



Overlooking the front turning area where two large mature trees provide outstanding visual aesthetics

Post Arboricultural Impact Assessment

Date of the Inspection

5th November 2024

Site

663 Bury Road
Rochdale
OL11 4 AX

Description

Post impact assessment of a residential property and its landscaping

Instructed By

Ben Whiteman

Author

Andrew McLoughlin

Treestyle Consultancy Ltd

info@treestyleconsultancy.co.uk

Contents

Executive Summary

1.0 - Introductions

Instruction

Scope

Site Description

2.0 - Tree Survey

Tree Survey

General Data Capture

Categorisation

Quality Assessment

3.0 - Tree Constraints

Above Ground Constraints

Root Protection Area

Soils

4.0 - Development Proposal

5.0 - Arboricultural Impact Assessment

6.0 - Arboricultural Tree Constraints

7.0 - Tree Protection Requirements

8.0 - Tree Protection Plan

Construction Exclusion Zones

Access Details

Parking

Storage

Construction

Protective Fencing

Hard Surfaces

Responsibilities

9.0 - Conclusion

11.0 - Recommendations

12.0 - Caveats and Limitations

14.0 - References

13.0 - About the author

14.0 - Photographs

Drawing 1 - Tree Constraints Plan

Appendix A - Tree Schedule

Appendix B - Glossary

Appendix C - BS 5837:2012 Cascade Chart for Tree Quality Assessment

Executive Summary

Treestyle Consultancy was commissioned to complete a survey to specifications set out in British Standard 5837:2012 *Trees in relation to design, demolition & construction - Recommendations*. This document is an Arboricultural Impact Assessment (AIA) which explains the post development impact on trees around the grounds.

The Tree Survey recorded six individual trees and two groups of vegetation within influencing distance of the development.

- No trees were categorised as **category A high quality with 40 years life potential**.
- Four trees and a group were categorised as **B medium quality with 20 years life potential**.
- Two trees and a group were categorised as **low quality and value with up to 10 years life potential**.
- No trees were categorised as **category U, not realistically retainable**.

The Post Development Work

- The development of a residential property.
- The development of a turning area at the front of the property.
- The development of below ground services within the rear garden.

The Arboricultural Impact Assessment (AIA)

- The landscaping of the front turning area has two mature lime where surface changes have caused detriment to these trees that are now in a raised area.
- The landscaping of the rear garden has resulted in surface changes and heavily compacted soils.
- Below ground services have been installed in the rear garden within the RPA of T6 oak (*Quercus petraea*).
- Boundary side entrance to the rear is lined with piled cement next to neighbouring vegetation.

Table 1 - Summary of BS5837 Categorisation Colours in relation to the tree to be retained and removed, the explanation of this categorisation can be read in Appendix C - BS 5837:2012 Cascade Chart for Tree Quality Assessment

Tree Category	Trees to be retained	Trees to be removed
A	-	-
B	T4, T6, G8	T1, T2
C	T5, G7	T3
U	-	-

Arboricultural Recommendations

- Removal T1 & T2 lime (*Tilia cordata*) from the front area.
- The removal of T3 copper beech (*Fagus sylvatica Purpurea*) from the rear garden.
- Reassessment of all neighbouring trees summer 2025.
- Tree planting to mitigate tree loss.

1.0 Introductions

Instruction

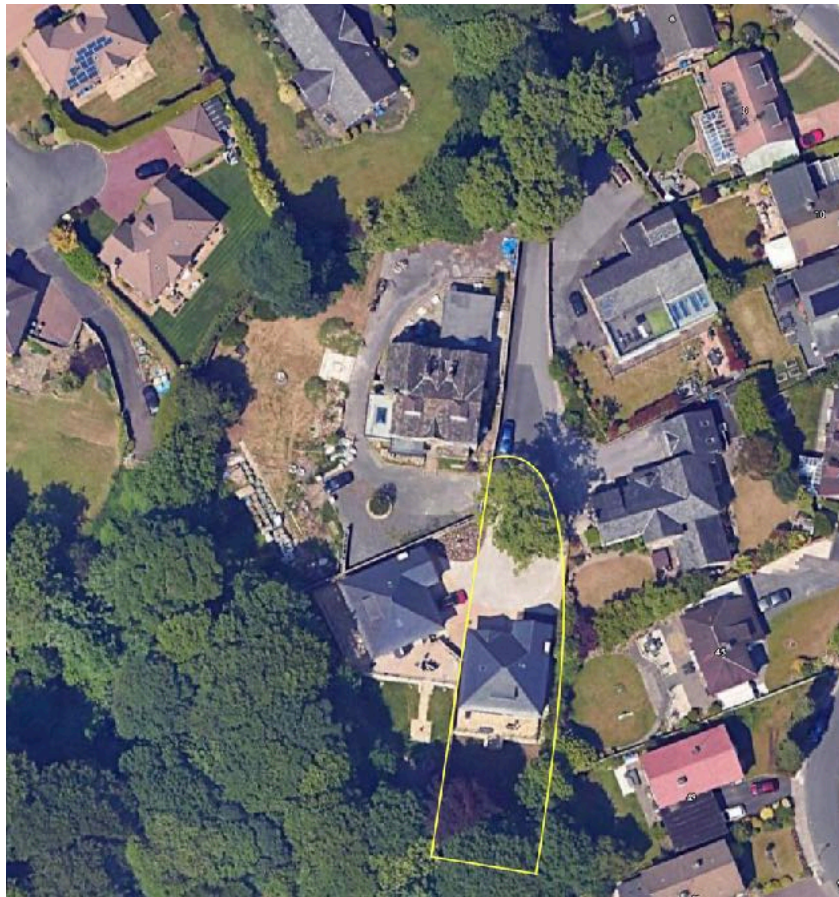
- 1.1 I have been instructed via email by Ben Whiteman to assess the post development of a rear garden area for recreation and a garage extension which may cause detriment to tree health. Information regarding the methods of the construction were communicated from the builder. This post development report will be in accordance with BS 5837 Trees in Relation to design, demolition and construction - recommendations 2012.

Scope

- 1.2 The scope of this instruction has been to:
- Undertake a tree survey to determine the potential impact on trees within influencing distance of the developments.
 - Provide advice and guidance for the potential continuation of the developments.
 - Prepare the required report with regards to the impact of the development on green infrastructure and any future recommendations.
- 1.3 The tree survey was to be conducted in accordance with the guidance provided in BS5837 (2012) *Trees in relation to design, demolition, and construction - Recommendations* ('BS5837').
- 1.4 All plans and reports following the tree survey were also to follow the recommended processes defined in BS5837 and any other industry advice that provides best practice guidance for managing the relationship between trees and construction processes.

Site description

- 1.5 663 Bury Road is located in the leafy residential area of Rochdale. This newly developed housing estate is still undergoing construction with neighbouring properties still to be completed. These houses and their gardens back on to a woodland seen below. There is shared access to the two properties where a raised circular feature at the front (north) houses two mature trees. Access to the rear garden is gained along the eastern boundary.
- 1.5.1 Generally the green infrastructure presents good visual amenity value due to its location, it also creates screening and wildlife benefits.
- 5.5.2 Generally high occupancy targets being residential properties and their associated gardens.



2.0 Tree Survey

Tree Survey

- 2.1 These trees provide good visual amenity value and create screening and privacy for residents, public highways, the elements and neighbouring businesses. Generally the green infrastructure is mostly of low to medium quality and value with limited life potential.
- T1 & T2 lime (*Tilia cordata*) from the front area have good form and vitality, although T1 houses substantial deadwood over the entrance.
 - T3 copper beech (*Fagus sylvatica Purpurea*) in the rear garden has good canopy cover, a large open cavity at base, codominant stem with bark inclusion at 5m and no trunk flare.
 - The lower eastern boundary has changes to the soil profile where tree roots are exposed with trees in neighbouring gardens.
 - The upper eastern boundary has vegetation lining a neighbouring garden with contaminated soil.
 - Changes to the soil profile with woodland trees.
- 2.2 The trees impacted upon by the development are detailed in table 2 below.

Tree Category	Trees to be retained
A	-
B	T1, T2, T4, T6, G8
C	T3, T5, G7
U	-

Table 2 - Summary of BS5837 Categorisation colours in relation to the tree numbers

- 2.3 Due to the size of the trees in question there is generally high occupancy areas around these trees being residential properties and their associated infrastructure.
- N.B. Target areas are places where a tree or tree part could fall and land on a vehicle, structure or a person causing damage or injury or disruption.

Category	Colour	Description
A	Green	Trees of high quality with an estimated remaining life expectancy of at least 40 years
B	Blue	Trees of moderate quality with an estimated remaining life expectancy of at least 20 years
C	Grey	Trees of low quality with an estimated remaining life expectancy of at least 10 years
U	Red	Those trees in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years

Table 3 - Summary of BS5837 Tree Categorisation

General Data Capture

- 2.3 For reference, all individual trees are geo referenced with a Trimble TDC600 and identified with the letter T and associated number on the Tree Schedule and on a plan showing the extent of tree constraints. The stem diameter of the trees on Site was recorded using a rounded down diameter tape, measured at 1.5m above ground level. Measurements were recorded in millimetres, rounded to the nearest 10mm.
- 2.3.1 The height of the subject trees was estimated to the nearest metre.
- 2.3.2 Maximum crown spread of the subject tree was measured from the edge of the trunk to the tips of the live lateral branches taken at four compass points (N-E-S-W) using a Leica Disto digital laser measure. Crown spread measurements were taken in metres.
- 2.2.3 The trees age was estimated from visual indicators (such as tree size and appearance of bark) which is provided as a provisional guide.
- 2.2.4 Hedges are identified with the letter H and number on the associated schedule and plans. Each hedgerow was surveyed recording the species, the maximum height and the average width of the hedge. Any individual trees present within the hedgerow were recorded as an individual tree.
- 2.2.5 If direct access to a tree was not possible, estimations from appropriate vantage points were taken. Any limitations or estimations are presented within the survey limitations section and noted in the associated schedules.

Categorisation

- 2.3 In compliance with Table 1 of BS5837 the trees surveyed have been categorised according to their arboricultural quality and value (non-fiscal) which is summarised below in Table 3.

Quality Assessment

- 2.3.1 A summary of the assessment on the quality of the tree can be seen in table 2.

3.0 Tree Constraints

Above Ground Tree Constraints

- 3.4 The above ground constraints posed by canopy spread are plotted on the Tree Constraints Plan (TCP) as a polygon around the tree, with the extent of the canopy spread in the corresponding BS5837 retention category colour.

Root Protection Areas

- 3.5.1 The Root Protection Areas (RPA) of the trees were calculated in accordance with Section 4.6.1 in BS5837. This is calculated from the measurement of the stem diameter as recorded in the tree schedule attached to this report and is plotted on the TCP. No trees have had their RPA adjusted.
- 3.5.2 The RPA forms the initial Construction Exclusion Zone (CEZ) to protect the trees roots, these have been plotted on the plan by an orange line with the text RPA inscribed.
- 3.5.3 The RPA is initially plotted with the tree in the centre. Where site conditions may influence the shape and size of the RPA (e.g. the presence of roads, buildings or other structures), the shape and size of the RPA can be amended in accordance with Section 4.6.3 in BS5837.
- 3.5.4 The default position should be that no development will take place within the RPA of retained trees. However, where there is an overriding need for construction and associated activity within the RPA of trees, measures should be put in place to protect retained trees from harm while those activities are being carried out.

Soils

- 3.6 BS5837 recommends that a soil assessment be completed by a competent person to inform decisions relating to the RPA, tree protection, new planting design and foundation design. I am not able to provide this assessment as I have no formal qualifications in this area, and professional advice should be taken to provide any detailed reports.
- 3.6.1 However, generic soil data is freely available from online sources such as the Geology of Britain which can provide a broad indication of the underlying geology of a site. The results of a search for this site described as sandy and loamy free draining slightly acidic soil. This is unlikely to produce a shrinkable soil. However, an existing sublayer foundations created an unnatural surface which removed any permeability of the soil profile.
- 3.6.2 The soil type will have an impact on any recommendations for replacement or enhancement planting that may form a part of any landscape strategy for a planning application.

4.0 The Post Development

- 4.1 The post development is for:
- The development of a residential property.
 - The development of a turning area at the front of the property.
 - The development of below ground services within the rear garden.

5.0 Arboricultural Impact Assessment (AMS)

- 5.1 This impact assessment will set out the principal direct and indirect impacts of the proposals on the trees on site and set out suitable mitigation measures for unavoidable tree removals and to allow for the successful retention of significant trees where appropriate.

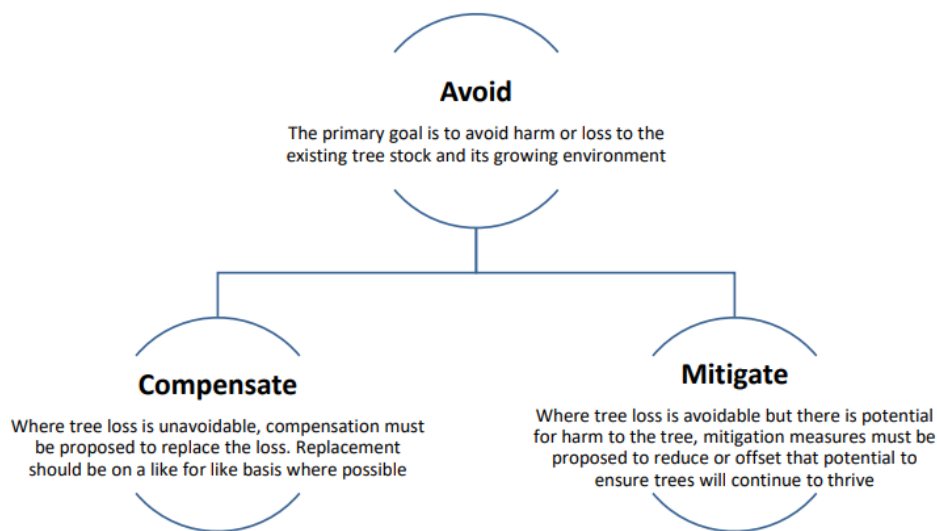
Development can have an adverse impact on trees and other woody vegetation within a site, which can result in:

- I. Immediate tree removal to facilitate the footprint of the development.
- II. Potential future tree loss through the early decline of trees due to soil compaction or damage
- III. Root disturbance and damage within a tree's rooting area
- IV. and iv. Canopy removal or damage due to plant movement.

Best practice guidance proposed by the arboricultural sector seeks to ensure that there is a harmonious relationship between trees and development that will ensure that both trees and structures can be retained in the long term.

Where practical, development should seek to work with the natural environment, and development schemes that might result in harm should follow a mitigation hierarchy to ensure harm is minimised.

To assist the planning decision makers, this scheme should use the following mitigation hierarchy to consider the influence that trees might have on site design while also continuing to make a positive contribution to the site and local character of the area, both during and post development:



The impact of any tree loss is assessed against a criterion in relation to the arboricultural significance of the loss, the detail of which is provided in Table 3. This table is not related to the quality categories provided in BS5837 but has a closer relationship to the sub-categories through assessing the impact that tree loss may have at the Site and its setting in the wider locality. This assessment is also useful in considering the impact of any potential loss against planning policy.

Table 3: Impact Assessment definitions

Scale of Impact	Definition
Major	Total loss or major/substantial alteration to key trees/features of the baseline (pre-development) conditions such that the post development character or composition will be fundamentally changed. This would generally apply to tree(s) that are of exceptional or high quality and condition and their loss would be irreplaceable. This would also include trees that have been categorised as being Ancient or Veteran, trees are rare examples of their species and or trees that offer significant amenity value to the character and setting of the area.
Moderate	Loss or alteration to one or more key trees/features of the baseline conditions such that post development character or composition of the baseline will be materially changed. This would generally apply to tree(s) that are of good quality and condition and make a notable contribution to the setting or character of the locality (visual amenity). This may include trees that would be hard to replace but for which there could be some mitigation over a medium timeframe (20-40 years).
Minor	A minor shift away from baseline conditions. Change arising from the loss/alteration will be discernible/detectable but not material. The underlying character or composition of the baseline condition will be similar to the pre-development circumstances/situation. This would generally apply to tree(s) that are of low quality and condition and/or their loss would have low impact on the locality. These trees would be relatively easy to replace within a short timeframe (10-20 years).
Negligible	Very little change from baseline conditions with any change barely distinguishable. This would generally apply to tree(s) that are of low quality and condition, and/or their loss would barely be noticeable. Any replacement planting would offer an improvement to the setting of the site in a very short time frame (1-10 years)
No Change	There is no change to the baseline conditions to trees from the development proposal.

The impact can be assessed as being either negative, positive or neutral, each of which (for the purpose of this report) are defined as:

- Negative – a negative impact is one where the proposal will result in the loss or degradation of the range or quality of trees on a site, and which will negatively impact the local community.
- Positive – a positive impact is where the proposal will result in enhancements to the range or quality of trees on site (achieved through retention of existing trees and new planting), or an improvement(s) to the growing environment of trees that will result in improvements to the social and cultural setting of the site to the benefit of the local community.
- Neutral – there is no change to the baseline setting of the site in arboricultural terms.

- 5.2 Effects on trees with regards to the development.
 - 5.2.1 Being post development it is not always possible to assess the impact on trees. However, it was noted that foundations for the wall had little or no protection from building materials as there was no membrane visible
 - 5.2.2 Dean advised myself that there was an existing hardstanding surface within the far rear of the garden which was excavated and resurfaced.
 - 5.2.3 The landscaping of hard surfaces at the rear of the garden has incurred onto the RPA's of two trees which have experienced the severing of small surface roots and have not had any protection from the use of building materials such as cement. However, 20% of T1 Turkey oaks RPA has now been covered by 20% hard surface which is the recommended limit as stated in BS5837 - 2012. It should be noted that this was already mostly covered with a hard surface for approximately 30years.
 - 5.2.4 A temporary track lining the boundaries of the proposed development have the potential for the development of soil compaction.
- 5.3 Potential incompatibilities between the layout and the trees proposed for retention.
 - 5.3.1 No installations of services have been advised.
- 5.4 Infrastructure requirements – highway visibility, lighting, CCTV, services etc
 - 5.4.1 No services or other infrastructure requirements have been advised.
- 5.5 Mitigating tree loss/new planting
 - 5.5.1 No trees have been proposed for removal on the grounds of health and safety.
- 5.6 Proximity of trees to the proposal
 - 5.6.1 The impact of trees with the development and vice versa and allowing for future growth have all been considered with the landscaping and development. Tree size, quality and longevity, future growth, light/shading, leaf and fruit nuisance etc have the potential to be an issue. This applies to trees proximity to the development of the extension where the proposed development falls close to their RPA's.
 - 5.6.2 The current landscaping has no tree protection and trees RPA's have been exposed to damage.
 - 5.6.4 Overall the processes and construction are likely to have a detrimental effect upon the health of the retained trees with regards to the development and landscaping of the area. However, direct damage is minimal and there is no immediate risk of tree failure.

BS5837 Categorisation			
	A high quality 40 years plus life potential	B moderate quality up to 20 years life potential	C low quality Up to 10 years life potential
Remove	-	T1, T2	T3
Replace	-	T1, T2	T3
Regular assessments	-	T4, T6, G8	T3, T5, G7

Table 4 - Summary of recommendations

6.0 Arboricultural Tree Constraints

- 6.1 There were constraints with T1 & T2 lime (*Tilia cordata*) whose RPA's have been breached by the development of level surfaces for vehicles.
- 6.2 The development of the below ground services in the rear garden incurred upon T6 oak beech (*Quercus patraea*).
- 6.3 The levelling of the rear garden have covered the buttress roots of T3 copper beech (*Fagus sylvatica Purpurea*), severed roots of T6 oak (*Quercus petrel*) and increased soil levels of the woodland to the rear.
- 6.4 Eastern boundary footpath development has incurred onto the roots of neighbouring trees and shrubs with cement lining the boundary.

7.0 Tree Protection Requirements

- 7.1 The following is required:
 - Regular inspections.
 - Allow for continuation of tree health.

8.0 Tree Protection Plan (TPP)

- 8.1 Tree Protection Plan (TPP) to identify:
 - Trees to be retained as seen in Drawing 1 - A Plan of the Tree Constraints.
 - Removal of soil compaction.
 - Replace soil levels around the woodland to the rear.

8.2 Construction Exclusion Zone (CEZ)

- 8.2.1 Any works undertaken within a CEZ should have been performed under arboricultural supervision and with hand tools only.

8.4 Tree Protection

- 8.4.1 The landscaping of the hard surfaces outside of the development should have been protected with a non-permeable.
- 8.4.2 Temporary ground protection is required where development falls next to an RPA. This shall prevent soil compaction and contamination and allow for extended work space around development. Protective fencing shall rest upon this creating and CEZ.

<https://www.ground-guards.co.uk/sectors/tree-root-protection/mu2-3/>

TREE ROOT PROTECTION METHOD

GroundGuards trackway mat systems are frequently used on construction sites to protect the ground from erosion and damage by construction vehicles. Where a temporary roadway must pass near to trees, the following extra precautions must be taken in order to provide cushioning for the ground under the tree canopy:

1. Edge rails of 200 x 50mm sawn timber should be installed where the trackway will pass under the tree canopy. These should be staked on either side of the trackway using 50 x 50 x 500mm timber stakes at 1.5m spacings.
2. A layer of geotextile membrane should be laid to cover at least the area under the tree canopy and preferably under the whole of the trackway.
3. A pad of trackway mats should be laid on top of the geotextile membrane, between the timber rails.
4. A 150mm deep layer of wood chipping should be laid over the mats
5. The trackway can then be laid so that it rises over the wood chippings as it passes under the tree canopy.

50x50x500 timber stakes
200x50 timber rails
Geotextile Membrane
Base layer of trackway mats
Wood chippings
Upper layer of trackway mats



8.5 Hard Surfaces

8.5.1 Working within Hard surfaces

- 8.5.1 Where hard surfacing within an RPA are to be excavated, then direct onsite arboricultural supervision is required. Its removal should be brought back away from trees and any exposed RPA's and where relevant they must be protected with a non permeable membrane.
- 8.5.2 There must be no compaction of soil within an RPA. However, the wearing course will be broken up using a hand held pneumatic breaker, hand tools and wheelbarrows to break up and remove the surfacing. Where it is necessary to remove the sub base this is to be undertaken using a fork to loosen the material and moved using shovels and wheelbarrows.
- 8.5.3 In some situations and at the discretion of the appointed arborist it may be possible to use an excavator using a hydraulic breaker and a suitably sized toothless grading bucket. If an excavator is to be used it must be situated outside of the RPA's, on top of the hard surfacing working away from the RPA's or alternatively using Ground Protection.
- 8.5.4 Whichever system is used there is to be no disturbance of the soil beneath. If roots are found they are to be covered overlaid with a damp hessian cloth and a layer of either sharp sand, wood chip or top soil applied as soon as practically possible.

Landscaping of Surfaces to Install Infrastructure

- 8.5.5 The installation of indicative drainage requires a no dig methodology where hand tools only are to be used. The excavation of surfaces prior to the commencement of the development shall be supervised by the appointed arboricultural consultant.

- 8.5.6 8.7 states the installation procedure.

8.5.7 Landscaping

- 8.5.8 The landscaping around the hard surfacing requires a no dig methodology where hand tools only are to be used. The excavation of surfaces with T5 & T6 prior to the commencement of the proposed development shall be supervised by the appointed arboricultural consultant.

Movement of Materials

- 8.5.9 Where egress of the materials passes over the RPA's of retained trees shall be protected with Ground protection. Where a permeable RPA is required for movement then a Ground Compaction is required. This should remain in place for the entirety of the construction.

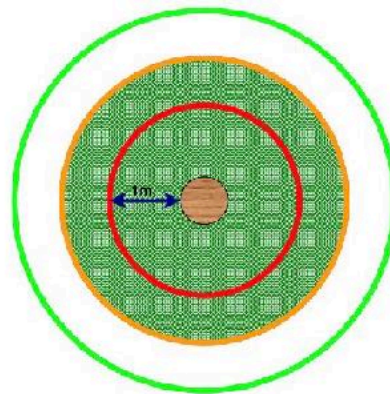
8.6 Installation of Underground Service's

- 8.6.1 With a RPA of retained trees needing to be developed then no roots greater than 25mm shall be damaged. The use of an air spade to excavate the RPA required for services shall be performed under arboricultural supervision.

- 8.6.2 Please refer to this document with guidance NJUG Publication: Volume 4: Issue 2: 16/11/2007:

<http://streetworks.org.uk/wp-content/uploads/V4-Trees-Issue-2-16-11-2007.pdf>

<http://streetworks.org.uk/wp-content/uploads/2016/09/V4-Trees-Issue-2-Operatives-Handout.pdf>



TREE PROTECTION ZONE

Key to Diagram



Trunk of Tree



Spread of canopy or branches



PROHIBITED ZONE – 1m from trunk. Excavations of any kind must not be undertaken within this zone unless full consultation with Local Authority Tree Officer is undertaken. Materials, plant and spoil must not be stored within this zone.



PRECAUTIONARY ZONE – 4 x tree circumference. Where excavations must be undertaken within this zone the use of mechanical excavation plant should be prohibited. Precautions should be undertaken to protect any exposed roots. Materials, plant and spoil should not be stored within this zone. Consult with Local Authority Tree Officer if in any doubt.



PERMITTED ZONE – outside of precautionary zone. Excavation works may be undertaken within this zone however caution must be applied and the use of mechanical plant limited. Any exposed roots should be protected.

Existing Underground Services

8.6.3 Existing services within the site should be retained where ever possible. Where existing services within RPAs require upgrading, the upmost care must be taken to minimise disturbance, and where feasible trenchless techniques are to be employed, and only where necessary should open excavations be considered.

8.6.4 There are three main types of trenches techniques, these include guided and unguided boring and pipe replacement by lining or bursting. These allow for the installation, maintenance or renewal of underground services without disturbance of soil in which roots are likely to be growing. Starting and receiving pits for the boring machinery are to be located outside of the RPA's of any retained trees, with the bore depth being maintained at a minimum depth of 600mm below the existing ground level.

8.7 Additional Precautions

8.7.1 No storage of materials, lighting of fires will take place within any construction Exclusion Zone. No mixing or storage of materials will take place up a slope where they may leak into a Construction Exclusion Zone.

8.7.2 No fires will be lit within 20 metres of any tree stem and will take into account fire size and wind direction so that no flames come within 5m of any foliage.

8.7.3 No notice boards, cables or other services will be attached to any tree.

8.7.4 Materials which may contaminate the soil will not be discharged within 10m of any tree stem. When undertaking the mixing of materials it is essential that any slope of the ground does not allow contaminants to run towards a tree root area.

8.8 Responsibilities

- 8.8.1 It will be the responsibility of the main contractor to ensure that the planning conditions attached to planning consent are adhered to at all times and that a monitoring regime in regards to tree protection is adopted on site. The main contractor will be responsible for contacting the Local Planning Authority at any time issues are raised related to the trees on site. If at any time pruning works are required permission must be sought from the Local Planning Authority first and then carried out in accordance with BS 3998 Recommendations for Tree Works 2010.
- 8.8.2 The main contractor will ensure the build sequence is appropriate to ensure that no damage occurs to the trees during the construction processes. Protective fences will remain in position until completion of ALL construction works on the site. The fencing and signs must be maintained in position at all times and checked on a regular basis by an on site person designated that responsibility.
- 8.8.3 The main contractor will be responsible for ensuring sub-contractors do not carry out any process or operation that is likely to adversely impact upon any tree on site.

9.0 Conclusion

- 9.1 The landscaping and construction has caused direct and indirect to trees. It would appear that no tree protection according to British Standards BS 5837, Trees in relation to design, demolition and construction – Recommendation 2012 has been respected.

Direct damage

- 9.1.1 Direct damage would be from the severing of roots as can be seen with T1 & T2 lime (*Tilia cordata*) whose RPA's have been breached by the development of a level surfaces for vehicles. There are two possibilities; either changes to the soil levels around their RPA's which would suffocate the trees roots or the severance of tree roots to allow for safe levels for vehicles, the latter is highly probably the likely impact. This can cause tree instability and allow an entry point for pathogens.
- 9.1.2 The installation of below ground services was noted with T6 oak (*Quercus pate*) where the services incur on its RPA. This could have resulted in the severance of tree roots, soil compaction and contamination.

Indirect damage

- 9.1.3 Indirect damage maybe in the form of soil compaction and contamination from the landscaping of the rear garden. Below ground damage to tree roots may take several years to manifest themselves. However, signs of damage could arise a lot earlier in the canopy or through the trees fruiting bodies around the trees rooting area. The lack of trunk flare on T3 copper beech (*Fagus sylvatica Purpurea*) is quite obvious, as were the changes to the soil levels around the rear garden.
- 9.1.4 Soil contamination can be seen with the neighbouring group of trees where cement has been used to support and create a level walkway, without any signs of a protective membrane.
- 9.2 With the installation of the wall foundations there is the potential for direct damage to the tree roots of T1 Turkey oak (*Quercus cerris*) as this appears to have been a permeable surface for roots. Communication with Peter described the method of hand tools being used to excavate the soil profile to a depth of 350 mm and a width of 450 mm where no roots were observed. An existing concrete structure was located beneath the garden which may have created an inhospitable environment for tree roots.

The Arboricultural Impact Assessment

- 9.8 Whilst the design appears to have incurred upon tree roots greater than 20% which is what BS5837 2012 states as a limit to root coverage. The below ground history with hard surfaces will have greatly reduced the potential damage due to it being an inhospitable area for tree roots. There is a high probability that tree roots succumbing to direct and/or indirect damaged with substantial evidence for this.

10.0 Recommendations

- 10.1 It is imperative that the remaining neighbouring trees are fully assessed by summer 2025 for symptoms of stress related issues that may have been impacted upon because of the landscaping development.
- 10.2 Tree removal as stated in Appendix A - Tree Schedule.
- 10.3 Returning of soil levels to the rear garden with regards the neighbouring woodland.
- 10.4 If the tree remains healthy in the next 3 to 5 years then the development of the landscaped area should be modified to accommodate its growth.

Signed



Date 6th November 2024

Consultant - Andrew McLoughlin MArborA

Treestyle Consultancy Ltd

Tel - 07872064313

info@treestyleconsultancy.co.uk



11.0 Caveats and Limitations

- 11.1 While all reasonable efforts have been made to identify the condition and quality of the trees on site, the statements made in this report and schedules do not take into account the effects of extreme weather events, vandalism or accidents, or changes to the site that may affect trees that have taken place since the date of the survey.
- 11.2 I can confirm that the survey has been undertaken in accordance with industry best practice recommendations and guidance, but no warranty is provided in relation to changes to the site that occur after the date of the survey that may have an impact on the tree stock present at the time of the survey.
- 11.3 Unless stated differently in captions, all photographs used in this report have been taken by the author at the time of the site visit.
- 11.4 The comments and observations made within this report will cease to be valid either within two years of the date of the survey (unless specifically stated elsewhere within the report), or when site conditions change or any works to trees take place that have not been specified within this report, whichever is sooner.
- 11.5 The survey has been undertaken with the benefit of a mapping supplied by The Ordnance Survey. The location of all trees and groups detailed in this report have been taken from the topographical survey and no warranty is given as to the accuracy of this data.
- 11.6 This survey has been limited to identifying arboricultural features within the site. It does not include any ecological assessment or landscape appraisal of trees, groups, woodlands or hedges beyond the scope of BS5837.
- 11.7 Although I am occasionally involved in landscape, ecological and planning issues, I have no formal qualifications in these areas and any comments made in this report to such matters are limited to the general context in view of my familiarity through my day-to-day work, and professional advice should be obtained on these matters where required.

12.0 References

Barlow JF & Harrison G. 1999. Shade By Trees, Arboricultural Practice Note 5, AAIS, Farnham, Surrey.

British Standards Institute. 2012. Trees in Relation to Design, Demolition and Construction - Recommendations BS 5837: 2012 HMSO, London.

Centre for Ecology & Hydrology (CEH). 2006. Tree Roots in the Built Environment, HMSO, London.

Helliwell R (1980) Provision for New Trees; Landscape Design; July/August issue

International Society of Arboriculture (ISA). 1994. The Landscape Below Ground. ISA, Champaign, Illinois. USA.

Lonsdale D 1999. Research for Amenity Trees No.7: Principles of Tree Hazard Assessment and Management, HMSO, London.

Matheny, N; Clark, J. R. 1998. Trees and Development: A Technical Guide to Preservation of Trees during Land Development. ISA, Champaign, Illinois. USA.

Mattheck C. & Breloer H. 1994. Research for Amenity Trees No.2: The Body Language of Trees, HMSO, London.

British Standards 3998 Tree Work Recommendations 2010

British Standards BS 5837, Trees in relation to design, demolition and construction – Recommendation 2012

British Standards 42020 Biodiversity - Code of Practice for Planning and Development 2013

British Standards 8545 Trees: from nursery to independence in the landscape - Recommendations 2014

International Society of Arboriculture Best Management Practice Tree Risk Assessment 2013

NTSG - Common Sense Risk Management of Trees

Principles of Tree Hazard Analysis and Management - D Lonsdale No 7

13.0 About the Author

- 13.1 Treestyle Consultancy's principle assessor is Andrew McLoughlin, the Managing Director of Treestyle Consultancy Ltd since 2001. I have a MARborA in Arboriculture. Qualified Arboriculturalist since 1998. I am also a qualified teacher and a LANTRA instructor and assessor. ISA Tree Risk Assessment Qualification, Quantified Tree Risk Assessor. Ancient and Veteran Tree Expert. Up to date Curriculum Vitae (which include records of up to date Continued Professional Development - CPD) can be provided upon request.

14.0 Site Photography



Top left showing proximity of T1 T2 at the front of the property where root severance is highly likely

Canopy decline can be seen in the lower picture





Top left showing T3 at the rear of the property where the lack of trunk flare suggests soil mounding

Cement can be seen lining the boundary of neighbouring trees



BS5837:2012 Tree Survey

Treestyle Consultancy Ltd

Client: RPS Design Group Ltd
 Project: 663 Bury Road, Rochdale
 Survey Date: 10/10/2024
 Surveyor: Andrew McLoughlin



Jepps Lane
 Barton
 Preston
 Lancashire
 PR3 5AQ
 Mobile: 07872064313

Tree and Tag No Species		Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations			Cat ERC
			No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment			
G7											Estimated Measurements			
A Group	6	0		N	2	SM	A: 0	Fair	C: Fair	No action :: Unspecified			C.2	
- -				E	2		R: 0		S: Fair	A group of neighbouring ash with initial stages of ash dieback			<10 yrs	
				S	2				B: Fair	Hymenocyphus fraxineus				
				W	2									
G8											Estimated Measurements			
A Group	6	0		N	12	SM	A: 0		C: Good	No action :: Unspecified			B.2	
- -				E	2		R: 0		S:	A group of neighbouring holly, hawthorn, laurel, cotoneaster next to development and cement			10 to 20 yrs	
				S	2				B:					
				W	2									
T1														
Common Lime	18	1	550	N	1	5	M	A: 136.9	Fair	C: Poor	Fell :: Fell and replant space			B.1
<i>Tilia europaea</i>				E	2	5		R: 6.6		S: Ivy	<i>Roots have almost certainly been damaged to a level that poses significant risk to life</i>			10 to 20 yrs
				S	3	5				B: Poor				
				W	6	5								
Great feature tree within front driveway with a below average canopy and substantial deadwood on eastern canopy. Located within raised area which is unnatural, either raised soil levels or probably root severance to establish new surfaces														
</														

Tree and Tag No Species		Hght (m)	Stems		Crown		Age	RP A (m²) R (m)	Phys Condition	Structural Condition	Preliminary Recommendations			Cat ERC
			No	Ø (mm)	Spread (m)	Clear (m)					Survey Comment			
T2														
Common Lime <i>Tilia europaea</i>		19	1	600	N E S W	1 7 6 4	5 3 3 4	M A: 162.9 R: 7.2	Fair	C: Good S: Ivy B: Poor	Fell :: Fell and replant space <i>Roots have almost certainly been damaged to a level that poses significant risk to life</i> Great feature tree within front driveway with a below average canopy and substantial deadwood on eastern canopy. Located within raised area which is unnatural, either raised soil levels or probably root severance to establish new surfaces			B.1 10 to 20 yrs
T3														
Common Beech <i>Fagus sylvatica</i>		22	1	475	N E S W	5 6 6 4	4 4 4 4	M A: 102.1 R: 5.7	Poor	C: Good S: Fair B: Poor	Fell :: Fell and replant space <i>Roots have almost certainly been damaged to a level that poses significant risk to life</i> Great feature tree within rear garden with a large cavity at 1.5m and a codominant stem with bark inclusion at 6m. Suspected raised soil levels due to a lack of trunk flare surrounded by a heavily compacted soil. Suspected high amounts of root damage due to the morphology of beeches roots will have caused irreversible stress.			C.1 10 to 20 yrs
T4												Estimated Measurements		
Sycamore <i>Acer pseudoplatanus</i>		22	1	600	N E S W	7 6 5 5	4 4 4 4	M A: 162.9 R: 7.2	Fair	C: Good S: Good B: Fair	Further inspection :: Of roots Woodland tree beyond garden with a suspected raised soil levels due to a lack of trunk flare surrounded by a heavily compacted soil			B.1 10 to 20 yrs
T5												Estimated Measurements		
Witch Hazel <i>Hamamelis virginiana</i>		5	1	300	N E S W	1 1 4 1	0 0 0 0	M A: 40.7 R: 3.59	Fair	C: Fair S: Poor B: Fair	No action :: Unspecified Neighbouring tree beyond garden with pruning history surrounded by a heavily compacted soil			C.1 10 to 20 yrs
T6												Estimated Measurements		
Sessile Oak <i>Quercus petraea</i>		18	1	550	N E S W	6 6 5 4	5 5 5 5	M A: 136.9 R: 6.6	Fair	C: Good S: Good B: Fair	No action :: Unspecified Neighbouring tree beyond garden on a raised profile next to heavily compacted soil. Below ground services have impacted on the trees roots			B.1 20 to 40 yrs
Age Classifications:		N Y SM	Newly planted Young Semi-mature	EM M OM	Early Mature Mature Over Mature	Condition:		C S B	Crown Stem Basal area	Stems:		Ø Diameter (Eq) Equivalent stem diameter using BS5837:2012 definition	ERC: Estimated Remaining Contributio	

Appendix B - Glossary

Abbreviation	Term	Explanation
DBH	Diameter at Breast Height	The diameter of the tree trunk in question, 'breast height' is taken to be 1.3 metres above ground level. Multi-stem trees have their stems measured separately and indicated as so in the tree schedule. Trees with abnormal growths, branch unions or other obstructions at 1.3 m will have their measurements taken immediately below said obstructions.
RPA	Root Protection Area	The area in metres squared of the potential underground rooting constraints
AMS	Arboricultural Method Statement	This dictates the procedure for works to be carried out around the protected trees
RPA	Root Protection Area	Circular area surrounding tree with a radius based on the DBH of the tree, as calculated in BS 5837:2012. RPA Radius = 12 x DBH
AIA	Arboricultural Impact Assessment	What will the impact be on the trees with the proposed development
VTa	Visual Tree Assessment	A system of tree inspection devised by Claus Mattheck using visual signs to read the body language of trees & aid with the diagnosis of potential defects.
TPP	Tree Protection Plan	This describes the process on how the work is to be carried out around the trees
BS5837 2012	British Standards	British Standard 5837:2012 <i>Trees in relation to design, demolition & construction - Recommendations.</i>
	Codominant stem	Two stems on a tree which can suggest a weakened union
	V union with bark inclusion	Usually with a codominant stem, as above but with up to an additional 42% weak union
Y	Young	Tree which has not yet established a significant rooting structure in the ground & has not developed a significant branching structure - its form is largely 'whip' like in nature & it could normally be easily transplanted or replaced.
EM	Early Mature	Tree which has established a significant rooting structure & has developed a noticeable internal scaffold structure, it differs from a mature version of its species only in size but not in relative proportions of its structure. Trees in this age class will still be developing significantly in height & spread.
M	Mature	Tree which has established a significant root-plate & which is over 50% of the way through its usual life expectancy. Trees in this age class will still be developing significantly in spread but less significantly in height.
OM	Over Mature	Tree which has fully established & will no longer be able to continue increasing in size due to its age, it may be showing signs of decline such as localised dieback but does not need to do so by definition. However it should be expected that signs of structural deterioration will soon become apparent.
V	Veteran	Tree which is showing veteran tree characteristics such as very significant crown retrenchment, extensive internal cavitation & possess significant cultural, ecological &/or historical value. Size is a common indicator of these characteristics but is not an essential requirement, for example, ancient coppices may possess veteran tree characteristics but may have a stunted form. Age is a stronger indicator but again not essential as veteran characteristics can be encouraged in younger trees.
-	Minor Deadwood	Deadwood under 50 mm in diameter
-	Major Deadwood	Deadwood which is equal to or greater than 50 mm in diameter
-	Retrenchment	Retrenchment: progressive reduction in the size of the crown of an old tree, by means of the dieback or breakage of twigs and small branches, accompanied by the enhanced development of the lower or inner parts of the crown.

Appendix C: BS 5837:2012 Cascade Chart for Tree Quality Assessment

Table 1 Cascade chart for tree quality assessment				ID on plan	
Category and definition		Criteria (including subcategories where appropriate)			
Trees unsuitable for retention (see Note)					
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.		- Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other U category trees i.e. where, for whatever reasons, the loss of companion shelter cannot be mitigated by pruning) - Trees that are dead or are showing signs of significant, immediate and irreversible overall decline - Trees infected with pathogens or significance to health and/or safety of other trees nearby (e.g. Dutch elm disease, or very low quality trees suppressing adjacent trees of better quality) <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i>			RED
1 Mainly arboricultural values		2 Mainly landscape values	3 Mainly cultural values, inc. conservation		
Trees to be considered for retention					
Category A Those of a high quality with an estimated remaining life expectancy of at least 40 years		Trees that are particularly good examples of their species, especially if rare or unusual, or those that are essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	GREEN
Category B Those of moderate quality with an estimated remaining life expectancy of at least 20 years		Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	BLUE
Category C Those of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm		Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/ or trees offering low or only temporary/ transient landscape benefits	Trees with no material conservation or other cultural value	GREY

Treestyle Consultancy Ltd

Jepps Lane, Barton, Preston PR3 5AQ

info@treestyleconsultancy.co.uk

SITE;

663 Bury Road, Rochdale

SCALE :

1 : 750

@ A3

DATE :

07/11/2024

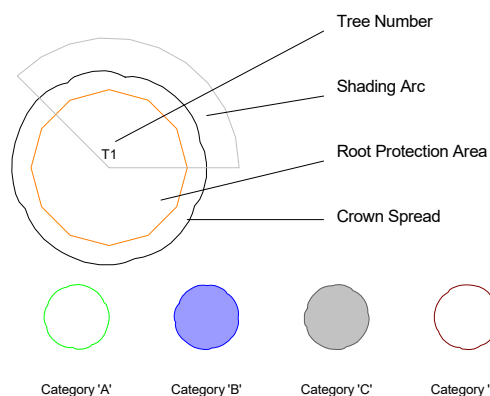
N



MAP FILENAME:

A Plan of the Tree Constraints

Map data shown may contain Ordnance Survey © products supplied by
Pear Technology Services Ltd; Email: info@peartechnology.co.uk
© Crown Copyright and database rights from date shown above
Ordnance Survey © licence number 100023148



Cat A = 40 years plus

Cat B = upto 20 years

Cat C = upto 10 years

Cat U = Not realistically retainable

The Tree Survey recorded six individual trees and two groups of vegetation within influencing distance of the development.

No trees were categorised as category A high quality with 40 years life potential.
Four trees and a group were categorised as B medium quality with 20 years life potential.

Two trees and a group were categorised as low quality and value with up to 10 years life potential.
No trees were categorised as category U, not realistically retainable

The Post Development Work

The development of a residential property.
The development of a turning area at the front of the property.
The development of below ground services within the rear garden.

Below ground services

The Arboricultural Impact Assessment (AIA)

The landscaping of the front turning area has two mature lime where surface changes have caused detriment to these trees that are now in a raised area.

The development has resulted in surface changes to the rear garden which is also now heavily compacted soils.

Below ground services have been installed in the rear garden within the RPA of a copper beech (*Fagus sylvatica Purpurea*). Boundary side entrance to the rear is lined with piled cement next to neighbouring vegetation.

Arboricultural Recommendations

Removal T1 & T2 lime (*Tilia cordata*) from the front area.

The removal of T3 copper beech (*Fagus sylvatica Purpurea*) from the rear garden. Reassessment of all neighbouring trees summer 2025.

Tree planting to mitigate tree loss.