Construction &
Structural Engineering

VISUAL STRUCTURAL INSPECTION REPORT

Client
Michael Fuller

Project Title
78 Dukes Avenue
London
N10 2QA

Project Number
5392

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54 Plashet Grove, East Ham
London, E6 1AE
Office: +44 (0)20 8470 5355
Email: info@as-construction.co.uk
Website: www.as-structuraleng.co.uk

54 Plashet Grove, East Ham, London, E6 1AE
Office: 020 8470 5355
Email: info@as-construction.co.uk
Website: www.as-structuraleng.co.uk

Document Review Sheet

Document Prepared By: Oliver Terrelonge IEng IMIStructE MFPWS

Date: 04 / 09 / 2026

Document Checked By: Akther Uddin BEng (Hons)

Date: 04 / 09 / 2026

Document Approved By: Amir Sukander MEng (Hons)

Date: 04 / 09 / 2026

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54 Plashet Grove, East Ham, London, E6 1AE
Office: 020 8470 5355
Email: info@as-construction.co.uk
Website: www.as-structuraleng.co.uk

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Office: 020 8470 5355
Email: info@as-construction.co.uk
Website: www.as-structuraleng.co.uk

1. Introduction

1.1. We received instructions from Michael Fuller, to carry out a non-intrusive, visual structural inspection of 78 Dukes Avenue, London, N10 2QA. This was made on Monday 31st August 2026.

1.2. The weather was dry and sunny at the time of the inspection.

1.3. The purpose of the inspection was to carry out a visual survey of the internal and external fabric of the house subsequent to the householders advising insurers of a prospective subsidence claim.

1.4. This report gives the results of our inspection, discusses these results and gives recommendations where necessary.

2. Description and Background of Property

2.1. 78 Dukes Avenue, London, N10 2QA, is a two-storey end-of-terrace house constructed circa 1910 (See photos 1 & 2). The property has the benefit of a converted loft space, providing additional habitable accommodation, and a basement utility room which may be accessed from the street elevation.

2.2. A single storey extension has been provided to the rear to create a larger kitchen/diner. We understand this was constructed in 2001. The loft conversion predates the current ownership.

2.3. The external walls are of solid masonry. Internal partitions are a combination of masonry and lightweight timber studwork. The floors are of suspended timber construction with the exception of the extended kitchen/diner which is of concrete construction.

2.4. The roof is duo-pitched and slate clad with lead flashings at abutments.

2.5. Internal access was provided by Michael Fuller, who we understand has owned this property since October 1999.

2.6. The ground floor accommodates two receptions, a kitchen/diner, and an understairs cloakroom. Timber stairs lead to the first floor which accommodates three bedrooms and a bath/WC. A further flight of stairs leads to the converted loft which accommodates two bedrooms and a shower room.

2.7. Internal decorations were completed 2017.

2.8. To the front elevation there is a 7m high, local authority owned, deciduous tree in the public footpath approximately 8m from the front bay, a 9m high deciduous tree in the front garden of 80 Dukes Avenue 9m from the front bay, and various shrubs up to 2m in height in the front garden forming the boundary between 78 and 80 and immediately adjacent to the front bay.

2.9. To the rear elevation, in the rear garden of 80 Dukes Avenue, there is a 10m high deciduous tree 10m from the rear left hand corner of the extension, and a 6m high deciduous tree 7m from the rear extension within the curtilage of the subject property.

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Office: 020 8470 5355
Email: info@as-construction.co.uk
Website: www.as-structuraleng.co.uk

2.10. The soil and vent pipe exits the property adjacent to the original rear elevation with an internal manhole within the rear extension.

2.11. We did not lift the cover but have assumed the drain runs parallel to the original rear wall, turns to route through the access between 78 and 80 before joining the main sewer in Dukes Avenue.

2.12. The site on which the property stands slopes gently downwards from right to left, and from front to rear.

2.13. Michael Fuller advises he noticed cracking to the rear elevation in June 2025 and contacted his insurers.

2.14. Insurers instructed a structural engineer, loss adjuster and an arboriculturalist to carry out investigations which included the excavation of trial pits, retrieval of roots, level and crack width monitoring, laboratory analysis of the retrieved soils and roots, and a tree report.

2.15. Subsequent to insurers carrying out their initial enquiries, Michael Fuller noticed cracking develop to the front elevation and advised insurers. They responded by extending the monitoring to the front of the property in January 2026.

2.16. We understand two substantial trees were removed from the rear garden of 80 Dukes Avenue in September 2025.

2.17. It is worthy to note the front of this property has previously suffered from subsidence which was controlled by vegetation management and subsequent superstructure repairs.

3. Limitations of the Inspection

3.1. During a visual structural inspection, we carefully inspect sample surfaces which are exposed and accessible. Where possible, we use a spirit level to detect any unusual distortions. Our opinion on the structural condition of the property is then based on what we see and on our general impression of the building's robustness, which is a rough measure of its layout and properties of the materials used. Standard guidelines are available on the severity of damage (BRE Digest no 251) and on stability (CIRIA Report no 111), and we rely on these when forming our opinions.

3.2. Most structural problems, by the time they are serious enough to cause concern, will lead to visible damage, and will be spotted during a visual structural inspection. However, some faults lie hidden in the early stages; also, low levels of structural movement are not detectable by surface inspection or spirit level checks.

3.3. There are a number of things we can do to increase the chances of finding hidden faults and slight movement. We can, for example, expose foundations, test the soil and carry out a precise distortion survey. These tasks add considerably both to the cost of the report and the inconvenience of residents, and for those reasons they are reserved for the full structural investigation, where significant damage is evident and it is necessary to find its cause and suggest a remedy.

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3.4. If a visual structural inspection finds slight damage, the question arises: will the damage get worse and eventually require an expensive remedy? We give our informed opinion on the risk of future movement and damage, based on what we have seen during our visit, but no-one can entirely eliminate the risk of future movement, and it is important to maintain insurance cover for the building.

3.5. We are obliged to state that we have not inspected woodwork or other parts of the structure which are covered, unexposed or inaccessible, so are therefore unable to say that any such part of the property is free from defect.

3.6. We are also obliged to state that this inspection and report is concerned solely with structural matters. It is not a building survey which could comment on dampness, services, joinery, insulation, etc., and should not be construed as such.

4. Geology

4.1. Geological maps of the area, based on the 1883 geological survey of England, indicates the soil beneath the site is London Clay.

4.2. London clay is a silty clay which is dense and strong.

4.3. It is also highly plastic (or shrinkable), meaning that it shrinks when moisture is removed from it and swells to more or less the same extent when moisture returns.

4.4. If shrinkage takes place beneath foundation level it can lead to a loss of support to the foundations, which may then subside.

4.5. Swelling is the reverse process. It can cause upward pressure on the foundations which may then heave.

4.6. Shrinkage and swelling takes place regularly in the top 1m of London clay, as a result of seasonal changes. In some circumstances, it can occur to a greater depth.

4.7. Trees/vegetation can remove moisture to a depth of 3m or more, causing correspondingly deep shrinkage.

4.8. If established vegetation is felled/removed there begins a slow return of moisture content in the soil, accompanied by swelling and of course heave of the foundations within the swelling zone.

4.9. London clay is therefore particularly susceptible to subsidence as a result of vegetation root activity, or heave following vegetation removal. Shallow foundations can be affected by seasonal subsidence and heave and damage may escalate during periods of extreme weather.

54 Plashet Grove, East Ham, London, E6 1AE
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5. Documents Provided

5.1. We were provided with a structural survey commissioned by QuestGates Ltd, a loss adjuster, dated 1st August 2025.

5.2. They excavated trial holes adjacent to the rear left hand corner of the original house, and adjacent to the flank wall of the rear extension.

5.3. The report noted external hairline width cracking over the flank window of the rear extension, and vertical cracking above the French doors of the rear reception at the junction of the rear wall.

5.4. Internally, the report noted mirror image hairline width cracking above the flank window in the rear extension, ceiling cracking in the rear reception and a separation between the masonry and the left hand side of the French doors.

5.5. It concluded the most likely cause to be tree root induced subsidence with possible leakage of drains, and recommended further investigations which should include a drainage CCTV survey, and crack width/level monitoring for a period of twelve months.

5.6. Level monitoring was carried out by 'My Home Needs', commencing 2nd September 2025 with results available up to 7th May 2026.

5.7. The readings suggest the property is experiencing some recovery to the rear, (noting two trees were removed from the rear garden of 80 Dukes Avenue in September 2025), but recorded additional downward movement to the front of the property between March and May 2025.

5.8. We understand there have been more recent readings but have not been provided with the results.

5.9. MWA Arboriculture produced a report dated March 2026.

5.10. This report advises the trial pit excavations were terminated at 1.2m below ground level due to 'hard ground', which we interpret as evidence of desiccation. It also advised that the drainage CCTV survey found no areas of damage which could contribute to the apparent cracking.

5.11. It confirmed that the excavated soil was proven to be a plastic London Clay susceptible to volumetric change in relation to changes in soil moisture.

5.12. Their report concluded that the two trees which had been removed from the rear garden of 80 Dukes Avenue were likely to be the main contributors to the experienced subsidence, and recommended vegetation management for the remaining tress which included the removal of the remaining tree in the rear garden of 80 Dukes Avenue, a height reduction in the mixed species in the rear garden of 76 Dukes Avenue, with all other vegetation to be managed to ensure it did not exceed its current height and/or spread.

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6. Cracking

6.1. An external and internal inspection of the property was made. Reference to the right and left hand sides for rooms and walls are made when looking at the front of the house with one's back to Dukes Avenue. Reference to right and left for the location of the cracks is made from the direction facing the wall.

6.2. Externally, there is a tapered vertical crack to the front bay. The crack commences as hairline in width at ground level before terminating as a 5mm wide crack at the underside of the ground floor sill. It continues through the sill as a 9mm wide crack. (See photos 3, 4 & 5).

6.3. We also noted a tapered open joint between the ground floor stone column to the left hand side of the bay and the window joinery. The open joint commences as 3mm in width at sill level and increases to 8mm in width at lintel level, suggesting the bay has rotated towards the left (towards 80 Dukes Avenue). See photo 6.

6.4. There are hairline width open joints at the junction of the ground floor bay stone column to the left hand side and the stone lintel with additional separation between the masonry and window joinery. (See photo 7).

6.5. The cracking and deformations noted to the front bay are indicative of a downward movement (subsidence) to the left hand side of the bay towards the vegetation in the front garden of 80 Dukes Avenue.

6.6. To the rear elevation we noted 4mm wide stepped cracking above the right hand reveal of the French doors to the rear reception extending to the underside of the first floor window sill, with a sympathetic 2mm wide open joint between the masonry and timber frame to the right hand side. (See photos 8 & 9).

6.7. We also noted a 2mm wide stepped crack above the left hand reveal of the French doors, and a 2mm wide stepped crack above the left hand reveal of the first floor window immediately above. (See photos 10 & 11).

6.8. Based on the description in the August 2025 structural survey, these cracks appear to have increased in extent and magnitude since that date, and appear to be associated with the presence of the previous and existing vegetation in the rear garden of 80 Dukes Avenue extracting moisture from the soil beneath the foundations to the rear of this property causing them to subside.

6.9. Internally, there is a hairline width diagonal crack in the kitchen/diner located at the junction of the original house and rear extension (see photo 13). This is close to the cracking noted in para 6.7 and is also associated with the presence of the previous and existing vegetation in the rear garden of 80 Dukes Avenue.

6.10. The aforementioned crack is also expressed as a hairline width vertical crack in the rear right hand corner of the rear reception (see photo 14).

6.11. There is a 1mm wide diagonal crack in the coving to the rear left hand corner of the rear reception which extends into the ceiling adjacent to the chimney breast with a sympathetic open joint between the masonry and left hand side of the French doors. (See photos 15 & 16).

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6.12. This cracking and deformations are the internal reflection of the external movement noted in para 6.6 above.

6.13. There is a 7mm wide vertical crack beneath the bay sill in the front reception with an 8mm wide vertical open joint in the window frames to the right hand side of the bay (see photos 17, 18 & 19).

6.14. We also noted a 10mm wide gap between the bay masonry and suspended timber floor, and additional full height hairline width vertical cracking to the flank wall adjacent to the ground floor front bay (see photos 20 to 24 inc).

6.15. These cracks and deformations are the internal reflection of the external cracking noted in paras. 6.2, 6.3 & 6.4, and are primarily the result of subsidence activated by the presence of the vegetation in the front garden of 80 Dukes Avenue, noting the shrubs in the front garden of the subject property may also be a contributory factor.

6.16. There is hairline width diagonal cracking above the right hand reveal of the rear bedroom door opening (see photo 26), and a hairline to 1mm wide open joint at the junction of the flank wall and ceiling (see photo 27).

6.17. There are hairline to 1mm wide cracks above both reveals of the middle bedroom window (see photos 28 & 29). These are the internal reflection of the external cracking noted in para. 6.7

6.18. It is not clear if these internal cracks were present in the August 2025 structural inspection by others as they have not been mentioned, but if they were present, it is clear they have progressed in extent and magnitude.

6.19. There is a 1mm wide open joint at the junction of the party wall/ceiling in the first floor bath/WC to the front of the property (see photos 30 & 31).

6.20. This area of defect is remote from the noted subsidence damage and appears to be associated with thermal movement, although subsidence cannot be discounted.

6.21. In summary, there is sufficient crack evidence to conclude the property has suffered from subsidence related to the presence of adjacent vegetation acting on a plastic subsoil.

7. Deformations

7.1. Where considered appropriate or necessary a spirit level was used to make random checks on the verticality of walls and the level of floors, window sills and other normally horizontal surfaces.

7.2. Naturally the amount of out-of-plumb or level will vary according to the exact position measured.

7.3. There is a 15/1000 downward slope in the ground floor bay window sill towards 80 Dukes Avenue (see photos 5 & 25), and a 12/1000 downward slope in the French doors threshold towards 80 Dukes Avenue (see photo 12).

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7.4. Both deformations are indicative of a downward movement in the foundations (subsidence).

7.5. All other measured surfaces, although not necessarily precisely plumb or level, are within accepted tolerances for a building of this type and age.

8. Discussion and Conclusion

8.1. In establishing the cause or causes of defects we look for compatibility between the extent and pattern of damage, distortions, information on the subsoil and any other evidence it has been possible to gather. The greater the volume of evidence gathered, the more certain we can be of our conclusions.

8.2. Our conclusion is informed, at least in part, by the investigations carried out by others.

8.3. It has been established that the underlying soil is a plastic London Clay with desiccation present 1.2m below ground level. This state is normally activated by the extraction of moisture by adjacent vegetation.

8.4. There is sufficient vegetation within influencing distance to allow us to conclude that the recently experienced long dry summers have proven to be 'the straw that broke the camel's back' causing the property to suffer from subsidence.

8.5. We recommend the 9m high deciduous tree in the front garden, and the 10m high deciduous tree in the rear garden of 80 Dukes Avenue be removed. We also recommend the mixed species in the rear garden of 76 Dukes Avenue be removed rather than reduced in height.

8.6. All shrubbery forming the front boundary between 78 and 80, and that adjacent to the front bay is to be removed.

8.7. We also recommend LB Haringey be informed of the potential risk their street tree poses to the structural integrity of the subject property, and they be invited to reduce the height by 25% and the tree to be maintained at this reduced height.

8.8. In our opinion, the vegetation management outlined above should be carried out at the earliest opportunity. Subsequent to these works the property should be monitored for at least 6 months.

8.9. Once relative stability has been achieved, external crack repairs should include masonry reinforcement (helibars or similar), and internal crack repairs should be reinforced with expanded metal lath.

8.10. Affected internal and external surfaces to be redecorated on completion of structural repairs.

54 Plashet Grove, East Ham, London, E6 1AE
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Appendix A: Classification of Damage Based Upon Crack Widths

A.1 Extract from Table 1 BRE Digest 251

In order to put the observed cracking to the building into context, it is common practise to categorise the structural significance of the damage in accordance with the classification given in Table 1 of BRE Digest 251, produced by the Building Research Establishment and as shown below.

Category of Damage	Significance of Damage	Crack Width
Category 0	Negligible	≤0.1mm
Category 1	Very Slight	>0.1mm ≤ 1mm
Category 2	Slight	>1mm ≤ 5mm
Category 3	Moderate	>5mm ≤ 15mm
Category 4	Severe	>15mm ≤ 25mm
Category 5	Very Severe	>25mm

In general, categories 0, 1 and 2 with crack widths up to 5 mm can be regarded as 'aesthetic' issues that require only redecoration in most cases. Categories 3 and 4 can generally be regarded as 'serviceability' issues, that is, they affect the weathertightness of the building and the operation of doors and windows. Category 5 presents 'stability' issues and is likely to require structural intervention.

54 Plashet Grove, East Ham, London, E6 1AE
Office: 020 8470 5355
Email: info@as-construction.co.uk
Website: www.as-structuraleng.co.uk

Appendix B: Observational Photographs



Photo 1



Photo 2



Photo 3

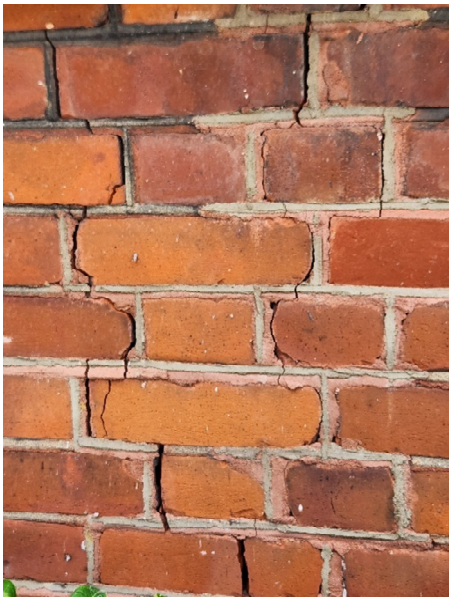


Photo 4

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Email: info@as-construction.co.uk
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Photo 5



Photo 6



Photo 7



Photo 8

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Photo 9



Photo 10



Photo 11



Photo 12

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Photo 13



Photo 14



Photo 15



Photo 16

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Photo 17



Photo 18



Photo 19



Photo 20

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Photo 21



Photo 22



Photo 23



Photo 24

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Photo 25



Photo 26



Photo 27



Photo 28

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Photo 29



Photo 30



Photo 31

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