

**Former Watergate School
Speke Road
Liverpool**

Redrow Homes Lancashire

TREE SURVEY REPORT



tba
landscape architects

Landscape Architecture
Arboriculture

1st floor, Building 2
The Wharf Business Centre
Lower Wharf Street
Ashton-under-Lyne
Lancashire
OL6 7PB

Tel: 0161 3083765

© Copyright reserved Trevor Bridge Associates Limited 2014
The contents of this document must not be copied
in whole or in part without the written consent of
Trevor Bridge Associates Limited

October 2014

Ref: MG/4902/TSR/OCT14

CONTENTS

- 1.0 Introduction
- 2.0 Scope and Limitations of Report
- 3.0 Site Location
- 4.0 Tree Survey Schedule – Methodology
- 5.0 Trees and Construction – General Issues
- 6.0 Tree Constraints
- 7.0 Structures within the Root Protection Areas of Trees
- 8.0 Wildlife issues and timing of operations
- 9.0 Tree Preservation Orders and Conservation Areas
- 10.0 Tree Survey Schedule

1.0 Introduction

- 1.1 Trevor Bridge Associates Ltd (TBA) have been instructed by Barrett Homes to undertake a pre-development arboricultural survey of trees and significant vegetation. The pre-development tree survey should be read in conjunction with the accompanying Tree Survey & Root Protection Area drawing ref: 4902.01.
- 1.2 A site visit to the site was carried out on 7 October 2014. Weather conditions were clear.
- 1.3 This pre-development tree survey should be considered the first part of a process in identifying trees that are to be retained and protected. A key part of this the pre-development survey is the identifying of Root Protection Areas (RPA's). In Addition to the pre-development survey the following documents may be required to fully support a planning application:
- i) An Arboricultural Impact Assessment - This will assess the impact on trees of a proposed development.
 - ii) An Arboricultural Method Statement - This provides specific details on how a development should proceed in such a manner that avoids damage to trees being retained. It is accompanied with a tree protection plan.
- 1.4 The following information was provided for the purposes of undertaking this pre-development survey.
- Client Drawing: *Topographical Land Survey* (No reference available).
- 1.5 This report has been undertaken by Mike Gregory HND Arb. M. arbor A. Mike has extensive experience working as a tree surgeon and has several years experience as a tree officer. He has provided advice and consultancy to the public sector for over 15 years. He is highly experienced in tree and development issues, having provided reports on over 600 development sites.

2.0 Scope and Limitations of the Report

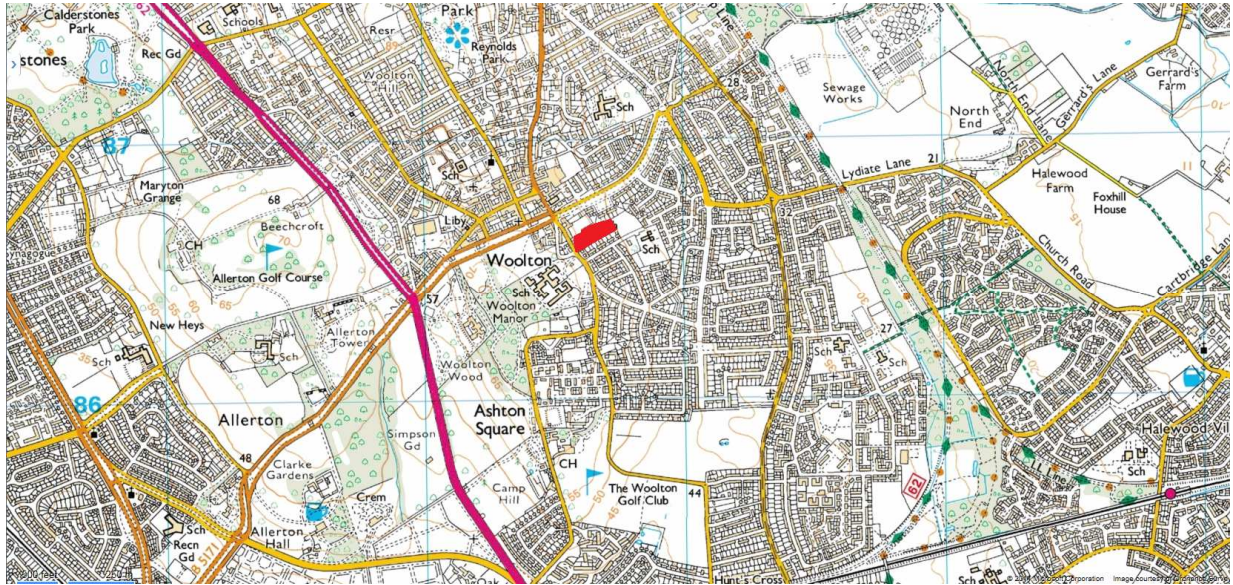
- 2.1 This report has been prepared to inform the design layout of potential development and be submitted with a planning application.
- 2.2 Due to the changing nature of trees – and possibly other site circumstances – this report and recommendations are limited to a two year period. Similarly, this report could be invalidated if any alterations are made to the site that could change the conditions as seen at time of inspection.
- 2.3 Under certain circumstances, roots can affect foundations, drains and other underground services. These issues have not been addressed by this report.
- 2.4 Trees are dynamic structures that can never be guaranteed 100% safe; even those in good condition can suffer occasional damage under only average weather conditions. A lack of recommended work does not imply that a tree will never suffer damage.

Former Watergate School, Liverpool

3.0 Site Location

3.1 The site comprises the grounds of the former Watergate School, Speke Road, Liverpool.

3:2 The location of the site is marked below (in red).



3:3 The grid reference of the site is **SJ 42626 86628**

3.4 The full details of the tree cover is included within the tree survey schedule within section 10.0 of this report, and within the accompanying Tree Survey & Root Protection Area drawing.

4.0 Tree Survey Schedule - Methodology

4.1 This survey complies with British Standard 5837:2012 *Trees in relation to design, demolition and Construction - Recommendations*. All significant trees or groups within the site have been inspected, identified and detailed.

4.2 Site. The survey was carried out from ground level and without the use of special diagnostic equipment (unless otherwise stated). Lower-grade material may be treated as numbered groups, for example where in rows or dense groupings.

4.3 Schedule. The following information is given in the schedule:

- **Tree reference No:** Prefixed with a T for Trees, G for groups and H for hedges.
- **Tree Species.** Common name of Species.
- **Height** (metres). An electronic hipsometer is used to measure tree heights. Tree heights are only measured where it is possible to gain a clear unobstructed view of the tree, otherwise the height is estimated.
- **Trunk diameter** (millimetres). This is a key measurement for calculating the Root Protection Areas of trees. Measurements are taken at 1.5m, height above ground level. If trees are assessed as a group or woodland feature, the trunk diameter of the largest tree within the group or woodland is estimated and used.
- **Crown spread** (metres): The maximum lateral spread of the canopy as measured from the cardinal compass points (NESW).
- **Crown clearance** (metres): The height of the lowest section of canopy measured from cardinal compass points.
- **Age class.** A classification of the age of the tree. In the case of woodlands and groups this is based in the oldest tree.

Y – Young: Recently planted trees less than ¼ life expectancy.

SM – Semi-Mature: Established trees less than 1/3rd predicted life expectancy.

EM – Early mature: Trees between 1/3rd and 2/3rd predicted life expectancy.

M - Mature: Trees over 2/3rd predicted life expectancy.

V - Veteran: A tree of significant age (with a large girth) which provides cultural, landscape or ecological value.

- **Physiological condition:** (Good, Fair, Poor, Dead). An assessment of the tree's health and vitality reflecting the tree's potential longevity as well as its capacity for withstanding environmental stresses (such as pests and diseases).
- **Structural Condition:** (Good, Fair, Poor, Dead): A consideration of the structural integrity of the physical structure of the tree.

Former Watergate School, Liverpool

- **Life Expectancy:** Estimated remaining contribution (years, 0-10 10-20 20-40 40+).
- **Root Protection Area:** As calculated via BS 5837: 2012 (area in square metres and as a radius in metres). This is the basis of the Root Protection Area marked as a circle on the Tree Survey (may have been modified in light of site circumstances). This is generally the minimum position for protective fencing.
- **Retention Category:**
Trees are categorised using the criteria shown in the table below. The purpose of the categorisation is to apply a non fiscal value to tree stock to allow informed decisions on which trees should be retained or removed within the context of development.

TREES UNSUITABLE FOR RETENTION:			
'U' – [Marked red on plan] Trees of such a condition that they can not be realistically retained as living trees in the context of the current land use for longer than 10 years.	<ul style="list-style-type: none">• Trees that have serious, irremediable, structural defect, such that their early loss is expected due to collapse including those which will become unviable after the removal of other category U trees (where for what ever reason, the loss of companion shelter can not 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 health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality <p><i>Note Category U trees can have existing or potential conservation value which might be desirable to preserve</i></p>		
TREES TO BE CONSIDERED FOR RETENTION:			
	1. Mainly arboricultural values	2. Mainly landscape values	3. Mainly cultural values, including conservation
'A' – [Marked green on plan] Trees of high quality with an estimated life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (eg the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (eg veteran trees or wood pasture)
'B' – [Marked blue on plan] Trees of moderate quality with a remaining life expectancy of at least 20 Years	Trees which may be in the A category but are down graded due to their impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such they are unlikely to be suitable for retention for beyond 40 years; trees lacking the special quality necessary to merit category A designation	Trees that are 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 clearly identifiable conservation or other cultural benefits
'C' – [Marked grey on plan] Trees of low quality with an estimated life expectancy of at least 10 years, or young trees with a stem diameter below 150mm	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 any greater collective landscape value ; and/or trees offering low or only temporary /transient landscape benefits	Trees with no material conservation or other cultural value

- **Observations:** This provides general information regarding the trees, providing details regarding defects, or points of merit.
- **Preliminary Recommendations:** Any management works that should be carried out. Recommendations for management works are only recommended sparingly, generally where there is a significant safety concern, or long term benefit for the tree. Works are considered within the context of the site at the time of survey. Works that are required in relation to new development proposals are considered separately (such as part of a method statement).

5.0 Trees and Construction – General Issues

5.1 Typically, about 80% of roots will be found in the upper half metre of soil and often extending well beyond the canopy spread. The threat to the trees by development comes from:

- (a) root severance or fracture
- (b) compaction of the soil, preventing gaseous exchange and moisture percolation
- (c) possible change to moisture gradients due to surface water run-off or interception
- (d) physical damage to low branches and trunk.
- (e) Damage from chemical run-off from construction activities

The consequences for the tree of such damage are:

- (i) instability, if severe enough
- (ii) entry points for pathogenic fungi at wounds / fractures
- (iii) loss of vitality due to reduced oxygen, mineral and moisture take-up; all leading to
- (iv) root death, and
- (iv) a general decline or possible death of the tree.

6.0 Tree Constraints

6.1 Constraints imposed by trees during development, both above and below ground need to be considered within the site layout design.

Protection is afforded to the tree by defining a Root Protection Area (RPA) within which no development activity should take place. The size of the RPA is defined in the British Standard and relates to trunk diameter. The RPA is normally the minimum position for placement of protective fencing.

6.2 Nominally the RPA is represented by a circle around the tree. The area of the RPA may however, subject to the consideration of the arboricultural consultant, and be altered to a polygon in order to reflect the site conditions and requirements. For example, existing hard surfaces and foundations are likely to restrict or limit root growth while good quality soil may promote and extend root growth.

6.3 Root Protection Areas primarily provide relate to below ground constraints (root protection). Other constraints that must be considered include:

- The current as well as ultimate height and spread of a tree.
- Large trees close to a building, particularly a dwelling, can cause apprehension to owners/occupiers that result in pressure for tree removal or inappropriate pruning. Buildings should be sited allowing for the species height, spread and overall habit.
- Species characteristics; i.e. density of foliage, fruit-fall, susceptibility to honeydew drip, or branch drop. Trees are shedding organisms. The leaves of some species may cause problems with blocking of gullies and gutters. Fruit may cause slippery patches and honeydew drop can affect surfaces (particularly cars). If conflicts may arise detailed design may address such issues, such as non-slip paths, use of car-ports, provision of leaf guards or grilles etc.

- The potential impact on direct and diffuse light of a particular location of land; shading of buildings by trees can be a problem, especially where rooms require natural light, in addition open spaces such as gardens and sitting areas should be designed to meet requirements for direct sunlight (for at least part of the day).
- Infrastructure requirements in relation to trees e.g. easements for underground or above ground apparatus and visibility splays.
- Space for the provision of new planting or landscaping.
- The proposed end use of space within Root Protection Areas.
- The requirement to protect overhanging canopies of trees that overhang or extend beyond Root Protection Areas.

7.0 Structures within the Root Protection Areas of Trees.

7.1 In the development layout design structures should be positioned outside of RPA's. In some exceptional instances there may be an overriding justification for construction within the RPA. In such cases technical solutions may be available to minimise (to an acceptable level) disturbance to the tree/s. Where such technical solutions may be relied upon full details will need to be included within a method statement. Advice must be sought from a suitably qualified arboriculturalist in such matters.

7.2 In some cases it may be unavoidable to place permanent hard surfacing within an RPA (for example the placement of an access driveway or parking area). In such cases the following should apply:

- No excavation of the soil should take place, other than scraping of the turf/vegetation layer
- Any design must avoid compaction, allowing even distribution of weight.
- New hard surfacing should not exceed 20% of any existing unsurfaced ground within the RPA.
- If the proposed surface is likely to require de-icing salt then run-off should be directed away from the RPA.
- Permeable hard surfacing can result in soil moisture saturation for long periods (resulting in root death). Where there is a risk of water-logging a design should incorporate land drainage.

7.3 Appropriate sub-base options for new hard surfacing include three-dimensional cellular confinement systems. Piles, pads or elevated beams can support bridges over RPA's. In all cases full specifications and methodology must be included within a supporting method statement.

8.0 Wildlife Issues and Timing of Operations

8.1 Bats. Under current legislation it is an offence to 'intentionally or recklessly disturb a bat' or 'damage, destroy or block access to the resting place of any bat'. For further details consultation must be made with the Statutory Nature Conservancy Organisation (Natural England, 0300 060 1842, www.naturalengland.org.uk). Where relevant any current ecological surveys for the site will take precedence in this matter.

Former Watergate School, Liverpool

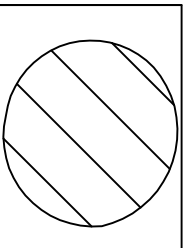
- 8.2 Birds. It is an offence to kill, injure or take any wild bird; or take, damage or destroy the nest of any wild bird while it is in use or being built. Therefore work likely to disturb nesting birds must be avoided from late March to August.
- 8.3 The pruning of some species should avoid specific times. *Prunus* species (eg flowering and fruiting Cherry, Plum, Almond etc) should only be pruned during June – August in order to minimise the risk of infection by Silver Leaf disease. *Acer* (Maples including Sycamore), *Betula* (Birches) and, *Morus* (Mulberry) should not be pruned February – June due to sap bleeding; also *Juglans* (Walnut) from December – June.
- 9.0 Tree Preservation Orders and Conservation Areas**
- 9.1 Prior to the undertaking of any tree works it is recommended that the local planning authority is contacted to check if trees within the site are subject to TPO's or Conservation Areas.
- 9.2 Works to protected trees require consent from the local planning authority. In the case of TPO's an application must be made. In the case of conservation areas a notification must be made. TPO applications take up to eight weeks, conservation area notifications take six weeks.
- 9.3 Certain exemptions apply; for example the removal of deadwood. In the case of dangerous trees 5 days written notice should be given to the local authority (in the cases of immediate danger the work should proceed, but the local authority contacted as soon as possible afterwards).
- 9.4 Planning consent overrides protected trees, where the works or removal are necessary for development to proceed.

Tree Group Hedge	Common Name	Age Class	Height (m)	No. of Stems	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	> 5 stems	Root Protection Area (Radius, m)	N	E	S	W	N(H)	E(H)	S(H)	W(H)	Physiological Condition	Structural Condition	Life Expectancy	Future Growth Potential	Retention Category	Comments & Observations	Preliminary Work recommendations
T1	Silver Birch	Mature	13	1	360						4.2	5	4	4	5	2	2	1	1	Good	Good	40+	Moderate	B1	Reasonable form.	No work required.
T2	Silver Birch	Mature	12	1	350						4.2	4	3	4	4	2	2	2	2	Good	Fair	40+	Moderate	B2		No work required.
T3	Silver Birch	Early-Mature	11	1	250						3	3	2	4	3	2	3	2	2	Fair	Good	40+	Moderate	B2		No work required.
T4	Silver Birch	Early-Mature	11	1	400						4.8	4	4	4	5	3	3	3	3	Fair	Fair	30+	Moderate	C1	Slightly asymmetric form.	No work required.
T5	Red Oak	Early-Mature	8	1	250						3	4	4	4	4	2	2	2	2	Good	Good	40+	Very High	B2	Tree situated within neighbouring property. Viewed from site only; estimated dimensions.	No work required.
T6	Red Oak	Mature	9	1	180						2.1	3	3	3	3	2	2	2	2	Good	Good	40+	Very High	B3	Tree situated within neighbouring property. Viewed from site only; estimated dimensions.	No work required.
T7	Wild Cherry	Mature	9	1	490						6	6	6	6	5	2	2	2	2	Good	Good	40+	Moderate	B3		No work required.
T8	Wild Cherry	Mature	8	1	320						3.9	5	5	5	2	2	2	1	3	Good	Fair/Poor	40+	Moderate	C2	Slightly suppressed form.	No work required.
T9	Silver Birch	Mature	16	1	370						4.5	3	3	3	3	2	2	2	2	Good	Good	40+	Moderate	B2		No work required.
T10	Maple	Semi-Mature	3	1	150						1.8	2	2	2	2	2	2	2	2	Fair	Fair	20+	Moderate	C2		No work required.

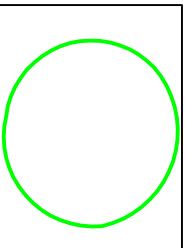
Tree Group Hedge	Common Name	Age Class	Height (m)	No. of Stems	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	> 5 stems	Root Protection Area (Radius, m)	N	m	S	W	N(H)	E(H)	S(H)	W(H)	Physiological Condition	Structural Condition	Life Expectancy	Future Growth Potential	Retention Category	Comments & Observations	Preliminary Work recommendations
T11	Cherry	Semi-Mature	2	1	150						1.8	1	1	2	1	1	1	1	1	Fair/Poor	Fair/Poor	10+	Very Low	C2		No work required.
T12	Weeping Willow	Mature	12	1	380						4.5	5	5	6	6	1	0	0	0	Good	Good	30+	High	B3		No work required.
G1	Group of Sycamore	Early-Mature	13	1	400						4.8									Good	Fair	40+	Low	B2	Trees situated within neighbouring land. Viewed from site only; estimated position and dimensions.	No work required.
T13	Lime	Over-Mature	18	1	600						7.2	3	4	4	4	2	2	2	2	Fair	Fair	40+	Very Low	B1	Tree situated within neighbouring land. Viewed from site only; estimated dimensions.	No work required.
T14	Sycamore	Early-Mature	5	1	250						3	2	2	2	2	3	3	3	3	Fair/Poor	Poor	10+	Moderate	C2	Tree situated within neighbouring land. Viewed from site only; estimated dimensions.	No work required.
T15	Lime	Mature	16	1	450						5.4	4	3	3	3	2	2	2	2	Good	Fair	40+	Low	B2	Tree situated within neighbouring land. Viewed from site only; estimated dimensions. Slightly asymmetric form.	No work required.
T16	Beech	Mature	17	1	750						9	6	5	6	7	2	2	2	2	Good	Fair	40+	Moderate	B1	Tree situated within neighbouring land. Viewed from site only; estimated dimensions. Prominent specimen.	No work required.
T17	Sycamore	Mature	16	1	600						7.2	5	5	5	5	3	3	3	3	Good	Fair/Poor	40+	Low	B1	Tree situated within neighbouring land. Viewed from site only; estimated dimensions. Prominent specimen.	No work required.
T18	Lime	Early-Mature	8	7	1	300					3.6	4	4	4	4	1	1	1	1	Good	Fair	40+	High	B2	Tree situated within neighbouring land. Viewed from site only; estimated dimensions.	No work required.
T19	Sycamore	Semi-Mature	8	7						120	3.2	4	4	4	4	2	2	2	2	Good	Fair	40+	High	C2		No work required.

Tree Group Hedge	Common Name	Age Class	Height (m)	No. of Stems	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	> 5 stems	Root Protection Area (Radius, m)	N	m	S	W	N(H)	E(H)	S(H)	W(H)	Physiological Condition	Structural Condition	Life Expectancy	Future Growth Potential	Retention Category	Comments & Observations	Preliminary Work recommendations
T20	Common Oak	Semi-Mature	7	1	250						3	4	4	4	4	2	2	2	2	Good	Good	40+	High	B2		No work required.
T21	Common Oak	Semi-Mature	4	3	80	80	80				1.8	2	2	2	2	1	1	1	1	Fair	Fair	40+	High	C2		No work required.
G2	Leyland Cypress	Semi-Mature	5	1	200						2.4									Good	Good	30+	High	C1	Tree situated within neighbouring land. Viewed from site only; estimated dimensions.	No work required.
T22	Goat Willow	Mature	8	1	400						4.8	6	5	5	6	1	3	3	1	Fair	Fair	20+	Moderate	C2	Tree situated within neighbouring land. Viewed from site only; estimated dimensions.	No work required.
T23	Sycamore	Early-Mature	15	1	380						4.5	5	4	5	5	3	2	2	2	Good	Good	40+	Moderate	B1		No work required.
T24	Sycamore	Mature	16	1	530						6.3	5	5	4	6	2	3	1	2	Good	Good	40+	Moderate	A2		No work required.
G3	Leyland Cypress	Over-Mature	4	1	120						1.5									Good	Fair	20+	Very High	C2	Tree situated within neighbouring land. Viewed from site only; estimated dimensions.	No work required.
T25	Hawthorn	Over-Mature	4	1	200						2.4	3	2	3	2	1	1	1	1	Good	Good	40+	Low	C3		No work required.
G4	Leyland Cypress Group	Mature	9	1	300						3.6	6	6	6	6	3	3	3	3	Good	Fair	20+	Moderate	C2	Row situated within neighbouring land. Viewed from site only; estimated dimensions.	No work required.
T26	Sycamore	Mature	15	1	510						6	6	6	6	6	3	3	3	3	Good	Good	40+	Moderate	A2		No work required.

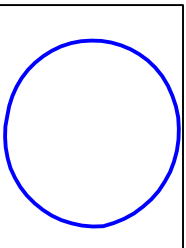
Tree Group Hedge	Common Name	Age Class	Height (m)	No. of Stems	Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	> 5 stems	Root Protection Area (Radius, m)	N	m	S	W	N(H)	E(H)	S(H)	W(H)	Physiological Condition	Structural Condition	Life Expectancy	Future Growth Potential	Retention Category	Comments & Observations	Preliminary Work recommendations
T27	Wild Cherry	Mature	15	4	320	380	290	300			7.8	8	8	8	8	1	1	1	1	Good	Fair	40+	Low	B2	Tree situated within neighbouring land. Viewed from site only; estimated dimensions.	No work required.
G5	Row of Leyland Cypress	Mature	17	1	360						4.2									Good	Fair	30+	Moderate	B3	Neighbours row.	No work required.
H1	Leyland Cypress Hedge	Mature	3	1	150						1.8									Good	Good	40+	Moderate	B2		No work required.
T28	Silver Pear	Early-Mature	3	1	150						1.8	2	2	2	2	0	0	0	0	Good	Fair	30+	Very Low	C2		No work required.
T29	Red Oak	Early-Mature	1	1	240						2.9	4	4	4	4	4	4	4	4	Good	Good	40+	Very High	B2		No work required.



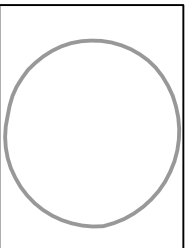
ROOT PROTECTION
AREA



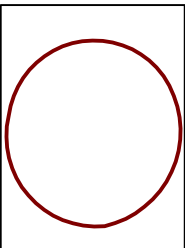
CATEGORY A



CATEGORY B



CATEGORY C



CATEGORY U

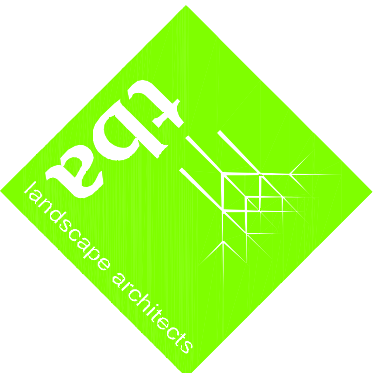
No dimension to be scaled from this drawing

© Copyright reserved

Date

Rev

Dwn



Landscape Architecture

Arboriculture

1st Floor, Building2
Winfat Business Centre
Winfat Wharf, Salford
Aston-under-Lyne
Lancs OL6 7PB

Tel: 0161-308 3765

E-mail: info@revorbridge.co.uk

Project

FORMER WATERGATE SCHOOL
SPEKE ROAD, LIVERPOOL
REDROW HOMES LANCASHIRE

TREE SURVEY AND ROOT PROTECTION
AREAS

Date	Scale(s)	Dwg no	Rev
OCT 14	1:500 @A2	4902.01	
Dwn	Chid		
FW	DG		



Tree Number	Species	RPA Radius	Category
G1	Group of Sycamore	4.8m	B2
G2	Leyland Cypress	2.4m	C1
G3	Leyland Cypress	1.5m	C2
G4	Cypress	3.6m	C2
G5	Row of Leyland Cypress	4.2m	B3
H1	Hedge Cypress	1.8m	B2
T1	Silver Birch	4.2m	B1
T2	Silver Birch	4.2m	B2
T3	Silver Birch	3m	B2
T4	Silver Birch	4.8m	C1
T5	Red Oak	3m	B2
T6	Red Oak	2.1m	B3
T7	Wild Cherry	6m	B3
T8	Wild Cherry	3.9m	C2
T9	Silver Birch	4.5m	B2
T10	Maple	1.8m	C2
T11	Weeping Cherry	1.8m	C2
T12	Willow	4.5m	B3
T13	Lime	7.2m	B1
T14	Sycamore	3m	C2
T15	Lime	5.4m	B2
T16	Beech	6m	B1
T17	Sycamore	7.2m	B1
T18	Lime	3.6m	B2
T19	Sycamore	3.2m	C2
T20	Common Oak	3m	B2
T21	Common Oak	1.8m	C2
T22	Goat Willow	4.8m	C2
T23	Sycamore	4.5m	B1
T24	Sycamore	6.3m	A2
T25	Hawthorn	2.4m	C3
T26	Sycamore	6m	A2
T27	Wild Cherry	7.8m	B2
T28	Silver Pear	1.8m	C2
T29	Red Oak	2.9m	B2