



# ARTEMIS TREE SERVICES

## Site

Mary Ward House,  
London, WC1H 9SN

## Prepared for

Mr Crochan Murphy

## Prepared by

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21<sup>st</sup> August 2024



## Arboricultural Report AR-31644

### Artemis Tree Services Ltd

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## Table of Contents

<b>1. Brief</b>	<b>1</b>
<b>2. Report limitations</b>	<b>1</b>
<b>3. Introduction</b>	<b>2</b>
<b>4. Data for Subsidence Risk</b>	<b>2</b>
<b>5. Statutory tree protection</b>	<b>2</b>
<b>6. Findings</b>	<b>2</b>
<b>7. Analysis</b>	<b>3</b>
<b>8. Conclusions</b>	<b>4</b>
Appendix 1. Tree schedule	
Appendix 2. Tree location plan	
Appendix 3. Document record	

## **1. Brief**

- 1.1 Artemis Tree Services Ltd has been instructed by Mr Crochan Murphy to inspect and report on the condition of trees at or adjacent to Mary Ward House and advise on the risks of subsidence damage to adjacent structures.

The report includes:

Assessment of the risk of subsidence in respect of all trees and shrubs within the potential distance of influencing building structures at the above site, regardless of ownership of the trees and shrubs.

- i) Assessment of the risk of subsidence for adjacent properties in respect of trees and shrubs growing within the above site.
- ii) Assessment of the risk of direct damage (by contact) to built structures excluding drains.
- iii) Assessment of the health, condition, and safety of the trees/shrubs within the site.
- iv) Recommendations on the immediate and future management of the trees/shrubs, based on my assessment and these guidelines, and on my personal experience as an arboriculturist.

## **2. Report limitations**

- 2.1 Trees and shrubs are living organisms whose health and condition can change rapidly. The assessment of subsidence risk and direct damage remains valid for a period of five years from the date of this report. The health, condition and safety of trees should be checked on a more regular basis, preferably at least once a year, and those conclusions and recommendations are only valid for a period of one year. These periods of validity may be reduced in the case of any change in conditions in proximity to the trees/shrubs or built structures.
- 2.2 By their very nature, trees can never be entirely free of risk. The laws and forces of nature dictate a failure rate, even among intact trees with no apparent defects. The recommendations in this report with regard to the safety of the trees, cannot guarantee the elimination of all risk.
- 2.3 The report is of a preliminary nature. Climbing inspections have not been carried out. If the preliminary inspection identifies a need for further investigation of specific trees, this will be detailed within our recommendations.
- 2.4 The trees were viewed from public vantage points and within the site boundaries only. I had no access to third-party property.
- 2.5 I did not inspect any part of the drainage or service systems on site as I am not qualified to do so.
- 2.6 I did not examine the soil or remove samples for analysis as this report is of a preliminary nature. If samples are required, then this will be highlighted in the recommendations.

### **3. Introduction**

#### **3.1 Qualifications**

- 3.1.1 I hold an FdSc in Arboriculture from Northampton University and Level 5 HE Diploma in Arboriculture from Moulton College. I have also passed the Lantra Professional Tree Inspection course (PTI).

#### **3.2 Site Details**

- 3.2.1 I visited Mary Ward House on the 21<sup>st</sup> of August 2024.
- 3.2.2 I have been informed by the client that the property was built in around 1898.
- 3.2.3 The client has also confirmed to their knowledge there is no previous or existing subsidence damage to the property, though there is some cracking to a boundary wall to the south east of the site.
- 3.2.4 A tree location plan with the approximate position of trees included in the tree survey can be found in Appendix 2 of this report.

### **4. Data for Subsidence Risk**

- 4.1 For the purposes of this report, it is necessary to make assumptions about or have information on:
- i) Soil volume change potential
  - ii) House foundation depths
- 4.2 I note from the geological survey map (British Geological Survey GeoIndex Onshore map) that the underlying strata in the locality of the site may well be London clay. Therefore, I assume the modified plasticity index (MPI) of the soil to be 65% (NHBC High shrinkage category) The definitive soil type can only be identified by analysis in a laboratory.
- 4.3 The foundation depth of Mary Ward House is assumed to be 0.6m in accordance with Information supplied by Dr Giles Biddle for the Arboricultural Associations Subsidence Risk Assessment programme (now withdrawn), based on the age of the property, which is believed to have been built around 1935. Definitive depths may be obtained from the builders or by trial hole.

### **5. Statutory tree protection**

- 5.1 Artemis Tree Services Ltd have not been instructed to establish the presence of Tree Preservation Orders (TPO) at this stage. If Artemis Tree Services Ltd is employed to undertake recommended works; all necessary checks will be made on the clients' behalf. The property is within the Bloomsbury Conservation area.

### **6. Findings**

- 6.1 Full details of significant vegetation are recorded within the tree schedule in appendix 1.

## 7. Analysis

- 7.1 The Plane trees (T1 and T2) are classified as moderate water user/demander species (NHBC 4.2) and are within influencing distance of the building at Mary Ward House. There is currently a low to moderate risk of subsidence, however, given that these trees were present during the recent times of the last very dry periods 2016, 2018 and 2022 (at or close to their current size) and no subsidence damage has been reported to the property, the likelihood of subsidence damage occurring in the future is low. Maintaining these trees at or less than current height would be prudent to prevent risk of subsidence increasing.
- 7.2 The Tree of heaven Coppices (G3) are within influencing distance of Mary Ward House but have not reached mature height (20m). The trees have regenerated from stumps and are still of a relatively small size. It is recommended that management of the tree with cyclical coppicing, to prevent water uptake and risk of subsidence damage increasing.
- 7.3 The Rowan trees (T4, G9 and G12) are classified as low water demand species and are just within potential influencing distance of Mary Ward House and Leonard Court adjacent. However, given small size of the trees and water demand, the likelihood of subsidence damage occurring in the future is low.
- 7.4 The Tree of heaven (T5) and Yew Tree (T6) are classified as a moderate water user/demander species and is within influencing distance of Mary Ward House and Leonard Court adjacent. Given that these trees were present during the recent times of the last very dry periods 2016, 2018 and 2022 (at or close to their current size) and no subsidence damage has been reported to the property, the likelihood of subsidence damage occurring in the future is low. T5 has been previously crown reduced with approx. 3-4m regrowth. Maintaining T5 at its previously pollarded size and T6 at or less than current height would be prudent to prevent risk of subsidence increasing.
- 7.5 The Japanese Maple tree (T7) is classified as a moderate water demand species and is within influencing distance of Mary Ward House. However, the tree currently poses a low risk of subsidence due to its smaller size. Maintenance at around 2.5m height should be undertaken to prevent risk of subsidence increasing.
- 7.6 The Birch trees G8, G10 and T11 are classified as a moderate water user/demander species and is within influencing distance of Mary Ward House. Given that these trees were present during the recent times of the last very dry periods 2016, 2018 and 2022 (at or close to their current size) and no subsidence damage has been reported to the property, the likelihood of subsidence damage occurring in the future is low.
- 7.7 It was noted that there is movement and vertical cracking to the adjacent boundary wall to Birch trees G8 and Rowan trees G9. The trees are a more recent addition to the property and there does not appear to be any recent ground works undertaken nearby. Given the proximity of the stems (within 0.5m of the wall) and the shallow rooted nature of the species, it is highly likely that the annual incremental root growth is a contributing factor to the movement of the wall.



## 8. Conclusions

- 8.1 There is Moderate risk of subsidence damage to the building at Mary Ward House from T1, T2, T5 and T6.
- 8.2 There is currently a low risk of subsidence damage to the building at Mary Ward House from G3, T4, T7, G8, G9, T10, G11 and G12.
- 8.3 Recommended management of trees and shrubs (Appendix 1) should be undertaken to prevent the risk of subsidence damage increasing.
- 8.4 There is insignificant risk of direct damage to drains assuming the structures remain sound however, roots are very good at exploiting faults where moisture can collect.
- 8.5 Any removal of vegetation close to any property is unlikely to have any 'heave' effects (upward movement of buildings due to a swelling of a clay soil) because the building is older than the vegetation (With the exception of T1 and T2 which appear to be of a similar age to the building).
- 8.6 Damage to the front boundary wall has been noted and the trees adjacent (G8 & G9) are likely having a contributing factor. Removal of these trees to help reduce any further damage and consulting with a structural engineer to ensure that there are no other contributing factors is highly recommended.

## Appendix 1

Tree Ref.	Species	Height (m)	Stem diameter (cm)	Crown diameter spread (m)	Age class	Vigour and future growth potential	Vitality and condition Observations	Distance from built structure (m)	Zone of Influence at mature height (m)	Subsidence risk factor	Recommendations
T1	London Plane ( <i>Platanus x hispanica</i> )	26	110	16	M	Moderate Low	Historically crown lifted with top heavy appearance. Established as a framework pollard with approx. 2-2.5m regrowth. Bark damage to buttress roots on E side of stem likely from vehicles though no visible decay of sapwood noted. Branch tips close to contact with buildings to E and W.	7.8	19.5	Moderate	Repollard to previous points to maintain compact form and clearance from buildings. Climber to inspect crown for signs of Massaria infection.
T2	London Plane ( <i>Platanus x hispanica</i> )	25	125	22	M	Moderate Low	Previously crown reduced with approx. 2.5-3m regrowth. 2x failed branches hung up in crown to E over seating areas. Splitting and discolouration of bark on underside of limb to NE at around 14m with foliage on limb appearing a little sparse at the tip, possible sign of Massaria infection though not possible to confirm from ground level. Insect frass and area of peeling bark to NE at around 0.4m though no notable audible decay of sapwood when tapped with mallet. Stem is flared	5.7	19.5	Moderate	Reduce to previous points to maintain best form and clearance from buildings. Remove broken hung up branches. Climber to inspect crown for signs of Massaria infection. Remove basal epicormic growth.

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Tree Ref.	Species	Height (m)	Stem diameter (cm)	Crown diameter spread (m)	Age class	Vigour and future growth potential	Vitality and condition Observations	Distance from built structure (m)	Zone of Influence at mature height (m)	Subsidence risk factor	Recommendations
							from base up to around 3m though this is not unusual for the age and species of tree. Basal epicormic growth to E with powdery mildew, likely due to recent dry weather.				
G3	Tree of Heaven ( <i>Ailanthus altissima</i> )	4	<10	2	NP	High High	4x Young trees growing near to north boundary wall. Have been previously coppiced at ground level. Multiple stems growing from base of historically felled stem with a number of young Ganoderma sp fungal fruiting bodies noted.	10.8	15	Low	Continue 2 yearly coppicing as part of regular maintenance
T4	Rowan ( <i>Sorbus aucuparia</i> )	5	16	4	Y	Moderate Low	Tree growing close to N boundary wall. Slight lean to N likely due to competition from nearby mature trees. Minor deadwood in crown, typical of species. Historic wound at base of stem to NE with decay probed to around 16cm diagonally down. Possible hollowing of stem audible when tapped with mallet. Tree leans towards parking bays to N.	11.95	8.25	Low	Undertake decay detection of stem at base of stem and 0.5m to better ascertain amount of sound wood remaining (Resistograph)



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T5	Tree of Heaven ( <i>Ailanthus altissima</i> )	17	65	12	M	Moderate Moderate	Previously established as a framework pollard with 3-4m regrowth. Lower stem and lower limbs partially obscured by Ivy cover, starting to encroach into crown. Slight crown bias and stem lean to E likely due to competition with T2.	7.8	15	Moderate	Sever and clear a 1m section of Ivy from the circumference of the stem. Reduce crown back to previous points to maintain clearance from adjacent buildings.
T6	Yew ( <i>Taxus baccata</i> )	6	13	5	Y	Moderate High	Twin stemmed from around 0.3m with tight union forming between. Minor deadwood in crown, typical of species.	4.8	9	Moderate	Maintain at present dimensions or smaller.
T7	Japanese Maple ( <i>Acer palmatum</i> )	3	<10	4	Y	Moderate Moderate	Twin leaders from 0.2m. Previously crown lifted to maintain clearance over footpath.	1.8	6	Low	Maintain at or around 2.5m height.
G8	Birch ( <i>Betula pendula</i> , <i>Betula utilis</i> )	6 to 8	15 to 17	6	EM	Moderate Moderate	3x trees growing close to S boundary wall and over public footpath, planted around 1m apart. Minor deadwood in crown, typical of species. Vertical cracks noted in boundary wall to W, likely due to proximity of rooting area.	2	6.6	Low	Remove the trees as close to ground as possible to eliminate as causal factor in damage. Do not treat the stumps with herbicide due to the risk of translocation to G10. Consult with a structural engineer to ensure that there are no other potential causal

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Tree Ref.	Species	Height (m)	Stem diameter (cm)	Crown diameter spread (m)	Age class	Vigour and future growth potential	Vitality and condition Observations	Distance from built structure (m)	Zone of Influence at mature height (m)	Subsidence risk factor	Recommendations
											factors in the cracks to the wall.
G9	Rowan ( <i>Sorbus aucuparia</i> )	6 to 8	11 to 14	4	Y/E M	Moderate Low	2x trees adjacent to G8. Minor deadwood in crown, typical of species. Eastern tree is multi stemmed from base with tight unions forming at base. Cracks noted to wall adjacent.	2.7	8.25	Low	Remove as close to ground as possible.
G10	Birch ( <i>Betula utilis</i> )	6	12 to 16	4	Y/E M	Moderate Moderate	2x trees close to S boundary wall either side of more mature Birch (T11). Slight leans and crown suppression due to competition. Minor deadwood in crown, typical of species.	1.6	6.6	Low	None.
T11	Birch ( <i>Betula pendula</i> )	12	27	8	M	Moderate Low	Larger tree with group of younger planted specimens. Minor deadwood in crown, typical of species. Low growth to S becoming close to pedestrian crossing lights.	2.8	6.6	Low	Prune to give 1m clearance from pedestrian crossing lights.
G12	Rowan ( <i>Sorbus aucuparia</i> )	4	<10	2	Y	Moderate Moderate	2x Young trees, previously crown lifted. Crowns suppressed by adjacent mature trees.	1.6	8.25	Low	None.

## Appendix 1

### Survey Key

**Tree ref.**

Tree number reference for tree schedule and tree location plan.

**Species**

Common name and scientific identification of tree species

**Ht (m)**

Tree height measured in meters.

**Stem dia. (cm)**

Estimated stem diameter in cm at 1.5m above ground level.

**Crown dia. spread (m)**

Estimated crown diameter spread in metres.

**Age class**

(NP) Newly planted – a tree within 3 years after planting

(Y) Young – a tree within its first one third of life expectancy

(EM) Early Mature – a tree within its second third of life expectancy

(M) Mature – a tree in its final one third of life expectancy

(OM) Over Mature – a tree having reached its maximum life span and is declining in health and size due to old age

(V) Veteran – a tree in the second or mature stage of its life and has important wildlife and habitat features including; hollowing or associated decay fungi, holes, wounds and large dead branches.

(A) Ancient – a tree in the ancient or third and final stage of their life that is of interest biologically, aesthetically or culturally because of its age, size and condition

**Vitality**

GOOD – a tree in a healthy condition with no significant problems

FAIR – a tree generally in good health with some problems that can be remediated

POOR – a tree in poor health with significant problems that can't be remediated

DEAD – a tree without sufficient live material to sustain life

**Appendix 2**



- Crown Spread
- Small diameter stemmed trees or shrubs
- Approximate stem location
- Mature height Zone of influence
- T1** Tree Identification Number

The original of this drawing was produced in colour - a monochrome copy should not be relied upon

Artemis Tree Services Ltd  
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CLIENT: Mr Crochan Murphy

CONSULTANT: O.Coleman

SITE: Mary Ward House  
London, WC1H 9SN

TITLE: Zones of influence at mature height

SCALE: AT 1:200	DATE: 22/08/2024	DRAWN: OC	CHECKED:
PROJECT NO: 31644	DRAWING NO: ATS-ZOI-31644	REVISION: 01	



## Appendix 2



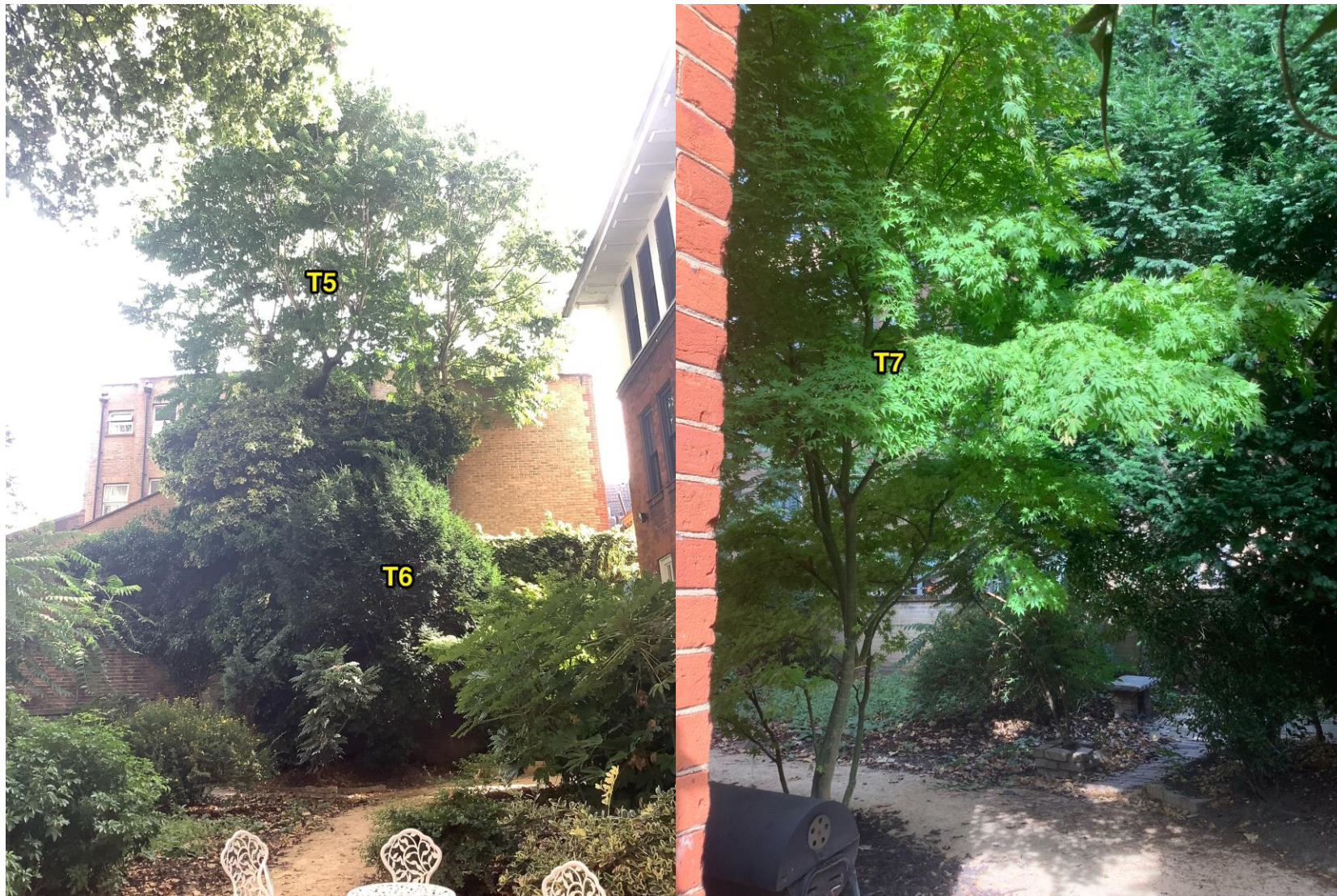


## Appendix 2





## Appendix 2





## Appendix 2





## Appendix 2



Appendix 3

Document	Editor	Publication Date
AR-31644	Oliver Coleman	30/08/2024