits and tolerances.
Recommendations to remove trees deemed hazardous are made proactively in the interests of safety. Due consideration has been given to nearby targets and the associated risk posed by those trees which exhibit significant structural defects which cannot be remedied and have therefore been deemed unsuitable for safe retention.

This report is valid to support the required applications for removal of trees which are subject to a Tree Preservation Order (T1) and in support of Section 211 notices required to provide a "Notice of Intent" to the council to undertake tree surgery work to trees situated within a Conservation Area (T2). (See Section 9.0)

The continued management of trees at the property is the responsibility of the owner to ensure as much as possible that any retained trees are maintained at a reasonable size and form in relation to their surroundings, and the risks of tree related damage and injuries are reduced to an acceptable level. I.e. the removal of trees with obvious structural defects and the removal of hazardous deadwood from tree crowns.
Tree Sense Arboricultural Consultants can assist tree owners with their long term tree management strategies and legal responsibilities.

7.0 - Tree Work Standards

The recommendations made within this report have been done so in the interests of sound arboricultural management and to ensure tree surgery works are performed to a professional standard in accordance with *BS 3998:2010 Recommendations for tree work* (As updated).

All remedial tree surgery work which is suggested in this report must be undertaken to conform to standards and procedures set out in *BS 3998:2010 Recommendations for tree work.* (As updated).

- Tree Sense Arboricultural Consultants are happy to recommend a trusted tree surgery contractor if required, to ensure that all recommended tree surgery work is performed to a high standard.
- Tree Sense Arboricultural Consultants only recommend contractors who are approved by The Arboricultural Association to ensure that the highest standards of tree surgery work are met at all times.

8.0 – Re-inspection

It is advisable to have trees inspected at regular intervals. A period of 12 months between inspections is recommended.

Inspection of trees should be undertaken at regular intervals by a competent person. It is recommended that re inspection should occur annually from the published date of this report; with interim hazard checks following periods of likely stress (e.g. after severe weather, tree damage, site alterations etc).

Regular inspection is beneficial to ensure the trees are checked for their physiological health and structural condition, to ensure compliance with legal responsibilities as tree owners. Regular tree inspection is also recommended to ensure that trees are managed correctly in accordance with *BS 3998 : 2010 Recommendations for tree work.* (As updated).

9.0 – Legal and Planning Consents

- Appropriate legal and planning consent should be gained before undertaking any tree work; for example if the tree(s) are subject to a Tree Preservation Order (TPO), permission must first be obtained from the Local Authority. Permission is not required for emergency tree work on dead, dying or dangerous TPO trees; however the Local Authority should be advised prior to works being undertaken.
- Six weeks notice is required to be given to the local authority via a Section 211 Notice for any proposed tree surgery work on trees situated within a designated Conservation Area.
- Tree owners have a responsibility as a common law duty of care, as well as responsibilities under statutory law, to ensure that trees growing within the boundaries of their property are maintained to reduce to an acceptable level the risk of potential harm befalling other people or property.
- In the course of undertaking any tree work, the client is advised to ensure that operational assessments and procedures are in place, and to take due consideration of the legal requirements.

- Key legislation includes (but is not restricted to):

    - The Wildlife and Countryside Act (1981)
    - Occupiers Liability Act (1957/84)
    - Highways Act (1980/86)
    - Town and Country Planning Act (1990/Regulations 1999/Amendment 2008/09)
    - The Countryside Rights of Way Act (2000)
    - The Conservation (Natural Habitats etc.) Regulations (1994)
    - The Badgers Act (1992)

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Appendix A – Supporting Photographs

The following photographs were taken at the time of the tree assessment survey and are provided to support the findings and recommendations made in the report:

T1 – Crataegus monogyna (Hawthorn) – TPO No: H3 – T41

T1 is located close to the front boundary of the property and in close proximity of the adjacent public footpath and carriageway (Compayne Gardens).

The tree is subject to a Tree Preservation Order (TPO) No: H3 – T41 and is situated within the South Hampstead Conservation Area.

50% of the crown structure has been lost in the past due to the failure of scaffold limbs on the northeast side of the tree. The remaining crown branches feature only on the south and west sides of the tree.

Appendix A – Supporting Photographs – Cont'd

T1 – Crataegus monogyna (Hawthorn) – TPO No: H3 – T41

The north side scaffold limb has been torn away from the stem at the point of union.

The failure of the limb has resulted in the loss of a significant amount of the wood tissue in the stem, which was torn away when the limb failed. It is suspected that the failure of the limb occurred due to excessive wind loading and a weak or defective limb/stem union.

The remaining stem exhibits significant internal heartwood decay.
Sounding hammer testing suggested extensive decay channels in the stem both vertically and radially.

Probe testing in three separate areas felt little or no resistance to the probe to approx. 200mm laterally through the remaining stem.

Appendix A – Supporting Photographs – Cont'd

T1 – Crataegus monogyna (Hawthorn) – TPO No: H3 – T41

Two central scaffold limbs have also died off but still remain.

Evidence of boring insect infestation is visible on the dead limbs.

A closer view of the stem union point, where the scaffold limb failed causing the extensive damage and the original loss of wood tissue in the main stem.

T1 – Crataegus monogyna (Hawthorn) – TPO No: H3 – T41

The following photos show close up the extent of the internal heartwood decay and defects present in the stem of the tree:

Appendix A – Supporting Photographs – Cont'd

T2 – Fraxinus excelsior (Common Ash)

Lower Section

Top Section

T2 is located close to the southern boundary wall in the rear garden. Communal gardens feature further south beyond the boundary line.

The tree is not subject to a Tree Preservation Order (TPO), but is situated within the South Hampstead Conservation Area.

T2 – Fraxinus excelsior (Common Ash)

Historically, the tree has suffered damage on the eastern side of the main stem, resulting in the loss of a significant amount of the protective bark covering.

The appearance suggests it is an old wound due to the amount of wound wood visible, as the tree attempts to occlude over the exposed heartwood.

Sounding hammer testing suggested that the heartwood is solid and intact.

The crown spread of the tree is extensive and the northern spreading branches are in direct contact with the building, roof and guttering.