

Arboricultural Appraisal Report

Subsidence Damage Investigation at:

27 High Street
Barford
Warwick
CV35 8BU



CLIENT: Gateley Smithers Purslow
 CLIENT REF: 232777
 MWA REF: SUB240124-14973
 MWA CONSULTANT: Andy Clark
 REPORT DATE: 11/03/2024

SUMMARY

Statutory Controls		Mitigation (Current claim tree works)	
TPO current claim	No	Policy Holder	Yes
TPO future risk	Yes - TG5	Domestic 3 rd Party	Yes
Cons. Area	Yes	Local Authority	No
Trusts schemes	No	Other	No
Local Authority: -	Warwick District Council		

Introduction

Acting on instructions from Gateley Smithers Purslow, the insured property was visited on 01/03/2024 to assess the potential role of vegetation in relation to 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.

This is an initial appraisal report and 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 detached house of traditional construction, extended with a single-storey addition to the right-flank and rear.

External areas comprise gardens to the front and rear.

The property occupies a site that slopes gently uphill from the front to meet the property and then down towards the rear.

Damage Description & History

Damage relates to the right-hand side extension, where internal and external cracking indicates downward movement. Damage is reported to have first been observed during October 2023.

At the time of the engineer's inspection (30/10/2023) the structural significance of the damage was found to fall within Category 2 (Slight) of Table 1 of BRE Digest 251. For a more detailed synopsis of the damage please refer to the building surveyor's/engineer's technical report.

We have not been made aware of any previous claims.

Site Investigations

Site investigations were carried out by SmartDrain UK on 22/12/2023, when 2 trial pits were hand excavated to reveal the foundations, with a borehole sunk through the base of the trial pit to determine subsoil conditions. A drains survey was also undertaken.

Foundations:

Ref	Foundation type	Depth at Underside (mm)
TP/BH1	Concrete	700
TP/BH2	Concrete	700

Soils:

Ref	Description	Plasticity Index (%)	Volume change potential (NHBC)
TP/BH1	Firm, Very Dry, Brown, Slightly Gravelly, Sandy CLAY	30	Medium
TP/BH2	Firm, Very Dry, Brown, Slightly Gravelly, Sandy CLAY	26	Medium

Roots:

Ref	Roots Observed to depth of (mm)	Identification	Starch content
TP/BH1	No Roots Observed	-	-
TP/BH2	1200	<i>Cupressaceae</i> possibly either <i>Pomoideae</i> or <i>Prunus</i>	Unknown

Cupressaceae includes *Cypresses*, *Western Red Cedar* and *Junipers*.

Pomoideae includes *Apple*, *Pear*, *Hawthorn*, *Rowan*, *Whitebeam*, *Service tree* and *Medlar*, and some shrubs including *Pyracantha*, *Chaenomeles*, *Quince*, *Amelanchier* and *Cotoneaster*.

Prunus includes *Cherries*, *Plums* and *Damsons*, *Almonds*, *Peaches* and *Apricots* and *Blackthorn/Sloe*, as well as the shrubby *Cherry-laurel* and *Portuguese-laurel*.

Drains: The drains have been surveyed and no significant defects identified.

Monitoring: No information available at the time of writing.

Discussion

Opinion and recommendations in this report are made on the understanding that Gateley Smithers Purslow have identified clay shrinkage subsidence as a cause of building movement and damage.

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 TP/BH2 and recovered samples have been positively identified (using anatomical analysis) as *Cupressaceae* and possibly either *Pomoideae* or *Prunus*.

The origin of the Cypress roots will be either TG2 Cypress group or T4 Cypress both of which are within influencing distance of the building. The source of the tentatively identified either *Pomoideae* or *Prunus* roots is less clear. T1 Purple Leaved Plum is the most likely source, or other related vegetation not visible from the subject property garden [there is possibly a Cotoneaster beyond TG2].

Irrespective of the identification of recovered root samples, our survey has identified vegetation within influencing distance of the building/area of movement with a current potential to affect soil volumes below foundation level the most significant of which in relation to the current damage are recorded in Table 1 below and comprise the Ivy growth CG1, the TG2 Cypress group, the T1 Purple Leaved Plum and the T4 Cypress. Other more distant vegetation may also be involved, however this cannot currently be ascertained while the more proximal vegetation remains in situ.

Based on the technical reports currently available, engineering opinion and our own site assessment we conclude there is 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 implicated trees/vegetation we recommend that Ivy growth CG1, the TG2 Cypress group, the T1 Purple Leaved Plum and the T4 Cypress are removed in the first instance (see Table 1). If movement persists, or if further evidence comes to light to confirm the involvement of other vegetation, then further works may be required.

Other vegetation recorded presents a potential future risk to building stability and management is therefore recommended (see Table 2). 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 vegetation influence, however in this case, this is not considered to offer a viable long-term solution due to the species characteristics, size and proximity of the responsible vegetation to the area of damage.

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 (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
T1	Purple-leaved Plum	8.5	490	9.0	3.6	Older than extension(s)	Policy Holder
Management history		No significant recent management noted.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					
T4	Cypress	17.0	650 *	14.0	2.8 *	Older than extension(s)	Third Party 6 Ryland Road CV35 8BY
Management history		No significant past management noted.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					
TG2	Cypress group	3.5	180 Ms *	2.0	1.8	Older than extension(s)	Third Party 7 Ryland Road CV35 8BY
Management history		Subject to past management/pruning - appears regularly trimmed.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					
CG1	Ivy group	2.0	20	6.0	1.3	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - appears regularly trimmed.					
Recommendation		Remove (fell) to near ground level and treat stump to inhibit regrowth.					

Ms: multi-stemmed

* Estimated or approximate 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
T2	Yew	6.5	380 Ms *	5.5	9.5 *	Older than extension(s)	Policy Holder
Management history		No significant recent management noted.					
Recommendation		Maintain broadly at no larger than current dimensions by periodic pruning.					
T3	Bird Cherry [tentative]	5.5	260 Ms *	5.0	8.5 *	Older than extension(s)	Third Party 7 Ryland Road CV35 8BY
Management history		Subject to past management/pruning - previously crown reduced.					
Recommendation		Maintain broadly at no larger than current dimensions by periodic pruning.					
TG1	Cypress and False Acacia group	7.5 *	180 Ms *	5.5	6.0	Younger than Property	Third Party 25 High Street CV35 8BU
Management history		No significant recent management noted.					
Recommendation		Maintain broadly at no larger than current dimensions by periodic pruning.					
TG3	Birch and Cotoneaster group [tentative]	Up to 13.0 *	Up to 300 *	Up to 8.0 ^	6.0 *	Older than extension(s)	Third Party 7 Ryland Road CV35 8BY
Management history		Limited visibility from subject property garden – plotted for information at this stage as species and involvement cannot currently be ascertained.					
Recommendation		No works required at present (subject to review if movement persists).					
TG4	Group of Cypress, Ash, Sycamore and Cotoneaster [tentative]	Up to 16.5	Up to 500	Up to 10.0	4.5	Older than extension(s)	Third Party 6 Ryland Road CV35 8BY
Management history		No significant recent management noted.					
Recommendation		Remove (fell) Sycamore, Ash and Cotoneaster [tentative] to near ground level and treat stumps to inhibit regrowth. Reduce height of Cyresses to 6.0m and trim annually thereafter to maintain at reduced dimensions.					

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Table 2 Future Risk - Tree Details & Recommendations Cont'd

Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
TG5	Pine and Cypress group	15.5 *	Up to 500	Up to 12.0 *	15.5	Older than extension(s)	Third Party 6 Ryland Road CV35 8BY
Management history		No significant recent management noted.					
Recommendation		No works required at present (subject to review if movement persists).					
TG6	Pine group	16.0	680 Ms	11.0	13.7	Older than extension(s)	Policy Holder
Management history		No significant recent management noted.					
Recommendation		No works required at present (subject to review if movement persists).					
TG7	Cypress and Strawberry Tree with Maple at distance	8.5	240 Ms *	5.0	1.3	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - appears regularly trimmed.					
Recommendation		Maintain broadly at no larger than current dimensions by periodic pruning.					
SG1	Mixed spp. shrub group of mostly Rose, Jasmine, Cotoneaster, Pyracantha, Holly, Wiegela and Aucuba	3.5	40 Ms *	Up to 6.0	1.1	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - previously crown reduced.					
Recommendation		Remove (fell) Pyracantha to near ground level and treat stump to inhibit regrowth.					
CG2	Wisteria and Virginia creeper	5.5	40	9.0	0.1	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - appears regularly pruned.					
Recommendation		Maintain broadly at no larger than current dimensions by periodic pruning.					

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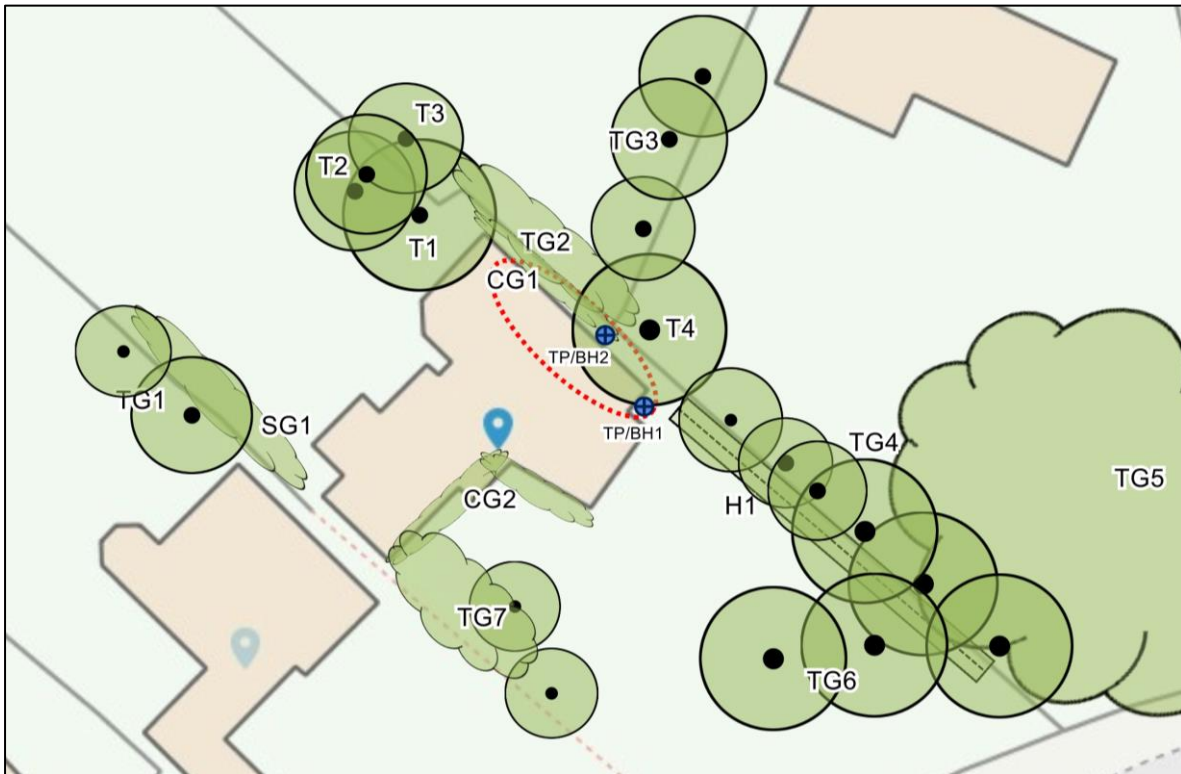
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Table 2 **Future Risk - Tree Details & Recommendations Cont'd**

Tree No.	Species	Ht (m)	Dia (mm)	Crown Spread (m)	Dist. to building (m)	Age Classification	Ownership
H1	Beech hedge	3.5	40 Ms *	1.5	1.4	Younger than Property	Policy Holder
Management history		Subject to past management/pruning - appears regularly trimmed.					
Recommendation		Maintain broadly at no larger than current dimensions by periodic pruning.					

Ms: multi-stemmed * Estimated or approximate value

Site Plan



Tree/vegetation locations are indicative



Approximate areas of damage

Images



View from rear of T1 Purple Leaved Plum, with TG2 Cypress group and T4 Cypress visible beyond [Birches of TG3 visible in distance]



View of CG1 Ivy adjacent to addition, with TG2 Cypress group beyond



View from front of T4 Cypress, with H1 Beech hedge and TG4 group visible to foreground



View of T4 Cypress, H1 Beech hedge, TG4 group and TG6 Pine group