

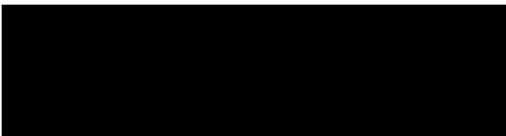
ADDENDUM TECHNICAL REPORT

Crawford Reference [REDACTED]

Deltamist Limited  
Flats 1 - 9  
8 Compayne Gardens  
NW6 3DH

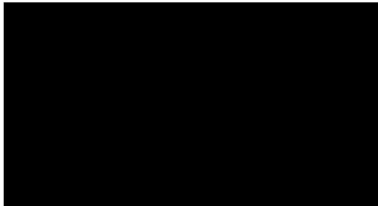
prepared for

Allianz Commercial



SUBSIDENCE CLAIM

DATE 23 September 2022



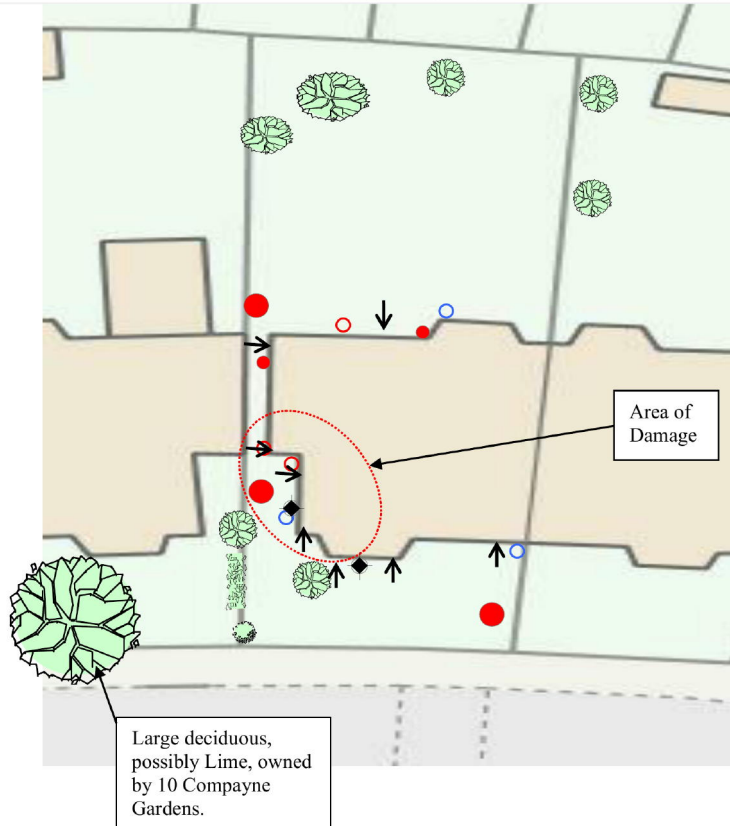
Chartered Loss Adjusters



**Site Plan**
























**This plan is Not to Scale**

This plan is diagrammatic only and has been prepared to illustrate the general position of the property and its relationship to nearby trees etc. The boundaries are not accurate, and do not infer or confer any rights of ownership or right of way. Position of utilities is only indicative and contractors must satisfy themselves regarding actual location before commencing works.



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**Key:**

|   |                     |   |                    |   |                   |
|---|---------------------|---|--------------------|---|-------------------|
|  | Tree: Deciduous     |  | Tree: Conifer      |  | Shrub             |
|  | Hedge               |  | Area of Damage     |  | Bore Hole         |
|  | Trial Hole          |  | Trial & Bore Hole  |  | Level Monitoring  |
|  | Rain Water Manhole  |  | Rain Water Gully   |  | Rain Water Pipe   |
|  | Waste Water Manhole |  | Waste Water Gully  |  | Toilet Pipe       |
|  | Rain Water Drain    |  | Waste Water Drain  |  | Electricity Cable |
|  | Water Supply Pipe   |  | Gas Supply Pipe    |  | Incoming Gas Pipe |
|  | Incoming Water      |  | Incoming Electrics |   |                   |

**INTRODUCTION**

We have been instructed by insurers to investigate a claim for subsidence at the above property. The area of damage, timescale and circumstances are outlined in our initial Technical Report. This report should be read in conjunction with that report.

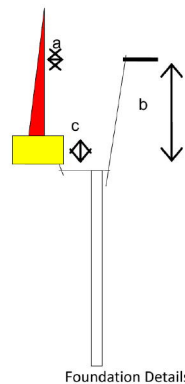
To establish the cause of damage, further investigations have been undertaken and these are described below.

**INVESTIGATIONS**

The following investigations were undertaken to identify the cause of movement.

**TRIAL HOLES**

A trial hole was excavated to expose the foundations - see site plan for location and the diagram below for details. The foundation is 3 brick corbels over concrete bearing onto dry, stiff, brown, gravelly, silty CLAY. Live roots were observed.



| No. | Borehole Depth | Footing (a) | Underside (b) | Thickness (c) |
|-----|----------------|-------------|---------------|---------------|
| TH1 | 3.00 m.        | 300 mm.     | 670 mm.       | 170 mm.       |

**AUGERED BOREHOLES**

A 50mm diameter hand auger was sunk - see site plan for location(s). The borehole revealed similar soil to the base at 3.0m below ground level, becoming slightly stiffer with depth.

**SOIL SAMPLES**

Soil testing revealed that the clay was highly plastic and showing signs of desiccation at the underside of the foundations.

**ROOTS**

A number of roots have been identified to a depth of 2.17m below ground level from the species LIME, corresponding with the large tree on the pavement in close proximity to the damage.



Defects were identified to one drain close to the front left corner of the main house, but not the front projection which is subject to movement. We have recommended one drain is lined as a precaution, but there is no evidence that water seepage from the defect is influencing ground conditions.

#### ARBORICULTURAL REPORT

Independent arboricultural experts at MWA Arboriculture provided a report and identified the Lime tree (T4) as the principal cause of movement and damage. The SG2 group and T3 Bay tree were identified as a contributor influence and the recommended works in respect of this vegetation were completed as of 13 July 2022.

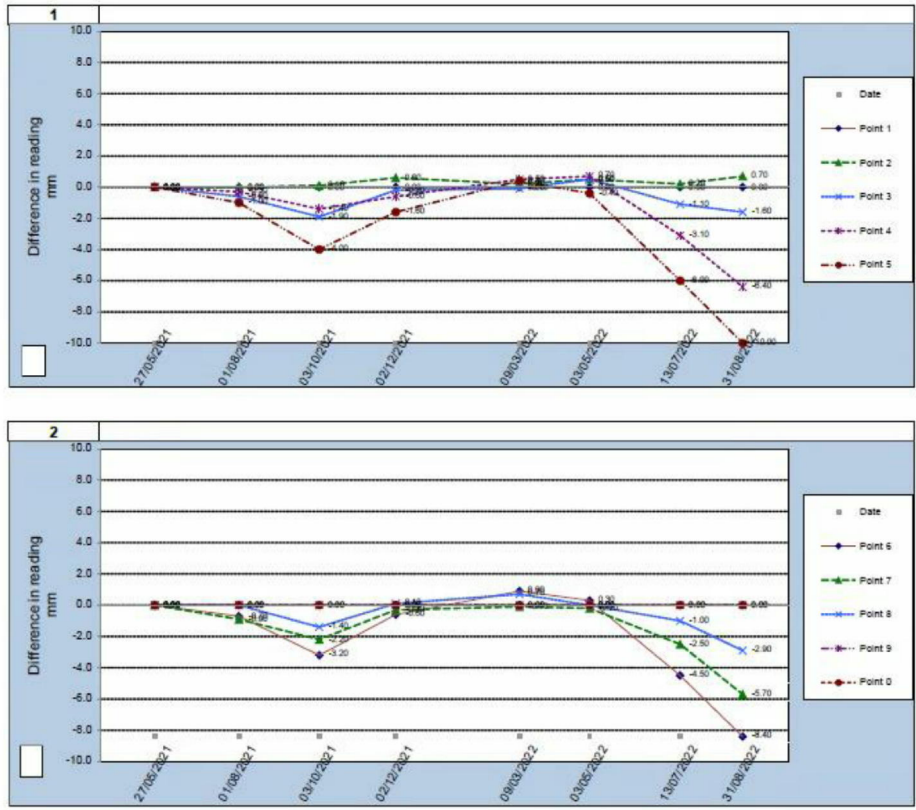
**Table 1** Current Claim - Tree Details & Recommendations

| Tree No.           | Species   | Ht (m)   | Dia (mm) | Crown Spread (m) | Dist. to building (m) | Age Classification    | Ownership                                     |
|--------------------|---|--|----------|------------------|-----------------------|-----------------------|---|
| T3                 | Bay with understorey of various small shrubs        | 3.5  | 110 Ms   | 1.5              | 1.0                   | Younger than Property | Policy Holder                                 |
| Management history |   | Subject to past management/pruning - appears regularly trimmed.  |          |                  |                       |                       |   |
| Recommendation     |   | Remove (fell) Bay to near ground level and treat stump to inhibit regrowth.  |          |                  |                       |                       |   |
| T4                 | Lime  | 17.0   | 720 *    | 10.0             | 12.1                  | Younger than Property | Third Party<br>10 Compayne Gardens<br>NW6 3DH |
| Management history |   | Subject to past management/pruning - previously pollarded at approx. 4.0m and 14.0m.   |          |                  |                       |                       |   |
| Recommendation     |   | Remove (fell) to near ground level and treat stump to inhibit regrowth.  |          |                  |                       |                       |   |
| SG2                | Mixed spp. shrub group of mostly Aucuba and Choisya | 3.5  | 50 Ms *  | 2.0              | 2.0                   | Younger than Property | Policy Holder                                 |
| Management history |   | Subject to past management/pruning - appears regularly trimmed.  |          |                  |                       |                       |   |
| Recommendation     |   | Reduce height of group to 2.0m and cut back sides to leave crown spread of no more than 1.0m.<br>Trim thereafter on an annual cycle to maintain at broadly reduced dimensions. |          |                  |                       |                       |   |

Ms: multi-stemmed \* Estimated value

#### LEVEL MONITORING

Cyclical movement has been recorded from May 2021 to August 2022, with the damaged area of the property moving downward through the dry summer period of 2021 and then upward during the wet winter period of the year. The August 2022 readings indicate further downward movement following the completion of the works to T3/SG2. This pattern of movement can only be created by clay shrinkage subsidence followed by rehydration of the clay soil.



**DISCUSSION**

The results of our investigations confirm that the cause of the subsidence is due to root-induced clay shrinkage. The Lime tree (T4) has been identified as the effective and substantive cause of the movement and damage. This view is supported by the following investigation results:-

- Atterberg limit testing indicates that the soil can be classed as medoiium- high plasticity and hence will shrink and swell with changes in moisture content.
- Tilia (Lime) roots were found below the foundation of the property to a depth of 2.17m.
- Level monitoring between May 2021 and August 2022 indicates seasonal cyclical movement with downward movement during the summer months (as the clay shrinks) and upward movement in the winter months (as the clay swells).
- Ongoing subsidence movement has continued following the completion of the works to the none protected vegetation(SG2/T3)





Vegetation under the owner's control has been removed in line with arboricultural advice.

Level monitoring has recorded a significant drop in the level of the foundation beneath the front right corner following this during the summer of 2022. This confirms that the lime tree on the pavement is the prime cause of the problem and the arboricultural consultant has recommended that it is removed.

In our initial Technical Report dated 4<sup>th</sup> May 2021 cracking with a maximum width of 5mm was recorded which falls into Category 2 "slight" of BRE Digest 251. Since then level monitoring has recorded downward movement of 10mm over the summer of 2022 and the occupants have reported that the condition has deteriorated, therefore we anticipate damage would now fall into Category 3 "moderate" or Category 4 "severe".

Following removal of the tree, we will continue the level monitoring through the autumn and winter to confirm that the foundations have recovered and stabilised, following which the building can be repaired. Repairs are estimated to be in the region of [REDACTED] provided that the tree work is completed promptly.

If the tree is not removed, the front left corner of the building will require underpinning and the cost of these works would be an additional [REDACTED] approximately.

Yours faithfully,

**Mark Lacy BSc (Hons) MCIQB C.Build E FCABE BDMA Tech (Ins)**  
**Crawford Claims Solutions – Subsidence**

[REDACTED]

23 September 2022

