

# Addendum Arboricultural Report

## Subsidence Damage Investigation at:

164 Hampstead Way  
London  
NW11 7XD



CLIENT:	Claims Consortium Group
CLIENT REF:	244176
MWA REF:	SUB200818-7471Rev01
MWA CONSULTANT:	Andy Clark
REPORT DATE:	29/01/2024

## SUMMARY

Statutory Controls		Mitigation (Current claim tree works)	
TPO current claim	No	Policy Holder	Yes
TPO future risk	No	Domestic 3 <sup>rd</sup> Party	Yes
Cons. Area	Yes	Local Authority	No
Trusts schemes	Yes	Other	No
Local Authority: -	London Borough of Barnet		

## Introduction

**This is an addendum to our initial report [dated 10/09/2020] to include site investigations carried out by Nichols Colton on 03/09/2020 and Fastrack on 06/01/2023, and details of crack and level monitoring results.**

Acting on instructions from Claims Consortium Group, the insured property was visited on 27/08/2020 to assess the potential role of vegetation in respect of subsidence damage.

We are instructed to provide opinion on whether moisture abstraction by vegetation is a causal factor in the damage to the property and give recommendations on what vegetation management, if any, may be carried out with a view to restoring stability to the property. The scope of our assessment includes opinion relating to mitigation of future risk. Vegetation not recorded is considered not to be significant to the current damage or pose a significant risk in the foreseeable future.

Recommendations are made with reference to the technical reports and information currently available and may be subject to review upon receipt of additional site investigation data, monitoring, engineering opinion or other information.

This report does not include a detailed assessment of tree condition or safety. Where indications of poor condition or health in accessible trees are observed, this will be indicated within the report. Assessment of the condition and safety of third-party trees is excluded and third-party owners are advised to seek their own advice on tree health and stability of trees under their control.

## Property Description

The property comprises a 2 storey end-terrace house of traditional construction, built during the 1910's and possibly since extended to the rear.

External areas comprise gardens to the front and rear.

The site is generally level with no adverse topographical features.

## Damage Description & History

Damage is noted throughout the property to varying degrees, and was first observed during July 2020.

At the time of the engineer's inspection (04/08/2020) the structural significance of the damage was found to fall within Category 2-3 (slight - moderate) of Table 1 of BRE Digest 251. For a more detailed synopsis of the damage please refer to the surveyor's technical report.

We have not been made aware of any previous claims.

## Site Investigations

Site investigations were initially carried out by Nichols Colton on 03/09/2020 when two trial pits were hand excavated to reveal the foundations, with a borehole sunk through the base of the trial pit to determine subsoil conditions.

Further site investigations were carried out by FASTRACK on 06/01/2023, when an additional two trial pits and boreholes were excavated. A remote borehole was also excavated, however this is not considered relevant.

### Foundations:

Ref	Foundation type	Depth at Underside (mm)
TP/BH1A	Concrete	750
TP/BH2A	Concrete	1100
TP/BH1B	Concrete	1000
TP/BH2B	Concrete	1000

### Soils:

Ref	Description	Plasticity Index (%)	Volume change potential (NHBC)
TP/BH1A	MADEGROUND: stiff silty sandy clay, becoming firm/stiff brown silty CLAY with orange pockets and fine/course gravel	49 – 62	High
TP/BH2A	MADEGROUND: stiff silty sandy clay with brick fragments, becoming stiff/hard brown silty CLAY with gravel pockets	54 – 55	High
TP/BH1B	Mid brown CLAY containing grey mottle and sand	40 – 54	High
TP/BH2B	Mid brown CLAY containing grey mottle & sand	43 – 44	High

### Roots:

Ref	Roots Observed to depth of (mm)	Identification	Starch content
TP/BH1A	2500	Oleaceae spp. and a SHRUB species Platanus spp.	Absent Present
TP/BH2A	2000	Unknown – no samples retrieved	N/A
TP/BH1B	1000	probably Philadelphus spp.	Present
TP/BH2B	2000	probably Philadelphus spp. and Aesculus spp.	Present

*Oleaceae spp. includes Lilac, Privet, Forsythia, Olive, Jasmine, Osmanthus, Phillyrea and Forestiera.*

*Platanus spp. are Planes.*

*Philadelphus spp. include mock orange.*

*Aesculus spp. are horse chestnuts.*

**Drains:** The drains have previously been surveyed, and recorded defects have been repaired.

**Monitoring:** Crack and level monitoring are in progress.

It should be noted that level monitoring carried out since June 2023 has been recorded against a deep datum. Readings prior to this date were taken against a datum which was deemed to be unstable.

## Discussion

Opinion and recommendations are made on the understanding that Claims Consortium Group are satisfied that the current building movement and the associated damage is the result of clay shrinkage subsidence and that other possible causal factors have been discounted.

Level monitoring results between June 2023 and January 2024 confirms a seasonal pattern of building movement, with downward movement recorded over the Summer of 2023 followed by uplift over the subsequent Autumn and Winter months as the soils rehydrate and swell.

Site investigations and soil test results have confirmed a plastic clay subsoil susceptible to undergoing volumetric change in relation to changes in soil moisture. A comparison between moisture content and the plastic and liquid limits indicates moisture depletion at the time of sampling at depths beyond normal ambient soil drying processes, such as evaporation, which is indicative of the soil drying effects of vegetation.

Roots were observed below foundation depth in the excavated trial pits and boreholes, and recovered samples have been positively identified (using anatomical analysis) as Oleaceae spp., Platanus spp., probably Philadelphus spp. and Aesculus spp.

The Oleaceae spp. roots and the probably Philadelphus spp. roots will be from the various related shrubs around the property gardens. The Platanus spp. roots will be from the T3 London Plane. The Aesculus spp. roots will be from the Horse Chestnut stem within HG1 hedgerow.

Irrespective of the identification of recovered root samples, our survey has identified vegetation within influencing distance of the building with a current potential to influence soil volumes below foundation level; the most significant of which in relation to the current damage are the nearby hedge and shrub groups, identified as HG1, HG2, SG1 and TG1.

The more distant but larger T1 Pear and T2 Plum may also have a degree of involvement, however this cannot be determined while the more proximal vegetation remains an influence on the soils below the building.

The Local Authority T3 London Plane will also be involved, however while the greatest range of building movement is focussed at the rear it is not possible to determine the efficacy of the current four-year pruning regime on building stability.

Works were carried out in April 2023 to reduce the height of HG1 hedgerow to 2.0m, however the ongoing movement recorded over the following months demonstrates that reduction has not restored stability to the building and so further works are required.

Based on the technical reports currently available, engineering opinion and our own site assessment we conclude that damage consistent with shrinkage of the clay subsoil related to moisture abstraction by vegetation.

If an arboricultural solution is to be implemented to mitigate the influence of the trees/shrubs currently considered to be responsible for the damage, we have set out tree works recommend as Table 1 below. Other vegetation recorded presents a potential future risk to building stability and management is therefore recommended. Recommended tree works may however be subject to change upon receipt of additional information.

Consideration has been given to pruning alone as a means of mitigating the vegetative influence, however in this case, this is not considered to offer a viable long-term solution due to the proximity of the responsible vegetation.

Replacement planting may be considered subject to species choice and planting location.

**Table 1 Current Claim - Tree Details & Recommendations**

Tree No.	Species	Ht (m)	Dia (m m)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
TG1	Mixed spp. group of mostly Juniper, Elaeagnus, Philadelphus, Yew, Privet and Bay	5.5	80 Ms *	9.0	3.3	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - sides appears regularly trimmed.					
Recommendation		Remove (fell) all to near ground level and treat stumps to inhibit regrowth.					
SG1	Mixed species group of mostly Yew, Ivy, Rose, Lavender and Privet	2.5	20 Ms *	1.5	0.1	Younger than Property	Policy Holder
Management history		Removed July 2022.					
Recommendation		Remove (fell) any regrowth to near ground level and treat stumps to inhibit regrowth.					
HG1	Mixed species hedgerow group of mostly Privet, Pyracantha, Horse Chestnut, Holly, Laburnum, Bay, Beech and Rowan	5.5 [original height]	60 Ms *	3.5	1.5	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - appears regularly trimmed. Reduced to 2.0m high in April 2023.					
Recommendation		Remove (fell) all within 5.5m of the building to near ground level and remove any regrowth as it emerges [herbicide translocation risk].					
HG2	Mixed species hedgerow group of mostly Yew and Holly	2.5	50 Ms *	1.0	0.3 *	Younger than Property	Third Party 162 Hampstead Way NW11 7XD
Management history		Subject to past management/pruning - appears regularly trimmed.					
Recommendation		Remove (fell) all within 3.5m of the building to near ground level and remove any regrowth as it emerges [herbicide translocation risk].					

Ms: multi-stemmed \* Estimated value

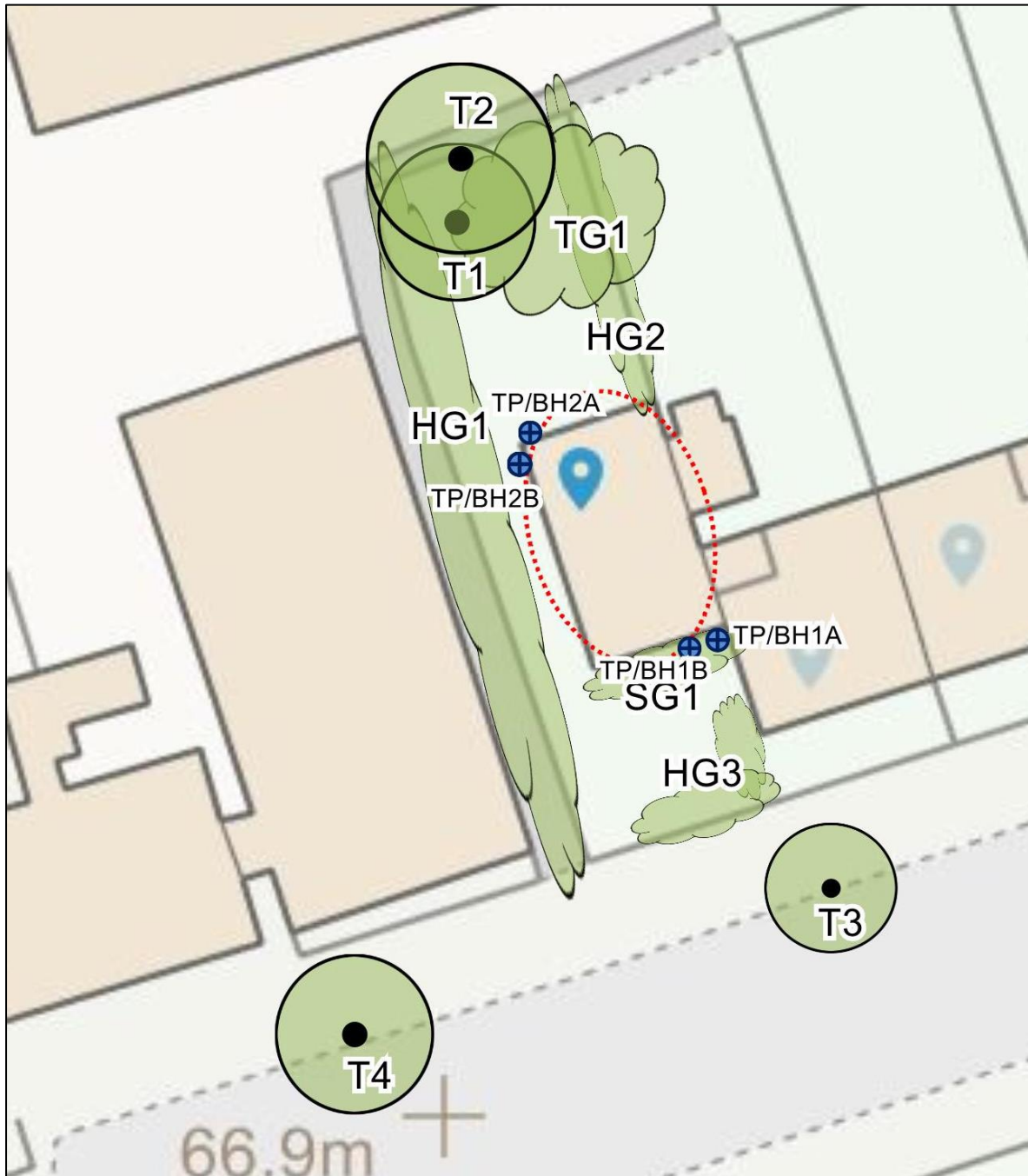
**Table 2 Future Risk - Tree Details & Recommendations**

Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
T1	Pear	5.5	210	5.0	10.2	Younger than Property	Policy Holder
Management history		No significant past management noted.					
Recommendation		No works required at present (subject to review if movement persists).					
T2	Plum	11.0	320 *	7.5	11.1	Younger than Property	Policy Holder
Management history		No significant past management noted.					
Recommendation		No works required at present (subject to review if movement persists).					
T3	Plane (London)	12.5	320	6.0	10.4	Younger than Property	Local Authority
Management history		Subject to past management/pruning - previously heavily crown reduced/pollarded (2018 and 2022)].					
Recommendation		No works required at present (subject to review if movement persists).					
T4	Plane (London)	13.5	650	6.0	18.0	Younger than Property	Local Authority
Management history		Subject to past management/pruning - previously heavily crown reduced/pollarded. (2018 and 2022)].					
Recommendation		No works required at present (subject to review if movement persists).					
HG3	Mixed species hedgerow group of mostly Privet, Beech, Holly, Yew and Forsythia	3.0	30 Ms *	2.5	3.8	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - appears regularly pruned.					
Recommendation		Maintain broadly at no more than current dimensions by periodic pruning.					

Ms: multi-stemmed \* Estimated value



Site Plan

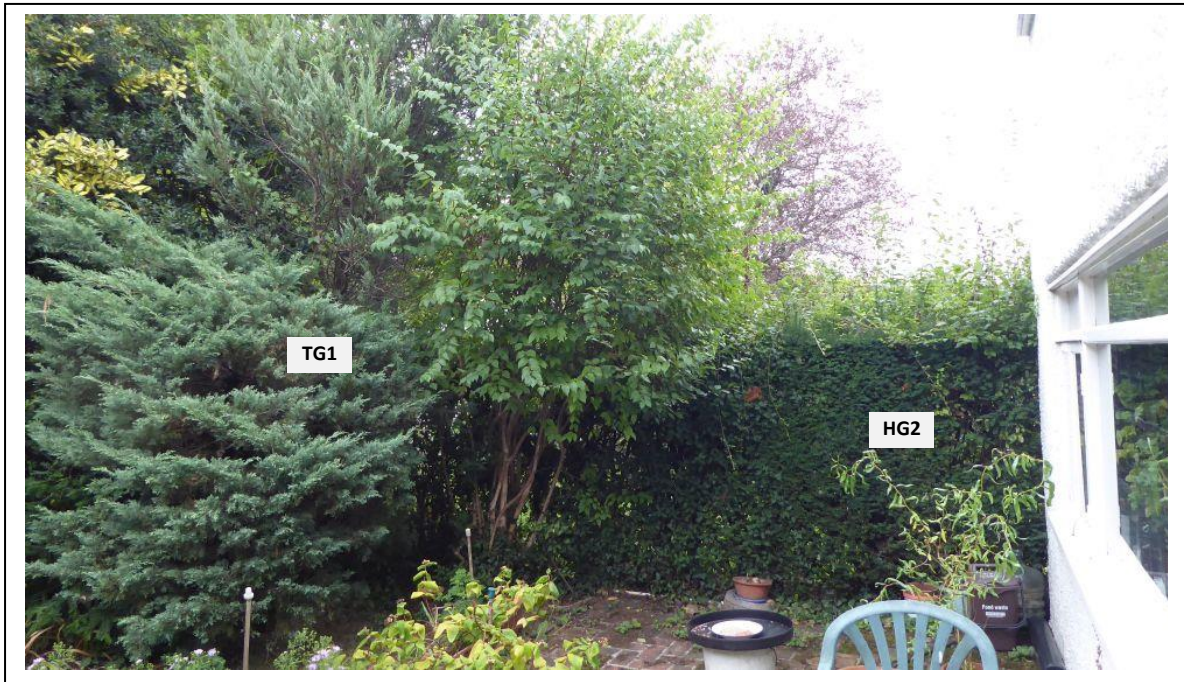


Plan not to scale – indicative only



Approximate areas of damage

Images



View of TG1 group to left of frame and HG2 hedgerow beyond



View from property rear of HG1 hedgerow group



View from property frontage of HG1 group to left of frame and SG1 group to foreground



Overview of T4 and T5 London Planes with HG1 group visible to centre frame