

BS 5837:2012 Arboricultural Report: Tree Constraints Plan & Arboricultural Impact Assessment

Date of Inspection

3rd November 2021

Site

Land adjacent to A4301 Waterfold Lane
Heywood BL9 7JY

Client

Adam Czarnecki of
Earth Environmental & Geotechnical Ltd

Client Address

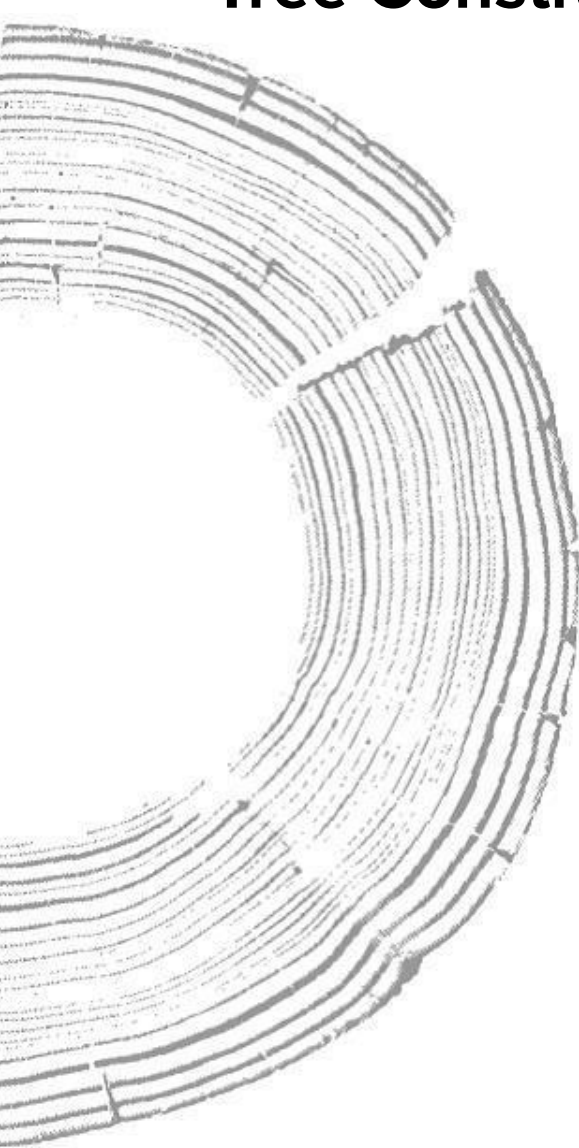
Houldsworth Mill Business & Arts Centre
Houldsworth Street
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FRH Ref

frh162021, amended version: frh602022

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1. Introduction

- 1.1. This report is required for the **Land adjacent to A4301 Waterfold Lane, Heywood BL9 7JY** to provide detailed, independent, arboricultural advice on the trees present, in the context of potential development.
- 1.2. The report will include a tree survey, undertaken in accordance with British Standard 5837:2012 Trees in relation to design, demolition & construction – Recommendations, and an appraisal of the trees located within the site boundaries and any tree/s outside of the boundary which are likely to be affected by the proposed development.
- 1.3. Where necessary, this report will outline any tree works which are required within the current context of the site. It will also grade the trees in accordance with the British Standard; which will guide the design in terms of which trees should be retained and which trees could be removed.
- 1.4. Under the instruction from **Adam Czarnecki** of **Earth Environmental & Geotechnical Ltd**, **FRH Consultancy** are instructed to survey the site and to prepare a detailed report.
- 1.5. For this purpose, a plan of the site was provided in a dwg format (drawing ref: **M21-13-Topo**). This forms the basis of the tree constraints plan, which can be found at **Appendix 2**. The topographical survey, along with all other documents supplied to **FRH Consultancy**, is assumed to be correct. No checking of such documents will be undertaken and **FRH Consultancy** cannot be held responsible for incorrect data supplied by other parties.

2. Data Collection

- 2.1. The assessment was carried out on the **3rd November 2021** by **Paul Hodgson** of **FRH Consultancy**. The inspection was carried out at ground level using a visual assessment of the tree canopy, stem and basal area. No digging or drilling was carried out on this occasion.
- 2.2. The measurements were collected using the following instruments: clinometers for tree height, stem diameter tapes for diameter (measured at 1.5m above ground level) and electronic distometers for crown spread. Where access was limited or not achievable, measurements have been estimated.

- 2.3. Preliminary recommendations are given with a view to the long-term management of sustainable tree cover and to uphold the interests of health and safety. Therefore, to assist with the management recommendations the following colours denote the priority of works: **Red = works to be completed within 1 month**, **Amber = works to be completed within 6 months** & **Green = works to be completed within 12 months**.
- 2.4. Please see the tree schedule findings at **Appendix 1** and the tree locations at **Appendix 2**.

2.5. Protection Status

- 2.5.1. A Tree Preservation Order (TPO) and conservation area check was carried out on the **2nd November 2021** with **Rochdale Borough Council** via email. It was found that no TPO was in place nor was there a conservation area present and therefore, any recommended tree works can proceed without the local planning authority's permission.

3. Site Description

3.1. Land Use

- 3.1.1. At present, the land is not in use. However, there is evidence of existing infrastructure on the ground with sections of cobble paths throughout now covered with vegetation.

3.2. Topography

- 3.2.1. The site is generally level with an upward slope towards the west where the tree line is situated adjacent to the M66.

3.3. Treescape & Visual Amenity

- 3.3.1. The tree line to the west provides high amenity, a screen between the M66 and the adjacent land and habitat for the local wildlife. The areas to the north and west are residential with tree cover and green space. The area to the east and south is mainly agricultural land with little tree cover.

3.4. Age Class

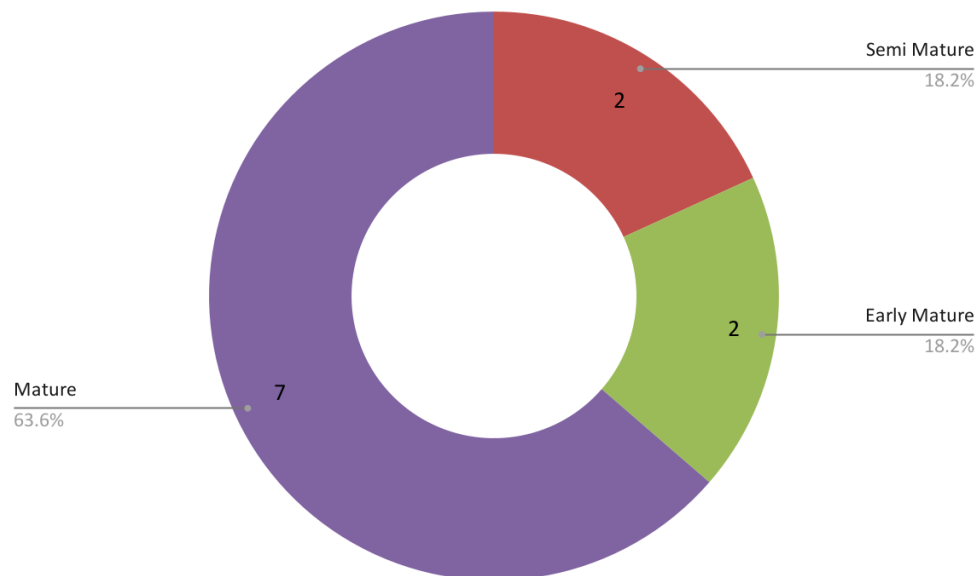


Figure 1: The age class of trees found at site, including trees which may be affected by the proposed development.

3.5. Species List

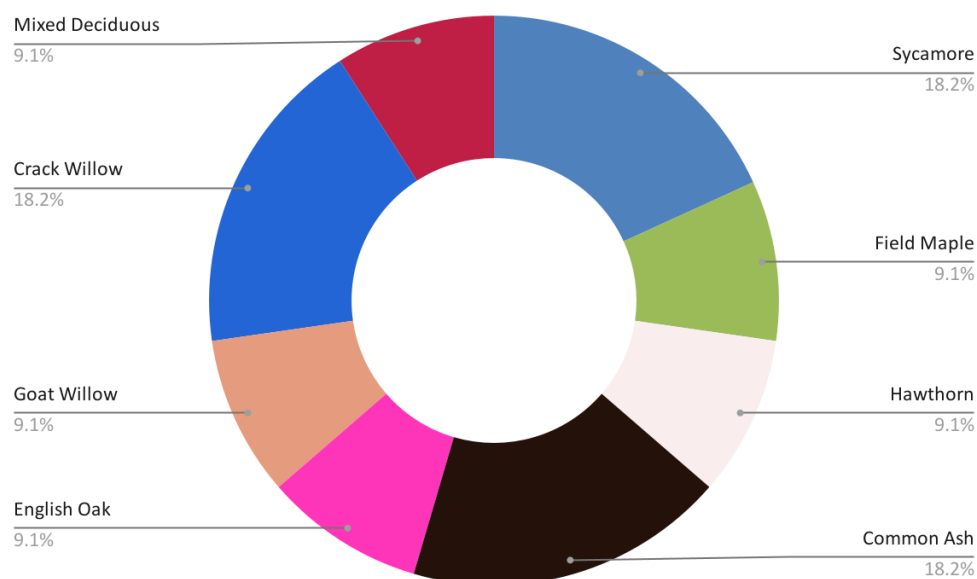


Figure 2: The species quantities found at site, including trees which may be affected by the proposed development.

4. Discussion

4.1. The survey revealed the following findings:

Table 1: Quantities for Tree Retention Categories.

Retention Category	Meaning	ID	Count	%
A	High Quality & Value	G4	1	9%
B	Moderate Quality & Value	T1 T5 T7 T8 T9 H11	6	55%
C	Low Quality & Value	T2 G3 T6 T10	4	36%
U	Very Low Quality (Removal advised)	NONE	0	0%

4.2. Within the survey, tree works have been identified for reasons of public safety, to ensure the long-term health of the trees or for arboricultural best practices. Such recommendations have been made without regard to any projected layout and should be undertaken irrespective of development.

4.3. Tree Management Recommendations

- 4.3.1. No tree works are required at present. However, **G4, T5, T6, T7, T8** and **T9** are recommended for monitoring on a biennial basis due to their proximity to the M66.
- 4.3.2. Those trees which overhang public footpaths or public highways shall require future maintenance in order to maintain clearance heights for vehicular or pedestrian traffic. These heights should be 5.6m above a road and 2.5m above a footpath.
- 4.3.3. In addition, all trees to be retained within the site should be re-inspected on a regular basis, in the interests of risk management.

5. Arboricultural Impact Assessment

5.1. Proposed Development

- 5.1.1. The proposed development consists of 2 blocks of residential apartments, 3 storeys in height and 36 apartments in total with gardens, parking at the front and access roads adjoining Waterfold Lane at the same point.
- 5.1.2. Drawing ref: **M21-13-08 Rev 01 Site proposals**, amended plans have been supplied by the client. This plan can be found at **Appendix 3** and is the basis for which this AIA has been prepared.
- 5.1.3. All tree works required to accommodate the proposals are included at **Appendix 1**, which lists all works recommended during the initial survey and those required for the development.

5.2. Tree Removals & Pruning for Development

- 5.2.1. A single section of **H11** is required to be removed in order to facilitate the widening of Waterfold Lane to increase visibility and access for the proposed junction. Please see **Appendix 3**.
- 5.2.2. Whilst the removal of vegetation will be of detriment to the arboricultural values of the site, it is recognised that the retention of vegetation is only one consideration in the design process. The loss of vegetation must be weighed against the benefits of the proposed development in the usual manner.
- 5.2.3. The removal of vegetation for development can often be mitigated (either partially or entirely) by the replacement of suitable specimens within a tailored **Tree Planting Scheme**. Whilst not always necessary, the planting of appropriate new tree species can greatly improve the aesthetic value of the surrounding area and may be conditioned in the usual manner.

5.3. Implications for Retained Trees

- 5.3.1. **Protective Barrier:** In order to ensure the effective protection of retained trees during development, a protective barrier will be installed, in accordance with BS 5837: 2012 and may comprise of protective fencing and ground protection. This will be the first job on site following the tree removal and pruning works. The fencing should ideally be positioned to protect the entire Root Protection Area (RPA) of the retained trees, in order to create a Construction Exclusion Zone (CEZ).
- 5.3.2. Routes for pedestrian and site traffic will be located outside, and diverted away from the RPAs of the retained trees wherever possible. Where this is not practicable, temporary protective surfaces (ground protection) must be laid over the exposed RPA's to reduce any soil compaction. The ground protection must therefore distribute the weight of site vehicles, machinery or pedestrians whilst allowing moisture to reach the tree rooting area beneath. Such surfaces must be constructed in accordance with BS 5837: 2012.
- 5.3.3. Where work is required within the RPA of a tree which is to be retained, specialist measures must be adopted during the construction phase to avoid ground compaction and minimise root damage or deemed acceptable to root prune. If applicable, such areas are highlighted in blue on the arboricultural impact plan at **Appendix 3** and are addressed in the following sections.
- 5.3.4. **Access/Construction of Hard Surfaces:** No proposed hard surfaces incur the RPAs and therefore, no mitigation measures are required.
- 5.3.5. **Demolition:** In this case, no significant demolition activities are required adjacent to retained trees and as such, no mitigation measures are considered necessary.
- 5.3.6. **Construction/Foundation Design:** Prior to any construction activity on site near trees, all tree protective measures required will need to be correctly installed to prevent unnecessary damage.
- 5.3.7. Trial holes to assess the soil type are recommended. Mature trees and certain soil classifications can influence buildings if not built on adequate foundations.

- 5.3.8. Such a method will minimise root damage and allow the retention of these trees, whilst accommodating the proposal. Full details of these works should be included in an associated **Arboricultural Method Statement**, along with any phasing of protection methods and arboricultural supervision which may be necessary.
- 5.3.9. Advice should always be sought from a suitably qualified Structural Engineer. In some cases, the water demand of trees can be an important consideration when determining the appropriate foundation design. Because of this, water demands for the trees identified on this site are included at **Appendix 1**, in accordance with **NHBC chapter 4.2**, for the use of the appointed structural expert.
- 5.3.10. **Site Compound:** The site compound, which typically includes the site office, mess facilities, toilets, storage of materials and parking, must be located away from all trees and outside their RPAs.
- 5.3.11. Care should also be taken to prevent soil contamination with chemical spillages, including petrol, diesel and oils.
- 5.3.12. **Landscaping:** Any proposed fence lines may be constructed within the RPA if necessary, providing that appropriate considerations are made to the protection of the tree. This is providing that no continual trenching is undertaken (e.g. for small walls onto which panel fencing is installed). Excavation must be kept to a minimum and therefore only fence designs requiring intermittent posts will be acceptable within the RPA of retained trees.
- 5.3.13. No ground level changes are to be undertaken within the RPA of retained trees, unless otherwise stated or agreed with the appointed arboricultural consultant or the LPA. The requirement to raise/lower ground levels within RPAs should be communicated to these parties at the earliest convenience.

6. Remedial Measures

- 6.1. In order to protect the trees during the construction phase, protective fencing will need to be installed. Protective fencing specifications and on-site positioning, along with details of any necessary specialist construction methods can be provided in an **Arboricultural Method Statement (AMS)**.
- 6.2. The site offers scope for landscaping and tree planting. All areas identified for the new trees should also be protected by fencing during the construction phase to prevent the compaction or contamination of the soil.

7. Conclusion

- 7.1. The trees surveyed were found to be in a reasonable condition. The majority of vegetation on site provides a valuable screen between the M66 and the adjacent land.
- 7.2. No trees are protected by a Tree Preservation Order (TPO) or by virtue of them being in a Conservation Area.
- 7.3. One group and five trees (**G4, T5, T6, T7, T8** and **T9**) require a biennial inspection due to their proximity to the M66. These are discussed in **Section 4** and detailed at **Appendix 1**.
- 7.4. A single section of **H11** is required to be removed in order to facilitate the widening of Waterfold Lane to increase visibility and access for the proposed junction. These are discussed in **Section 5** and detailed on the plan at **Appendix 3**.
- 7.5. All development work carried out near trees must be executed in a manner sympathetic to their needs. Otherwise, the condition of the trees may deteriorate in the months and years following development, leading to a loss of amenity and resulting in potentially hazardous trees. Care must therefore be taken to ensure that the retained trees are suitably protected.
- 7.6. In accordance with Section 6.1 of BS 5837: 2012, the next stage on this site should be the preparation of an **Arboricultural Method Statement (AMS)**, to ensure that all the retained trees survive the development process. An **AMS** details which trees are to be removed, which trees are to be retained and any other tree works which are required to facilitate development. The **AMS** will also advise on temporary protective barriers, temporary ground protection, site supervision, location of services and it will detail specialist construction techniques.
- 7.7. It is advised that in accordance with Section 5.6 of BS 5837: 2012 that a **Tree Planting Scheme** is prepared which will help to ensure that the site retains a sustainable tree cover. A carefully designed **Tree Planting Scheme** will incorporate tree species in harmony with the development whilst seeking to improve the overall age range and species diversity.
- 7.8. In accordance with Section 6.3 of BS 5837: 2012, monthly site supervision is likely to be advisable during this development.

8. Caveat & Limitations

- 8.1. The content of this report may become invalidated if a change of circumstance affecting the trees arises as a result of unusual weather conditions, particularly storms & high winds.
- 8.2. Structural or chemical soil disruption around the trees may invalidate the findings in this report, especially where there is significant damage to the rooting area of the tree.
- 8.3. The trees in question were surveyed using non-invasive methods (the trees were not exposed to any physical disruption such as drilling necessary for fractometer measurements). Recommendations regarding internal cavities and/or internal decay cannot be made from this report without further inspection. Chemical analysis of the soil was not undertaken. Comments made upon the structure of the tree are based upon inspection from ground level.
- 8.4. The content of this report may become invalidated by any 'Force Majeure' such as significant natural or man made disasters out of the control of any specific party.
- 8.5. The report is issued for the purposes of the instructing client in the form it is given and therefore no liability is accepted to any other party where reproduction, manipulation or reliance upon any incorrect representation of this report has been undertaken.
- 8.6. The data gained during the survey provides an indication of the health of the trees. However, it does not enable a comprehensive assessment of their condition over time. Trees are living organisms which are affected by many factors including weather conditions, diseases/disorders, light levels and human activities. Therefore, this report is only valid for a period of 1 year from the date of issuing. Should an update or revision of this report be required outside of this time period, **FRH Consultancy** may require a further site visit to ensure that the condition of the trees has not significantly changed. It is advised that the trees are inspected regularly, in the interests of risk management.

9. Signature

The information contained within this report is to the best of my knowledge and I hope it provides all the necessary information. If you require any further advice or guidance, please do not hesitate to contact me.

P. Hodgson

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18 Jul 2022



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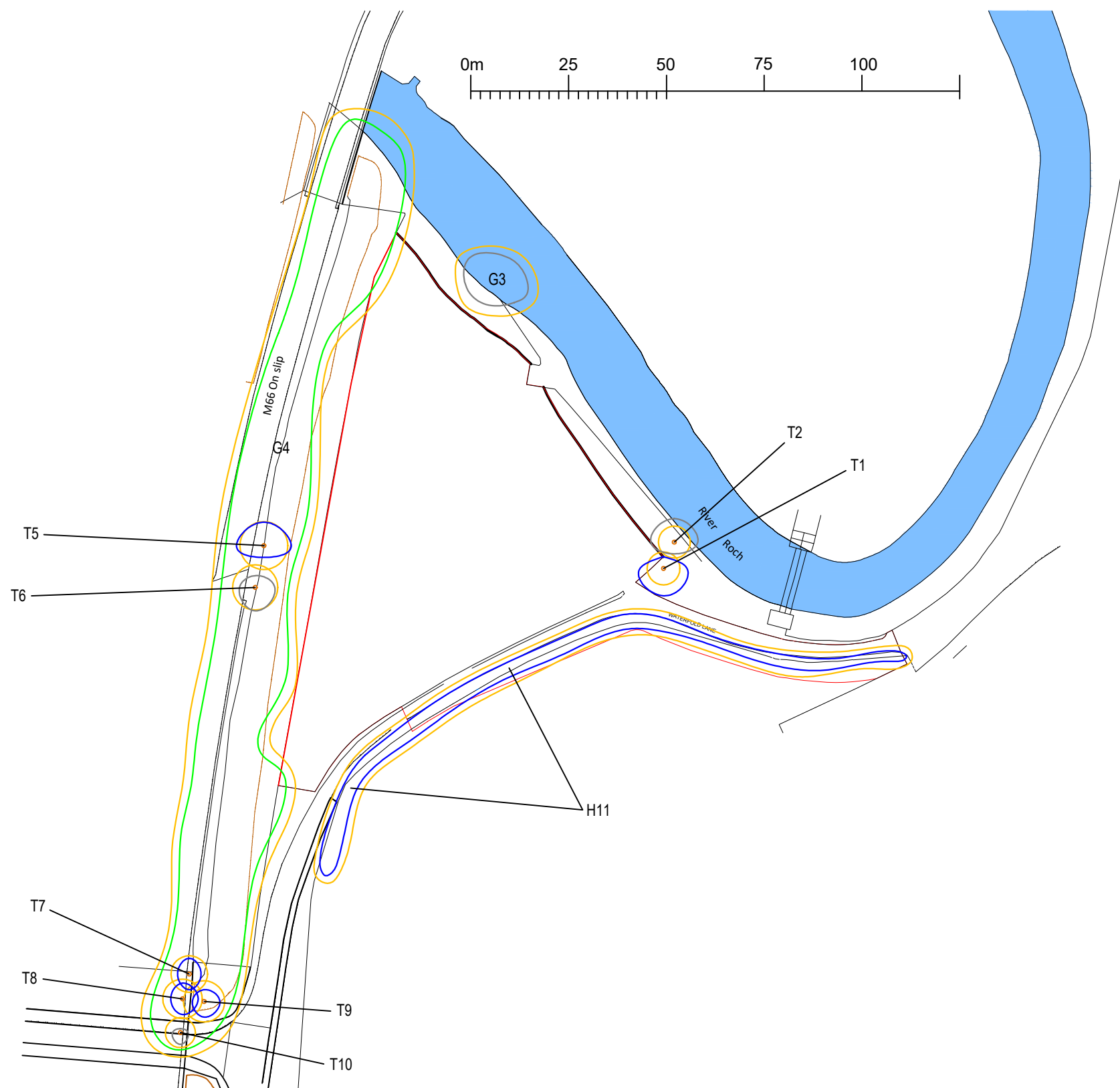
Web: www.frhconsultancy.co.uk

Appendix 1: Tree Schedule

Arboricultural Report at: Land adjacent to A4301 Waterfold Lane, Heywood BL9 7JY
FRH Ref: frh162021, amended version: frh602022

Notes:
1. Management recommendation colours denote priority of works: **Red = works to be completed within 1 month**, **Amber = works to be completed within 6 months** & **Green = works to be completed within 12 months**.
2. Management recommendations in *italics* are based on the requirements of the Arboricultural Impact Assessment (AIA), if applicable.
3. The number of HERAS panels are provided to help indicate the amount of fencing required to protect the tree/s.
4. Where data is available, the water demand of the species has been provided in accordance with NHBC.

Basic Information													BS 5837 Information						
ID	Code	Species	Age	DBH (mm)	Crown Spread (m)				Height (m)	Condition	Observations	Management Recommendations	Water Demand	RPA (m)	No. of HERAS Panels	Lifespan (years)	Category Grade	Sub Categor	
					N	E	S	W											
T 1	FREX	Common Ash - Fraxinus excelsior	Early Mature	350	3	6	7	6	8	Fair	A multi stemmed specimen with decurrent habit. Minor symptoms of Ash Dieback and no major visible defects.	None required at present.	Moderate	4.2	8	20+	B	2	
T 2	SACA	Goat Willow - Salix caprea	Early Mature	340	6	6	3	6	7	Fair	A multi stemmed specimen with decurrent habit. Majority of canopy of the River Roch and no major visible defects.	None required at present.	High	4.08	8	20+	C	2	
G 3	ACPS	Sycamore - Acer pseudoplatanus	Semi Mature	270	See Plan				9	Fair	A copse of multi stemmed specimens with decurrent habits on the bank of River Roch. No major visible defects.	None required at present.	Moderate	0	0	20+	C	2	
G 4	MDG	Mixed Deciduous Group	Semi Mature	250	See Plan				12	Good	A linear group of single to multi stemmed specimens forming an amenity screen from the M66. Regenerative growth present throughout with many younger specimens forming a new canopy layer. Species include English Oak, Goat Willow, Crack Willow, Hawthorn, Elder, Common Ash, Alder, and Sycamore.	Monitor on a biennial basis due to proximity to M66.	High	3	6	40+	A	2	
T 5	SAFR	Crack Willow - Salix fragilis	Mature	510	6	7	3	6	17	Fair	A two stemmed specimen with included section 1m from ground level, reactive growth present for support and a vertical scaffold branching structure.	Monitor on a biennial basis due to the included section.	High	6.12	11	20+	B	1 2	
T 6	SAFR	Crack Willow - Salix fragilis	Mature	480	3	5	6	4	14	Fair	A single stemmed specimen with a decurret habit and a failed branch within G3. No major visible defects.	Monitor on a biennial basis due to proximity to M66.	High	5.76	11	20+	C	2	
T 7	QURO	English Oak - Quercus robur	Mature	390	4	3	4	3	12	Fair	A two stemmed specimen with minor included section and a decurrent habit. Situated adjacent to the overpass for the M66.	Monitor on a biennial basis due to proximity to M66.	High	4.68	9	20+	B	2	
T 8	ACPS	Sycamore - Acer pseudoplatanus	Mature	420	4	4	4	3	13	Fair	A multi stemmed specimen with decurrent habit. Situated adjacent to the overpass for the M66. No major visible defects.	Monitor on a biennial basis due to proximity to M66.	Moderate	5.04	10	20+	B	2	
T 9	ACCA	Field Maple - Acer campestre	Mature	440	3	4	4	3	13	Fair	A multi stemmed specimen with decurrent habit and no major visible defects.	Monitor on a biennial basis due to proximity to M66.	Moderate	5.28	10	20+	B	2	
T 10	FREX	Common Ash - Fraxinus excelsior	Mature	320	1	2	3	2	10	Fair	A single stemmed specimen with a decurrent habit. Symptoms of Ash Dieback and no major visible defects.	None required at present.	Moderate	3.84	7	20+	C	2	
H 11	CRMO	Hawthorn - Crataegus monogyna	Mature	<250	See Plan				1.5	Good	A linear group of single to multi stemmed specimens forming a hedgeline on the adjacent side of the road.	None required at present. <i>Remove the highlighted section to facilitate the proposed development and reposition, replant to maintain the hedgeline.</i>	High	0	0	40+	B	2	
End of Table																			



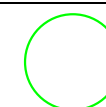
Appendix 2: Tree Constraints Plan

Arboricultural Report at: Land adjacent to
A4301 Waterfold Lane, Heywood BL9 7JY.
FRH Ref: frh162021, amended version:
frh602022.

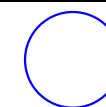
Surveyed & Drawn By: PH

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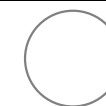
Survey Date: 03/11/2021



Category A Tree



Category B Tree



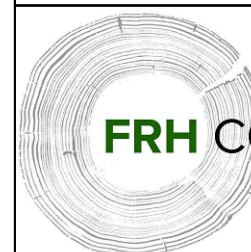
Category C Tree



Category U Tree



Root Protection Area
(RPA)



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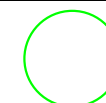
Appendix 3: Arboricultural Impact Plan

Arboricultural Report at: Land adjacent to
A4301 Waterfold Lane, Heywood BL9 7JY.
FRH Ref: frh162021, amended version:
frh602022.

Surveyed & Drawn By: PH

Paper Size: A3

Survey Date: 03/11/2021



Retained Trees



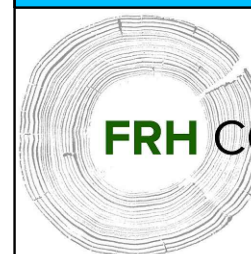
Removed Trees



Root Protection Area
(RPA)



Incurred RPA



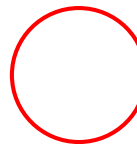
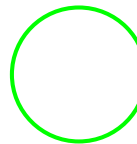
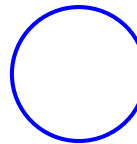
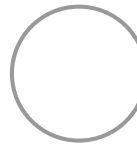
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Appendix 4: BS 5837:2012 Tree Quality Assessment

Category and definition		Criteria (including subcategories where appropriate)			ID on plan
Trees unsuitable for retention ¹					
Category U	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 category U trees (e.g. where, for whatever reason, 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 of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality.				
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.					
	1. Mainly arboricultural qualities	2. Mainly landscape qualities	3. Mainly cultural values, including conservation		
Trees to be considered for retention					
Category A	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or 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).		
Trees of high quality with an estimated remaining life expectancy of at least 40 years.					
Category B	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.		
Trees of moderate quality with an estimated remaining life expectancy of at least 20 years.					
Category C	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 collective landscape value; and/or trees offering low or only temporary/transient landscape benefits.	Trees with no material conservation or other cultural value.		
Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm.					

¹ Category **U** trees can have existing or potential conservation value which it might be desirable to preserve, if applicable, this will be recommended within **Appendix 1**.

Appendix 5: Glossary of Terms

Term	Explanation
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.
Root Protection Area (RPA)	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.
Scaffold Branches	Significant (relative to the canopy in question) 1st & 2nd order branches which support the tree's canopy.
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.
Binomial name shorthand	First two letters of genus name & first two letters of species name as combined to give a shorthand species code. E.g. Sycamore - ACer PSeudoplatanus would be written as ACPS. Where cultivar or conflicting names are used, a six digit form will be used rather than four digit. E.g. Copper Beech - FAGus SYlvatica 'PUrpurea' would be written as FASYPU.
Crown Break	The point at which the main stem divides into a tree's canopy.
Basal/Stem Opening	Section of tree which has lost its bark coating & may or may not feature wood degradation, decay or an open cavity.
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.
Semi Mature	Tree which has established a significant rooting structure & could not easily be transplanted. The tree's structure will have begun to develop an internal scaffold structure but its structural form does not yet match that of a mature version of its specimen. Trees in this age class will still be developing significantly in height & spread.
Early Mature	Tree which has established a significant rooting structure & has developed a noticeable internal scaffold structure, 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.
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.
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.
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.