



ARBORICULTURAL REPORT (BS 5837:2012)

PROPOSED DEVELOPMENT

LAND AT
WHITWORTH ROAD
ROCHDALE
OL12 0RP

November 2021

PM/BS/29/11/21

Murray Tree Consultancy | 0161 425 2138 | 07920 264374 | peter@murraytreeconsultancy.co.uk

www.murraytreeconsultancy.co.uk

TABLE OF CONTENTS

Contents	Page No.
1.0 INTRODUCTION	3
1.1 Professional Details	3
1.2 Tree Survey	3
2.0 FINDINGS	4
2.1 The Site	4
2.2 The Soils & Foundations	4
2.3 The Trees	4
2.4 Development Considerations	5
3.0 CONCLUSIONS	6
3.1 Significant Trees	6
3.2 Standard of Work	6
3.3 Statutory Controls	6
3.4 Wildlife	6

APPENDIX A – Glossary of Terms and Table 1 of BS 5837:2012

APPENDIX B – Arboricultural Data & Digital Photographs

APPENDIX C – Key References

APPENDIX D – Tree Constraints Plan

Disclaimer

The tree(s) referred to in this report are living entities and are therefore subject to natural processes. They will also be subject to changes to their environment caused by human's activities and to exceptional weather conditions. The inspection undertaken by our qualified staff relies on visual attributes of tree health and structure which can be assessed from a ground based inspection. Hidden defects which are not readily visible may not be detected. We therefore cannot wholly guarantee the condition and safety of the trees inspected beyond what can be reasonably assessed from the procedure used. We would recommend that the trees are regularly inspected and our staff will advise on the suitable frequency of these inspections.

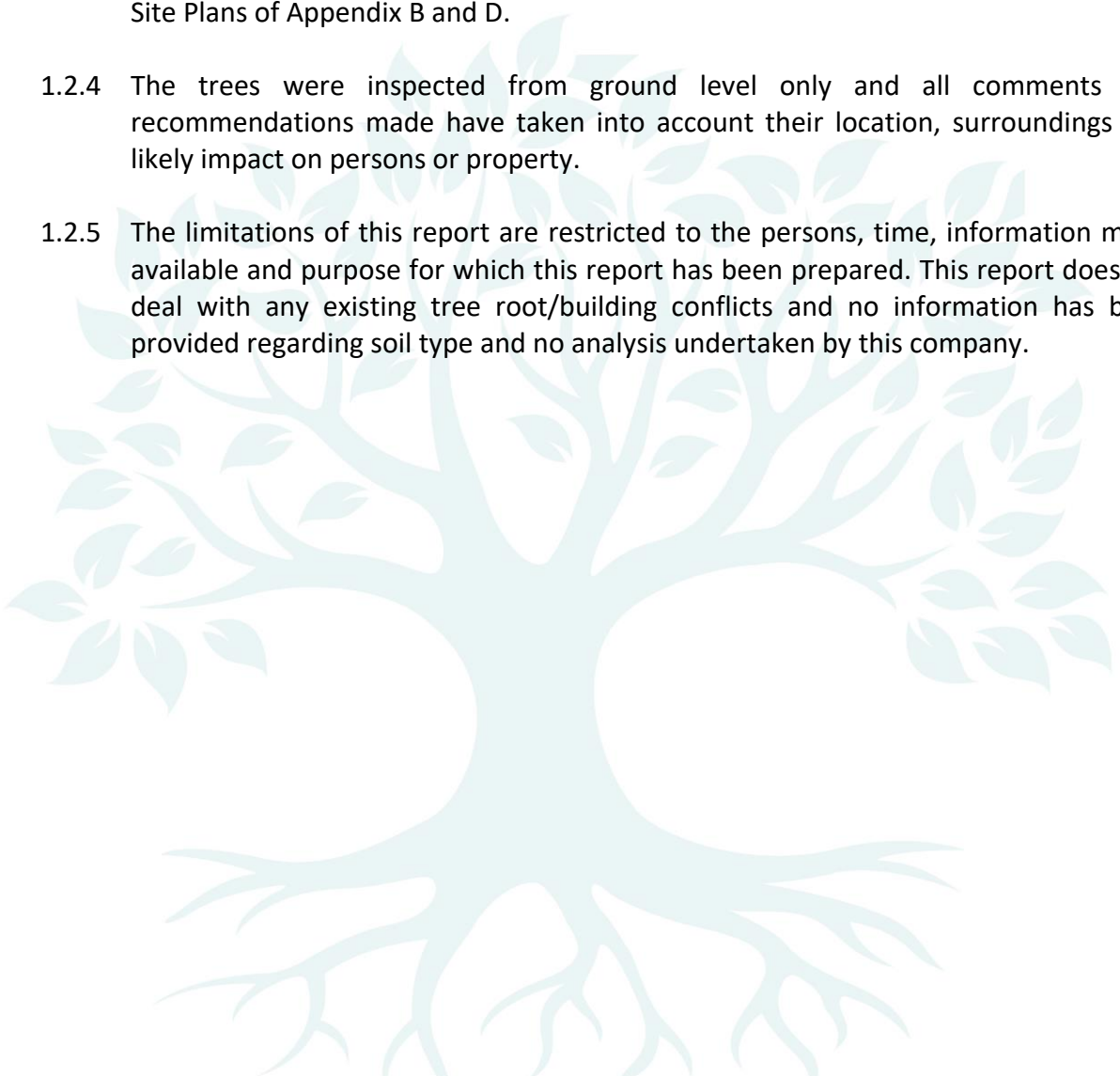
1.0 INTRODUCTION

1.1 Professional Details

- 1.1.1 My name is Peter Murray and I have been working and studying in the Arboricultural Industry since 1989. I have many years practical and consulting experience as a Local Authority arboriculturalist and more recently as a private sector practitioner.
- 1.1.2 I so far hold the Higher National Diploma in Arboriculture and am a professional member of the Arboricultural Association. I keep up to date with the latest research and best practice by attending relevant courses and seminars.

1.2 Tree Survey

- 1.2.1 I was recently instructed by Triangle Architects on behalf of their clients to carry out a site visit at Land off Whitworth Road, Rochdale, OL12 0RP and survey all significant trees that may be affected by development in accordance with *BS 5837:2012 trees in relation to design, demolition and construction – Recommendations*.
- 1.2.2 The survey on which the findings of this report are based was undertaken on Tuesday 9th November 2021 and the weather was dry.
- 1.2.3 This report should be read in conjunction with the attached Arboricultural Data and Site Plans of Appendix B and D.
- 1.2.4 The trees were inspected from ground level only and all comments and recommendations made have taken into account their location, surroundings and likely impact on persons or property.
- 1.2.5 The limitations of this report are restricted to the persons, time, information made available and purpose for which this report has been prepared. This report does not deal with any existing tree root/building conflicts and no information has been provided regarding soil type and no analysis undertaken by this company.



2.0 FINDINGS

2.1 The Site

2.1.1 The site in question is a car park for residents and shoppers owned by the Local Authority within an urban area.

2.1.2 The car park is typically surrounded by grass landscaping with several trees present.

2.2 The Soils & Foundations

2.2.1 The soil of the site is described at <http://www.landis.org.uk/soilscales> as being 'Slowly permeable seasonally wet acid loamy and clayey soils' and as having impeded drainage.

2.2.2 The following is taken from the NHBC Standards Chapter 4.2 Building near trees: The combination of shrinkable soils and trees, hedgerows or shrubs represents a hazard to structures that requires special consideration. Trees, hedgerows and shrubs take moisture from the ground and, in cohesive soils such as clay, this can cause significant volume changes resulting in ground movement. This has the potential to affect foundations and damage the supported structure. In order to minimise this risk, foundations should be designed to accommodate the movement or be taken to a depth where the likelihood of damaging movement is low.

2.3 The Trees

2.3.1 A total of five trees were surveyed and plotted in order to assess their health and dimensions in accordance with the British Standard and the results are clearly detailed within the Appendices of this report.

2.3.2 The two larger trees of the site were found to be in good condition for their age and species (T1 & T2). Whilst the smaller specimens were found to be in a poor state (T3, T4 & T5). Any works identified within the data tables should take place regardless of development in line with best practice. The quality rating for the trees on or affecting this site can be summarised as follows:

U – 3 trees (T3, T4 & T5)

A – 0 trees/groups

B – 2 trees (T1 & T2)

C – 0 trees/groups

2.4 Development Considerations

- 2.4.1 The data tables within Appendix B clearly details the condition of the trees and identifies their worthiness for retention. In addition, the Tree Constraints Plan of Appendix D illustrates their Root Protection Area's (RPA's) in accordance with the *British Standard 5837:2012 Trees in relation to design, demolition and construction – Recommendations*. This is an area that should be left undisturbed in order to provide adequate rooting area for retained trees.
- 2.4.2 However, with regard to T1 (Silver Birch) & T2 (Sycamore) the RPA of these trees will not be under the main buildings as shown but will have adapted over time to take advantage of any soil & nutrient they can find surrounding them. Ordinarily, I would change the shape of the RPA to illustrate this but in this instance, this would be difficult to try and quantify especially with T1.
- 2.4.3 This information can then be used within the design process for development and an Arboricultural Implications Assessment and Method Statement can then be produced to fully assess development impact on each tree, proposed tree works and tree protective measures.
- 2.4.4 The following considerations are broadly taken from the current British Standard, which states '*A realistic assessment of the probable impacts of any proposed development on the trees and vice versa which should take into account the characteristics and condition of the trees. To maximize the probability of successful tree retention, the following factors are taken into account.*'
- 2.4.5 **Shading of buildings** - This can be a problem, particularly where there are rooms, which require natural light. Proposed buildings should be designed to take account of significant trees that are to be retained with regard to their ultimate size and crown density, which effects available light.
- 2.4.6 **Shading of open spaces** – Open spaces, particularly garden areas should be designed to meet the normal requirements for direct sunlight for at least part of the day. However, shading can be desirable to reduce glare or excessive solar heating, or to provide for comfort during hot weather.
- 2.4.7 **Privacy and screening** – It could be highly desirable to retain trees in order to provide screening to a building for internal privacy or to reduce overlooking by neighbours or to mitigate undesirable views, such as busy roads, railway lines or industrial premises. The success of this will depend on species, quality and proximity to the development.
- 2.4.8 **Direct damage** - Below ground, damage to structures can occur because of incremental root and stem growth. Above ground damage can occur to trees and structures by the continuous whipping of branches against the fabric of a building. The likely effect of direct damage should be considered in order to avoid the need for frequent remedial pruning or other maintenance.

2.4.9 Future pressure for removal - The relationship of buildings to large trees can cause apprehension to occupiers or users of nearby buildings or spaces, resulting in pressure for the removal of the trees. Buildings and other structures should be sited to allow adequate space for a tree's natural development, with due consideration given to its predicted height and canopy spread.

2.4.10 Seasonal nuisance - Trees are naturally growing and shedding organisms. Leaves of some species can cause problems, particularly in the autumn, by blocking gullies and gutters. Fruit can cause slippery patches, or the accumulations of honeydew can be damaging to surfaces and vehicles. These issues should be considered taking into account the species and size of trees in question.

3.0 CONCLUSIONS

3.1 Significant Trees

The Tree Constraints Plan of Appendix D clearly illustrates the trees of quality and their restrictions in terms of their crown spreads and RPA's (please note 2.4.2 above). In this instance only two trees were found to be of any quality worth retaining (T1 & T2).

3.2 Standard of Work

All tree work undertaken should be done in accordance with British Standard 3998:2010 and by competent contractors insured with public liability cover of at least two million pounds.

3.3 Statutory Controls

If the trees on site are subject to any Tree Preservation Orders (TPO's) or are encompassed within a Conservation Area, then statutory permission from the Local Planning Authority (LPA) will be required before any tree works take place.

3.4 Wildlife

All operations should take account of wildlife needs and be planned to take advantage of weather conditions and time of year for minimum damage and disturbance. If any protected species or nesting birds are present or discovered while the works are taking place all work should cease until contact has been made with Natural England for further advice. Natural England can be contacted on 0300 060 3900 or by e-mail to: enquiries@naturalengland.org.uk. Specific consideration should be given to the possible presence of roosting bats, which are protected by the Wildlife and Countryside Act 1981 (schedule 5) and included in schedule 2 of the Conservation Regulations 1994. Ideally, a survey should be carried out to identify any potential roost sites and if bats are found to be present advice should be sought from a person qualified and experienced in handling such matters and fully conversant with the implications of the Act.

Signed

A handwritten signature in black ink, appearing to read 'P. Murray'.

Peter Murray (HND. ARB, M, Arbor A)
Consulting Arborist

29th November 2021



APPENDIX A - Glossary of Terms & Table 1 of BS 5837:2012

The following terms are concurrent with best Arboricultural practice and within the guidelines set by the International Society of Arboriculture (ISA), the Arboricultural Association (AA) and the British Standards Institute (BSI).

Dbh: Diameter at Breast Height is measured at 1.5m and recorded in millimetres. Where a tree becomes multi-stemmed below 1.5m the diameter of each stem is measured at 1.5m and added together. Where a tree has low branching or has swelling the stem is measured at the narrowest point below.

Height: Height was estimated and recorded in metres.

Age Range: Age is site specific and categorised:

Young (Y)	Out-planted trees that have not yet established.
Semi-Mature (SM)	Established trees up to 1/3 of expected height and crown.
Early Mature (EM)	Between 1/3 and 2/3 of expected height and crown.
Mature (M)	Between 2/3 and full expected height and crown.
Fully Mature (FM)	Full expected height and crown.
Over Mature (OM)	Crown beginning to break-up and decrease in size.
Senescent (S)	Crown in advanced stage of break-up.

Crown Spread: Measured in metres at four cardinal points (N, E, S & W).

Crown Clearance: Measured in metres from the ground to the first branch tip on development side only.

Condition - Assessment of current physiological condition and structural morphology incorporating vigour and vitality and categorised:

- A - Tree needing little, if any attention
- B - Tree with minor, but rectifiable defects, or in the early stages of physiological stress
- C - Tree with significant structural and physiological flaws and/or extremely stressed
- D - Tree that is dead, biologically/physically moribund or dangerous

Desirability To Retain – As Outlined in Table 1 of BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations (see below).

Definition of Physiological & Morphological Terms

Adaptive Growth - The process whereby wood formation is influenced both in quantity and in quality by the action of gravitational force and mechanical stresses on the cambial zone.

Bifurcation – Forked or divided union.

Brown Rot - Form of decay where cellulose is degraded, while lignin is only modified.

Cankers (target or tumorous) - A localised area of dead bark and cambium on a stem or branch, caused by fungal or bacterial organisms, characterised by woundwood development on the periphery. This may be annual or perennial.

Cavity - An open wound, characterised by the presence of extensive decay and resulting in a hollow.

Chlorotic Leaf - Lacking in chlorophyll, typically yellow in colour.

Compartmentalisation - The physiological process that creates the chemical and mechanical boundaries that act to limit the spread of disease and decay organisms.

Coppicing - Is an ancient form of woodland management that involves repetitive felling on the same stump, near to ground level, and allowing the shoots to re-grow from that main stump. (Also known as the coppice stool).

Crack - Longitudinal spilt in stem or branch, involving bark and/or underlying wood. These may be vertically and horizontally orientated.

Decay - Process of degradation of woody tissues by fungi and bacteria through decomposition of cellulose and lignin.

Deadwood - Deadwood is often present within the crown or on the stems of trees. In some instances it may be an indication of ill health, however, it may also indicate natural growth processes. If a target is present beneath the tree, deadwood may fall and cause injury or damage and should be removed, otherwise deadwood can remain intact for conservation purposes (insects, fungi, birds etc.).

End Weight - The concentration of foliage at the distal ends of stems and deficient in secondary branches.

Girdling Root - Root which circles and constricts the stem or roots causing death of phloem and/or cambial tissue.

Hazard Beam - An upwardly curved branch in which strong internal stresses may occur without the compensatory formation of extra wood (longitudinal splitting may occur in some cases).

Included Bark Union - Pattern of development at branch junctions where bark is turned inward rather than pushed out. Potential weakness due to a lack of a woody union.

Ivy Growth - Ivy growth may ascend into the tree's crown, increasing wind resistance, concealing potential defects and reducing the tree's photosynthetic capacity. Ivy growth is often acceptable in woodland areas as a conservation benefit.

Live Crown Ratio - The relative proportion of photosynthetic mass (leaf area) to overall tree height.

Reaction Wood - Specialised secondary xylem, which develops in response to a lean or similar mechanical stress, attempting to restore the stem to the vertical.

Root Plate Lift - The physical movement of the rooting plate causing soils to shift and crack. May occur during adverse weather conditions. Trees may become unstable.

Structural Defect - Internal or external points of weakness, which reduce the stability of the tree.

Suppressed - Trees which are dominated by surrounding vegetation and whose crown development is restricted from above.

Topping - A highly disfiguring practise, likely to cause severe xylem dysfunction and decay in major structural parts of the wood.

White Rot - Form of decay where both cellulose and lignin are degraded.

Wound - Any injury, which induces a compartmentalisation response.

Woundwood - Wood with atypical anatomical features, formed in the vicinity of a wound and a term to describe the occluding tissues around a wound as opposed to the ambiguous term "callus."

Woodland Structure - The vertical and horizontal arrangement of trees within a group or woodland i.e. Dominant - trees with a crown above the upper layer of the canopy, Co-dominant trees that define the general upper edge of the canopy, Intermediate trees that have been largely overgrown by others, Suppressed trees that have been overgrown and occupy an under storey position and grow slowly, often severely asymmetrical.

Note: The definitions described above, may not necessarily be included within the Arboricultural Survey Data.

Table 1 – Cascade chart for tree quality assessment

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 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 (e.g. Dutch elm disease), or very low quality trees suppressing adjacent trees of better quality Note – <i>Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i>		
	1 Mainly arboriculture qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation
Trees to be considered for retention			
Category A Trees of 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 formal or semi-formal arboriculture 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)
Category B Trees 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 minor 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 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
Category C 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	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	Tree with no material conservation or other cultural value

APPENDIX B – Arboricultural Data

Arboricultural Data Sheet: Land off Whitworth Road, Rochdale, OL12 ORP										Date of Survey: 09/11/21		Weather: Dry		Surveyor: PM		
Crown C = Crown Clearance; Cond R = Condition Rating; ERC (Yrs) = Estimated Remaining Contribution; TQRA = Tree Quality Category Rating; RPA (m²) = Root Protection Area (m²) Recommended works should be carried out to the <i>British Standard Recommendations for Tree Work, BS 3998:2010</i>																
Tree No.	Species	Dbh (mm)	Height (m)	Age	Crown Spread				Crown C	Cond R	Observations and Comments	Preliminary Recommendations	ERC (Yrs)	TQC R	RPA (m²)	RPA Circle Radius (m)
					N	E	S	W								
T1	Silver Birch	510	15	M	6	6	6	6	2	A/B	Located within short grass area close to the adjacent property. Good form and vigour. Previous pruning wounds on stem from crown lifting operations. Foliage low over property roof.	Prune minor branches to clear building by approximately 2m.	20+	B1	117.67	6.12
T2	Sycamore	900	14	M	6.5	7	5	6.5	2	B	Located within short grass area close to the adjacent property. Multi-stemmed at base but good overall form and vigour. Root disturbance to the adjacent paving with evidence of previous repair.	n/a	20+	B1	366.44	10.80
T3	Apple	280	5	M	4	4	4	4	2	C	Located within narrow grass verge adjacent to the highway and bus shelter. Major stem decay due to various stem wounds but reasonable vigour. High likelihood of complete failure.	Fell and replace.	5-10	U	35.47	3.36
T4	Silver Birch	170	6	EM	3	4	3	2	2	C	Located within narrow grass verge adjacent to the highway. Major basal decay present. Poor form and low vigour. High likelihood of complete failure.	Fell and replace.	5-10	U	13.07	2.04
T5	Elderberry	600	6	OM	4	3.5	5	3.5	2	C	An old multi-stemmed scrub specimen with several dead and decaying stems. Very low potential.	Fell to form Coppice.	0-5	U	162.86	7.20

T2



Root disturbance to paving from T2



T3 stem decay



T3

T4 basal decay



T4 low vigour



T5 dead stems & low vigour



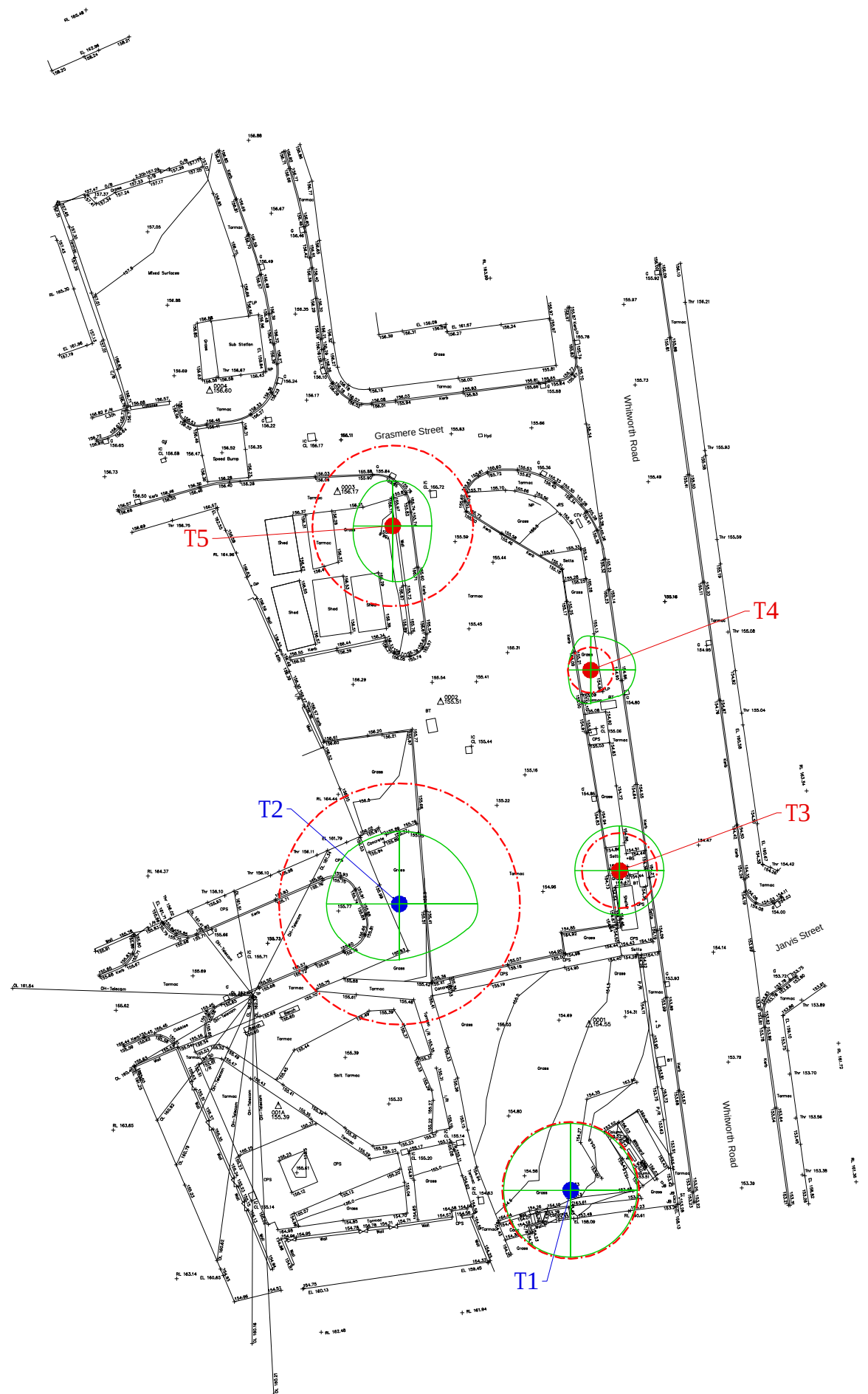
T1 close to adjacent property



APPENDIX C – Key References

1. *British Standard BS 5837: (2012) Trees in relation to design, demolition and construction - Recommendations. ISBN 978-0-580-69917-7*
2. *Lonsdale, D. (199) Principles of tree hazard assessment and management, Research for amenity trees NO. 2. HMSO, London. ISBN 0-11-753355-6*
3. *Mattheck, C. and Belier, H. (1994) The body language of trees. Research for amenity trees No. 4. HMSO, London. ISBN 0-11-753067-0*
4. *Shigo, A. L. (1989a) A new tree biology. Shigo and Trees Associates, Durham, New Hampshire ISBN 0-943563-04-6*
5. *Stouts R. G. and Winter T. G. (1994) Diagnosis of ill-health in trees, Research for amenity trees No. 2. HMSO, London. ISBN 0-11-752919-2*
6. *British Standard BS 3998: (2010) Tree Work-Recommendations. ISBN 978-0-580-53777-6*

APPENDIX D – Tree Constraints Plan



KEY

- TREE LOCATION AND CONDITION
- GROUP/ HEDGE LOCATION AND CONDITION
- ROOT PROTECTION AREA (RPA)
- CROWN SPREADS

Key to Condition

Red – Trees of poor quality Blue – Trees of moderate quality
Grey – Trees of low quality Green – Trees of high quality



Whitworth Road, Rochdale

TREE CONSTRAINTS PLAN

Scale: 1/500 @A3
Date: November 2021
Drawing: MY919/WRR/01 REV -

