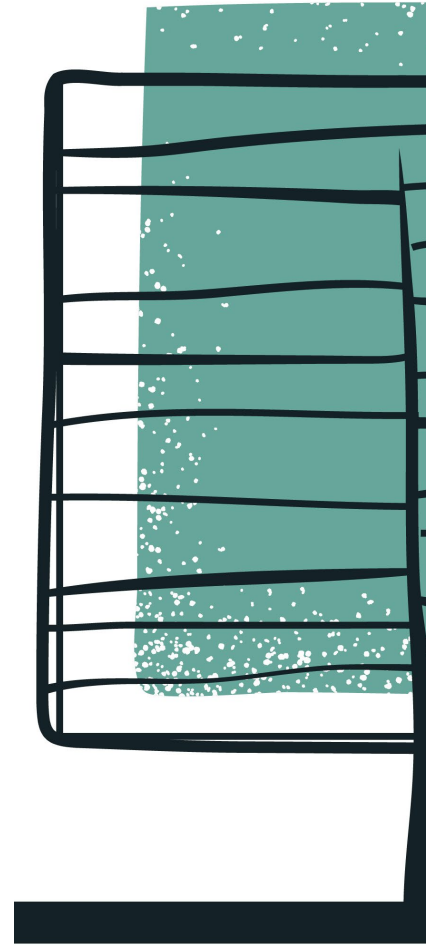




Report No: LTM0263.ATN.01

Date: 15/06/2021

Project: 623 Burnage Lane, Manchester, M19

Arboricultural Technical Note

Inspection Record.

Date of Inspection	Surveyor
11/06/2021	Matthew Lally. FdSc MArborA

Lally Tree Management.

36 Goldsworthy Road, Urmston, Manchester, M41 8US

[T] 07305 740120 [E] matt@lallytreemanagement.co.uk [W] <https://www.lallytreemanagement.co.uk/>

This report is the property of Lally Tree management. This report may only be reproduced or disclosed to third parties with express written consent from Lally Tree Management.

Revision	Date	Prepared by	Status
Final	15/06/2021	Matthew Lally	Complete

1. Introduction & Scope of Works

Professional Details

My name is Matthew Lally and I have been working and studying in the Arboricultural Industry for over 16 years. I have many years practical experience as an arborist and professional experience as a consulting arboriculturalist.

I so far hold the following Arboricultural qualifications and technical memberships:

- FdSc Arboriculture
- LANTRA Profession Tree Inspection Certificate
- VALID – Validator
- QTRA Registered User
- Professional Member of the Consulting Arborist Society
- Professional member of the Arboricultural Association
- Associate Member of the Institute of Chartered Foresters

Tree Assessment

This report was commissioned by Mrs Judy Bartlett of 623 Burnage Lane, Manchester. Its purpose was to carry out a site visit and to make a visual assessment of the trees at the front of the property and make comment on the likely impact the tree is having on the adjacent building. This report also considers the Structural Engineers Report produced by PKD Consulting Engineers (Ref: A153-0421).

This document provides details of their condition and recommendations for management and should be read in conjunction with the data tables of Appendix One and site plan of Appendix Two.

The survey on which the findings of this report are based was undertaken on 11/06/2021.

All trees were inspected from ground level only and all comments and recommendations made have considered the location of each tree, their surroundings and their likely impact on persons or property.

The limitations of this report are restricted to the persons, time, information made available and purpose for which this report has been prepared.

2. Limitations

Trees and shrubs are living organisms whose health and condition can change rapidly. The health, condition and safety of trees should be checked at least once a year.

I have not contacted the local planning authority to determine whether any Tree Preservation Order (TPO) covers any of the trees, nor to determine if the site is in a Conservation Area. Before undertaking work to any of the trees, it would be advisable to check whether either of these planning controls are in operation; if they are, it would be necessary to obtain consent (or in the case of a Conservation Area give six weeks' notice of intent) before undertaking any such work.

I did not inspect any part of the drainage or service systems on the site as I am not qualified to do so.

The report is of a preliminary nature owing to the time constraint imposed by the client. If further details are required these will be highlighted in the recommendations.

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.

I did not undertake excavation to ascertain the presence of roots. I did not take root samples to confirm their genus through laboratory processes.

The trees have been inspected from ground level only as this is a preliminary report, should a more detailed climbed inspection be required this will be highlighted in the recommendations.

The limitations of this report are restricted to the persons, time, information made available and purpose for which this report has been prepared.

3. Site Details

I visited 623 Burnage Lane, Manchester, M19 to inspect the trees possibly associated with structural damage on Friday 11th June 2021 and was given access by the current owner Mrs Judy Bartlett

I attach a plan in appendix one showing the location of all the significant trees. This plan also shows the positions of the built structures.

The following information is presented related to the significant trees and shrubs:

- Tree/shrub number as shown on the plan.
- Tree/shrub species
- Height (estimated in metres)
- Average crown diameter spread (metres)
- Vigour and future growth potential
- Distance of tree/shrub from:
 - a) Buildings
 - b) Damaged section of Bay Window

4. Available Information

The available information regarding the damage being experienced by 623 Burnage Lane is predominantly in the form of an engineer's report by PKD Consulting Engineers (Ref: A153-0421). A copy of this has been made available in appendix two.

The report notes that a large root appears to be passing through the wall of 623 Burnage Lane and provides photographic evidence of this.

This report attributes the cracking in the bay window brickwork to stress imposed on the masonry due to annual incremental growth and also due to subsidence caused by tree roots.

A trial pit undertaken by PKD Consulting Engineers confirms relatively shallow footings and a clay subsoil. The engineers report recommends the removal of the tree.

I note from the geological survey map (British Geological Survey Solid and Drift Edition 1:50 000 series) that the underlying strata may well be Till, Devensian - Diamicton. Diamicton can be shrinkable in nature.

5. Findings

On the day of the visit 2 trees were identified at the front of the property T1 (London Plane) & T2. (Birch). The trees were visually assessed and marked clearly on the site plan. The collected data is outlined below:

T1

Species:	London Plane (Platanus x hispanica)
Height (Est in metres):	19m
Average Crown Spread (Est m):	16m
Vigour and Future Growth Potential:	High Vigour. Has potential to grow significantly if left unpruned.
Water Demand:	Moderate
Influencing Distance*	19.5m
Distance of tree from:	
a) House:	7.5 m
b) Damaged Bay:	9 m

Vitality and Condition:

The London Plane tree has good vitality with no obvious risk features evident on the day of the visit. The tree is highly visible from public viewpoints. Large surface roots are present which are disrupting the drive. It is likely that further root damage to the drive will occur.

*As described in NHBC Chapter 4.2

T2

Species:	Birch (Betula Pendula)
Height (Est in metres):	12m
Average Crown Spread (Est m):	8m
Vigour and Future Growth Potential:	Moderate Vigour.
Water Demand:	Low
Influencing Distance*	7m
Distance of tree from:	
c) House:	4.4 m
d) Damaged Bay:	6.6 m

Vitality and Condition:

The Birch has good form and vitality with no obvious risk features observed. The tree is highly visible from public viewpoints.

*As described in NHBC Chapter 4.2

6. Analysis

T1 is within influencing distance of the building. The British geological survey data and the findings of the engineer's report suggest that the soil could be shrinkable in nature. A large root passing through the wall of 623 Burnage Lane appears to be from this tree. It is likely that the damage being experienced by 623 Burnage Lane is being caused by this tree as outlined in the engineer's report. Information provided by "Tree Roots & Buildings" by DF Cutler & IBK Richardson suggest that 90% of all cases of subsidence involving London Plane are with structures 10m or closer, which T1 is.

T2 is within influencing distance of the 623 Burnage Lane. The British geological survey data and the findings of the engineer's report suggest that the soil could be shrinkable in nature. It is possible that the damage being experienced by 623 Burnage Lane is being caused or contributed to by this tree. Information provided by "Tree Roots & Buildings" by DF Cutler & IBK Richardson suggest that 90% of all cases of subsidence involving Birch are with structures 8m or closer, which T2 is.

7. Conclusions

It is possible that any subsidence is being caused by T1 & T2. It is likely that the root passing through the masonry adjacent to the crack is from T1 and is causing damage from incremental growth.

Damage is being caused to the driveway of 621 Burnage Lane from large surface roots and this is likely to continue.

8. Recommendations

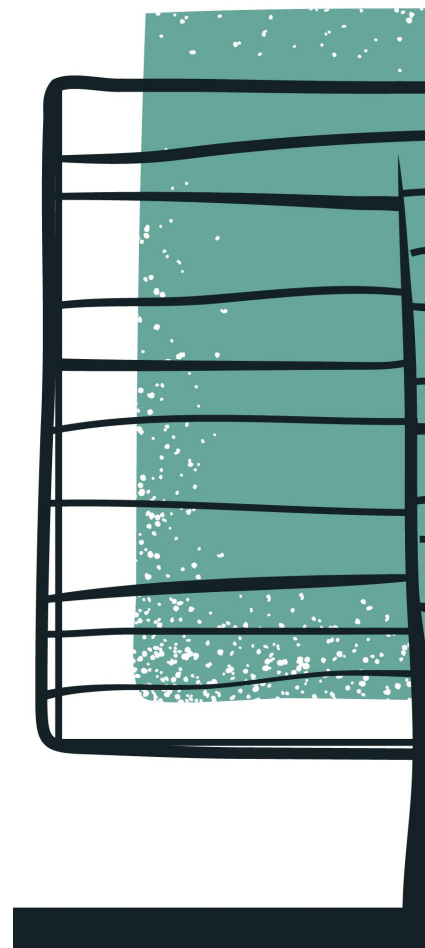
There is no evidence at this time to disregard the engineers' recommendations to remove T1, therefore the removal of T1 can be seen as reasonable. It is believed that T1 is protected by a Tree Preservation Order (this has not been confirmed) and will therefore require permission from the Local Planning Authority before any works are undertaken to this tree.

There is no evidence at this time to absolve T2 from any involvement in the subsidence issues and therefore T2 should be removed along with T1.

If further information is required to confirm the findings, then crack monitoring should be utilised to ascertain the seasonal fluctuations and confirm that vegetation is the cause of the subsidence. The plasticity index of the soil should be ascertained to understand the shrinkability of the soil. Root analysis of the roots adjacent to and under the foundations will be required to ascertain which tree is directly responsible for any damage.

Appendix 1.

Map



623 Burnage Lane
Manchester, M19.
Tree Location Map



ji's Pizza & Kebab
House (Burnage)
Takeout • Delivery

House of Furniture
Delivery

Glamour Beauticians

Tri Royale
• Delivery

Legend

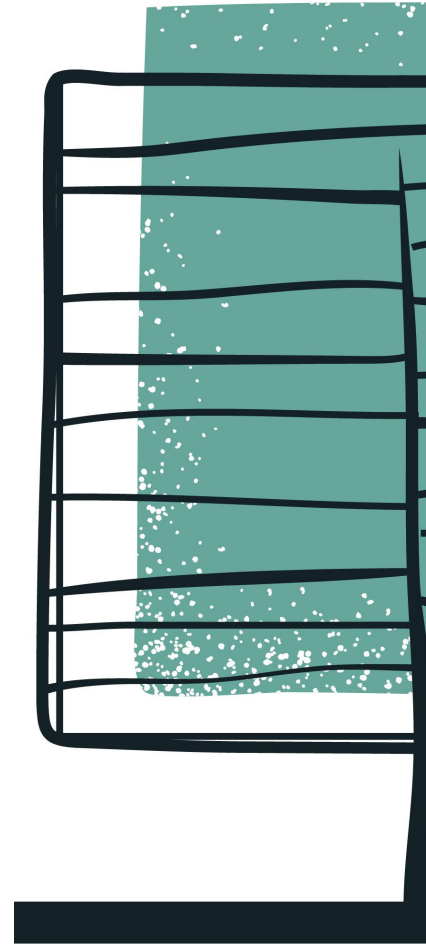
● Individual tree

0 7.5 15 m

Appendix 2.

Structural Engineers

Report



Reference: A153-0421

Date: 28/04/2021

FAO Jessica Wilkinson

RE: Structural Engineer Report: 623 Burnage Lane, Manchester

Introduction & Clients Brief

We were commissioned to carry out a visual inspection and produce a Specific Defect Structural Engineers Report for the property at 623 Burnage Lane, which our Client owns.

The purpose of our inspection was to examine the foundations of the front bay window structure. A trial pit was excavated to enable us to inspect the foundations. No other area in the property was inspected or form part of this Specific Defects report findings.

To aid our evaluation we have been provided with a copy of the Atkinson Peck Consulting Engineers Structural report dated 28 August 2019.

Mr Paul Davies. B.Eng (hons) C.Eng; M.I.StructE of PKD Consulting Engineers Ltd carried out the visual inspection on the 27/04/2021.

Brief Description of the Property.

The property is a traditional 1930s semi-detached house constructed with cavity brick walls.

**Find below the key structural items observed during our inspection.
Annotations of views are assumed facing the front elevation.**

At time of my inspection the drains to the front of the property were being re-laid. I understand a CCTV drainage inspection had discovered several significant defects primarily due to root damage.

Our Client has recently noticed new external cracking at the front right-hand corner of the front bay window. A trial pit was excavated below the area of cracking to allow visual inspection of the foundations and bearing strata.

A large woody tree root was discovered in the trial pit passing through the cavity brick wall of the bay structure. The root is of considerable diameter and had obviously been growing through the wall for many years. The root appears to be

from the large tree (possibly an Elm tree) located alongside the front drive of the neighbouring property.

The cracking to the bay window brickwork (visible internally and externally) is likely due to the stresses imposed on the masonry as the large tree root grows in diameter. I also suspect the cracking to the front left-hand internal wall in the hallway is also due to the same root causing damage to brickwork and foundations.

The bay structure has been partially rebuilt in the past. However, it does not appear the bay was underpinned as part of this repair work. The previous Structural Engineers report identified tapered stepped cracking on the left and right corners of the bay. Due to the evidence uncovered in the trial pit, the cracking is likely due to subsidence caused by tree roots. I suspect subsidence was the reason the bay was rebuilt years ago. Unfortunately, further movement has occurred, and I suspect is ongoing.

Recommendations

The trial pit confirmed the bay structure is bearing onto sandy clay cohesive stratum and has relatively shallow footings. As the subsoil is clay, it will be susceptible to seasonal variations in ground water due to the nearby trees.

I understand the drains to the front of the property were damaged due to extensive tree root infestation. Although it is possible drainage defects contributed to the subsidence that has occurred to the front bay structure, the prime cause is obviously due to the large tree root causing actual structural damage. There is also indication of subsidence caused by the roots affecting the water content of the clay bearing strata.

Due to the damage that has and could still occur from the nearby tree, I would strongly recommend the tree be removed. It is obvious the tree is causing significant structural damage and is affecting the properties foundations and drainage system.

Once the tree is removed, I would recommend the entire bay structure be underpinned due to the shallow foundations. The area where the large tree root has passed through the brickwork should also be rebuilt. Where bricks have cracked, they should be replaced. Helifix Helibar bed joint reinforcement should then be installed to strengthen the masonry below the ground floor bay window. The 8mm diameter Helibars should be installed at 300mm vertical centres the full width of the bay and be resin fixed in place. The wall should then be repointed in matching mortar.

Subject to whether the tree can be removed, will affect the underpinning method adopted. If the tree is removed, the bay can be underpinned using a traditional

PKD Consulting Engineers

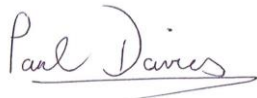
Structural Engineers

mass concrete method, poured in sections in accordance with Structural Engineers details. However, if the tree cannot be removed, the underpinning may need to be a more expensive mini-pile solution to avoid excessive excavation. A root barrier would also be required to help prevent further damage.

I would also recommend removing a few floorboards in the hallway or living room alongside the left-hand wall in the entrance hall. This is to allow visual examination of the sub floor to determine if the large tree root has caused damage to the internal masonry. The cracking to this wall is also due to subsidence caused by the nearby tree. Therefore subject to findings, underpinning may be required.

In the first instance I would recommend you contact your Building Insurance company for them to advise you how they wish you proceed.

Yours faithfully



Mr P. Davies B.Eng (Hons) C.Eng. M.I.Struct.E.

Photographs



Trial pit – large tree root passing through the wall of the bay window. Base of hole at foundation depth.

PKD Consulting Engineers

Structural Engineers



Cracking to the right hand corner masonry caused by the tree root & subsidence. Crack has recently got worst with a brick split, which indicates ongoing movement has occurred.

PKD Consulting Engineers

Structural Engineers



Tree located near property

PKD Consulting Engineers

Structural Engineers



Cracking to internal wall between living room and entrance hall. (noted in 2019 report)
Opposite side of wall in entrance hall has recently been plastered.

PKD Consulting Engineers

Structural Engineers



Cracking below the bay window (right hand side).
Noted in 2019 report, but may have got worst.

Limitations of the Report

The contents of this report are specific to the clients brief. **No other areas of the property** were inspected or form part of this specific report. Therefore, we cannot verify/confirm if there are any other defects to the structural.

The contents of this report does not cover the condition of the dpc, possible damp penetration, condensation or the condition of the timber components with regard to rot and infestation. We will not inspect building services (gas, electricity, water, heating), manholes and drainage systems, garages and other outbuildings, the boundary structures, retaining walls, paths and drives, windows, doors and other joinery items, internal and external décor / plaster / ceiling finishes, rainwater goods, kitchens and bathrooms or any areas without ready access.

The report should not be construed as a valuation or homebuyers report and is not an inventory of every single defect, some of which would not significantly affect the use of the property. If the report does refer to some minor defects, this does not imply that the building is free from other such defects.

This report is restricted to a visual inspection and no mechanical testing of any kind was carried out, nor any precise measurement taken. We did not expose any other part of the structure that was covered, unexposed or inaccessible and this includes pulling up laid carpets etc, or loft areas without ready & safe access. We are therefore unable to report that any such part of the property that is covered is free from defect.

Any opinions expressed in this report, as to the likely occurrence of movement, settlement or subsidence cracking etc is given in good faith in an attempt to assist our client. However, where such opinion is that further movement is unlikely, this should not be taken as a guarantee. It is therefore important to understand the opinions expressed in this report reflect the limitations of this type of visual inspection.

The above is not intended to be an exhaustive list of minor defects. They are purely significant structural defects apparent from a visual inspection. Further defects may be encountered upon more extensive investigation, involving exposure of structural elements etc.

Rights of Originator

This report is for the sole use of the client, their Mortgage Company or insurance company and is only applicable to the property (or part of the property) inspected. It must not be reproduced or transferred to any other third party without the express written consent of PKD Consulting Engineers Ltd. The report can be shown to builders/workmen when requiring quotations and for reference during any remedial works required. All contractors must have adequate Public Liability insurance and be fully experienced in the type of repairs specified.

We will consider the re-issue of the report in its original form to a third party within 6 months of the original report date. Upon the lapse of a 6 month period, the report can only be re-issued following a full re-inspection, which will attract a full inspection fee.

We reserve the right to refuse copies of the report to any third party (other than those named above). We also reserve the right to amend our opinions in the event of additional information being made available at some future date.

Appendix 3.

Pictorial Evidence

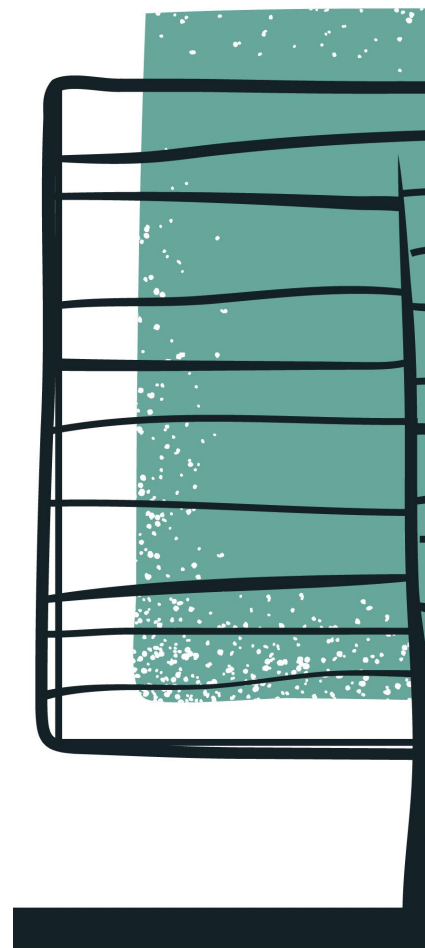




Figure 1 Cracking is evident in the brickwork of the bay windows



Figure 2 Roots from T1 are disrupting the driveway of 621 Burnage Lane



Figure 3 Drive disruption from T1



Figure 4 T1 is highly visible from public viewpoints



Figure 5 T2 has good vitality and is highly visible from public viewpoints