

Arboricultural Impact Assessment

Land at
Sallywags Day Nursery
Bridge Road South
Wrexham Industrial Estate
Wrexham

Ref:
AIA/SDN/08/18

Date:
2nd August 2018

Commissioned by:
Mr D. Edwards
On behalf of
Blueprint Architectural LTD

Prepared by
S. Shields

Arboricultural Impact Assessment

Land at

Sallywags Day Nursery
Bridge Road South
Wrexham Industrial Estate
Wrexham

This Arboricultural Impact Assessment has been prepared in accordance with the protocols, standards and procedures set out in BS 5837: 2012 'Trees in relation to design, demolition and construction'.

Outline planning permission is being sought to develop site to provide residential housing, amenity space and associated infrastructure.

All trees on and immediately adjacent to the site have been surveyed and assessed in accordance with the recommendations of BS5837: 2012. The survey recorded four individual trees, one group of trees and two areas of woodland, ranging in quality from high (2) through moderate (3) to low (2).

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Date	Revision	
2nd August 2018		Issued for Outline Planning

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Instruction

- 1.1 Shields Arboricultural Consultancy received instructions from Mr D. Edwards on behalf of Blueprint Architectural LTD. The client or their agents may copy and distribute this report as required for the purpose of applying for planning permission for or preparing any documents or plans for this or future applications at this site.
- 1.2 Outline planning permission is being sought to develop site to provide residential housing, amenity space and associated infrastructure.

Scope & Limitations

- 2.1 The purpose of the report is to assess the environmental and amenity values of all trees on or adjacent to the area affected by the proposed development and is based on a site assessment undertaken 1st August 2018 by S. Shields, principal consultant Shields Arboricultural Consultancy. The report will assess the long-term contribution that the trees can make to the area and the arboricultural implications of retaining them and seek to find a satisfactory juxtaposition between the trees and the new development. The report will assess the potential impact that may arise as a result of the proposed construction works and make recommendations for protecting trees, hedges and shrubs where appropriate
- 2.2 The report is prepared in accordance with the recommendations of the British Standard Document BS 5837: 2012 'Trees in Relation to Construction'.
- 2.3 This report is not an ecological assessment and does not identify habitats or constitute a protected species survey.

Statutory Controls & Obligations

- 3.1 Forestry Act; the felling of trees is controlled by the Forestry Act, which requires that a felling licence is obtained prior to cutting down any trees. The Forestry Act does not apply to the felling of trees growing within an orchard, private garden, churchyard or public open space. The Forestry Commission has the responsibility for enforcing the Forestry Act.
- 3.2 Tree Preservation Orders & Conservation Areas; Local Authorities have specific powers under the Town & Country Planning Act 1990 as amended, to protect trees through the use of Tree Preservation Orders. Where trees are protected under such orders it is a criminal offence (subject to any exemptions for which provision may be made by the act or order) to undertake, cause or permit the cutting down, topping, lopping, uprooting, wilful damage or wilful destruction of trees except with the consent of the local planning authority. Similar controls apply to all trees growing within a designated Conservation Area.
- 3.3 Bats, wild birds and other protected species; The Wildlife & Countryside Act & the Conservation (Natural Habitats & C.) Regulations make it an offence to disturb or destroy bats and bat roosts and wild birds and their nests. Other species of plant and

animal are also protected. These creatures often inhabit trees and sufficient care must be taken to ensure they are not affected during forestry and arboricultural works.

Site description

- 4.1 The proposed development site is situated off Bridge Road South in Wrexham Industrial Estate. The site is currently used as a children's day care nursery and is occupied by a single story building, areas of hard standing and areas of outdoor play equipment. Access to the site is via a service road off Bridge Road South and this road forms the south west boundary. All other boundaries adjoin a small area of woodland which extends around the site and links with a larger area to the north west of the site.
- 4.2 The site extends to approximately 0.27 ha, is level and at an elevation of 40m AOD and is reasonably sheltered.



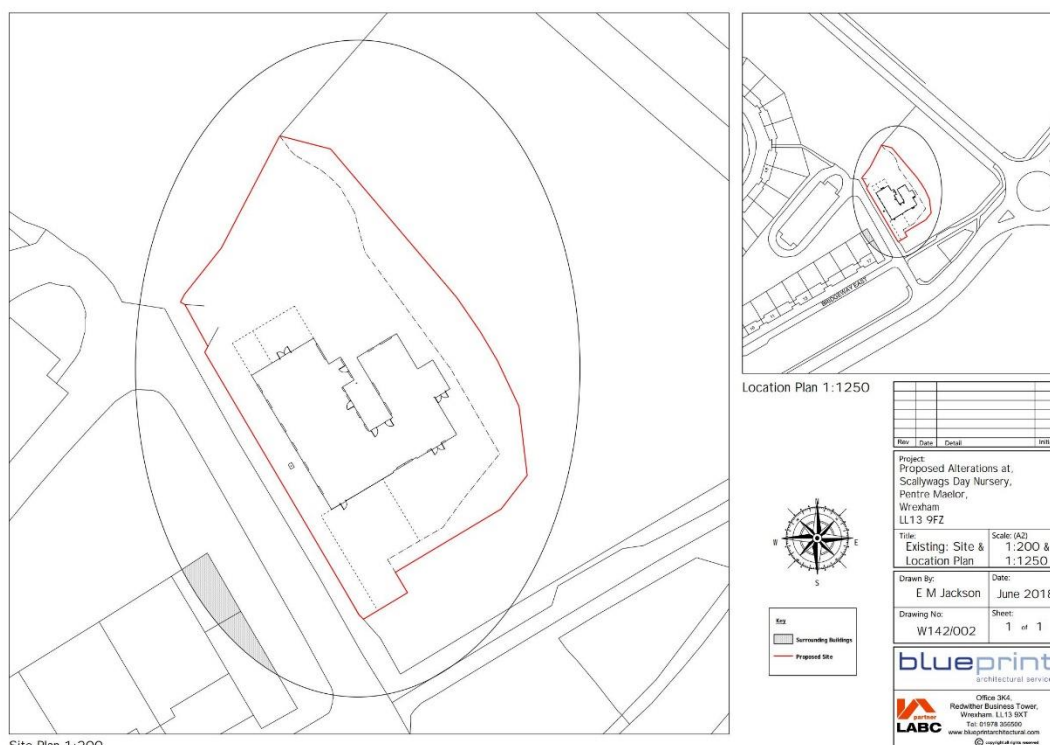
Soils

- 4.3 The site is free draining, geological maps indicate a glacial till drift over a sandstone bedrock.

*NB. This soil assessment is undertaken in situ using visual and manual techniques and is **only** for the purpose of establishing the influence of site soils on tree growth. The assessment **must not** be relied upon to inform any engineering decisions.*

Development Proposal

- 5.1 Outline planning permission is being sought to develop site to provide residential housing, amenity space and associated infrastructure.



Tree Survey Methodology

- 6.1 All trees within and adjacent to the site have been assessed where they are within 15 m of any area that may be disturbed as a result of the proposed development and have a stem diameter over 75mm at 1.5 metres. Measurements have been taken in accordance with the procedures and protocols set out in BS 5837: 2012 and the Forest Mensuration Handbook. Height measurements are approximate unless otherwise stated. Trees have been assessed as individuals, groups or woodlands as appropriate. Where access to trees has been restricted, either as a result of their situation on private land or where vegetation or ground conditions are unfavourable, an estimation of trunk diameter has been made. This entails using a set of callipers to approximate the measurement. Estimates are rounded up to provide a margin. This technique has only been used where there is a sufficient buffer between the RPAs and any area disturbed by development. Where trees are in woodlands or groups only the outside edge trees are assessed unless there are larger trees with RPAs or crowns that would overlap the edge trees.
- 6.2 BS 5837: 2012 provides the framework through which tree can be categorised in terms of their health, amenity value and long-term

viability for retention on a development site. There are four categories, A,B,C & U.

Category A: Trees of high quality and value in such a condition as to be able to make a substantial contribution (a minimum of 40 years)

- 1 Trees that are particularly good examples of their species, or essential components of groups or formal arboricultural features.
- 2 Trees, groups or woodlands that provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance.
- 3 Trees, groups or woodlands of significant conservation, historical, commemorative or other value.

Category B: Trees of moderate quality and value in such a condition to make a significant contribution (a minimum of 20 years)

- 1 Trees that might be included in a higher category but are downgraded because of impaired condition.
- 2 Trees present in numbers, usually as groups of woodlands that form distinctive landscape features.
- 3 Trees with clearly identifiable conservation or other cultural benefits.

Category C: Trees of low quality and value currently in adequate condition to remain until new planting could be established. Trees in this category would not usually be retained if they would pose a significant constraint to development.

Category U: Trees in such a condition that their existing value would be lost within 10 years and which should, in the current context be removed for arboricultural reasons.

The most significant or valuable trees are placed in the categories, A & B. Site design should make provision to retain trees in these categories and most Local Planning Authorities will insist upon this (or in exceptional circumstances will require that significant compensation planting is incorporated into the design), whilst trees that should not be a constraint to development are recorded with a C category. Trees categorised as U are in a poor condition and should be removed prior to the commencement of work.

- 6.3 Where trees are to be retained, it is necessary to ensure that they are suitably protected to avoid damage during the construction phase of the development. It is also important to consider any long term implications; such as issues with shading or leaf litter that may arise as a result of tree retention.
- 6.4 To ensure that trees are not adversely affected by the construction works it is necessary to:
 - a. The avoidance of physical damage to the aerial parts of the trees (i.e. Impact and other damage to trunk and branches)

- b. The avoidance of damage to retained trees as a result of the severance or other physical damage to their roots
- c. Preserve of the character of the soil, through the avoidance of any activity that would cause it to become compacted or otherwise disturbed or disrupted, and to avoid contamination by potentially harmful substances
- d. To ensure free gaseous exchange is permitted between the upper layers of soil and the atmosphere
- e. To ensure adequate (but not excessive) water supply to the soil and hence to tree roots

This would normally be achieved by establishing an area, known as a construction exclusion zone (CEZ) around each tree. The CEZ is derived from the root protection area (RPA) and the crown spread of the tree. The RPA represents the area occupied by the tree's root system and is calculated for each tree based on its stem diameter and the ground conditions present taking account of and any impediment to rooting. The RPA should represent the most probable position of the tree's root system.

The CEZ must be considered sacrosanct and be maintained completely undisturbed. No construction should take place within this area and it should not be used for storage of materials or fuels. Access for vehicles machinery or personnel is prohibited and to ensure that it is not damaged by construction activity it must be suitably protected during the construction phase, using robust fencing or alternative ground protection methods, to prevent disturbance and damage occurring.

- 6.5 In addition to the implications that a new development may have for existing trees it is also important to assess any long-term issues or concerns that may arise as a result of retaining trees close to a new dwelling or structure. This can include problems associated with leaf litter and other debris that may fall from trees, the potential that a tree has to cause damage to a structure in the future, any on-going maintenance requirements that may arise and the level of shade that the tree may cast, it is particularly important to consider the effects of shading where trees are to the south of houses and gardens. Trees can also cause feelings of apprehension to the occupiers of nearby buildings and can have an over bearing impact on a property if adequate space is not provided.
- 6.6 The report assesses all trees with regard to their size, position and natural characteristics, and taking into account of their future growth makes provides recommendations as to their long-term suitability for retention.

Arboricultural Assessment

- 7.1 Full details of the tree surveyed are provided in appendix A. and their relative positions, crown spreads, root protection areas are indicated on the attached plans.
- 7.2 No checks have been undertaken to establish the status of the trees with regards to Tree Preservation Orders or Conservation Areas, however all the trees will be subject to the Forestry Act (see section 3.1) and all hedges subject to the Hedgerow regulations (see section 3.3). No trees or hedges should be felled, lopped, topped or in otherwise removed or damaged without prior permission from the relevant authority.
- 7.3 The survey recorded four individual trees, one group of trees and two areas of woodland which are categorised as follows:

Category	Quantity
Category A: Trees of high quality and value in such a condition as to be able to make a substantial contribution (a minimum of 40 years)	2
Category B: Trees of moderate quality and value in such a condition to make a significant contribution (a minimum of 20 years)	3
Category C: Trees of low quality and value currently in adequate condition to remain until new planting could be established. Trees in this category would not usually be retained if they would pose a significant constraint to development.	2
Category U: Trees in such a condition that their existing value would be lost within 10 years and which should, in the current context be removed for arboricultural reasons.	0

Arboricultural merits and the significance of the trees in the landscape

- 7.4 There are no trees within the main body of the site, however it is bounded by a belt of woodland and scrub woodland along the north east and south boundaries. This woodland provides some degree of screening of the site and has value as a habitat. The woodland would benefit from management.
- 7.5 There are no veteran or potential veteran trees on the site and there are no areas of ancient woodland on or adjacent to the site.

Design Considerations

- 7.6 The site design should seek to incorporate the category A & B trees into the layout.
- 7.7 In addition to the ensuring that the trees are not damaged by the construction process, consideration should also be given to the future implications associated with the retention of the trees in the terms of their influence on the new properties. To ensure a harmonious relationship between the trees and the proposed dwellings it is necessary to allow adequate separation so that the trees do not exert

- an overbearing influence, are so close as to promote worries about tree safety and avoid problems associated with leaf litter and shading.
- 7.8 It is particularly important to consider the effects of shading where trees are to the south of houses and gardens and a tree shade plan showing the shadow trace of the trees on March 21st (spring equinox) along with the position of the tree shadows (category A & B trees only) at 12pm on that day is provided with this report to assist with site layout design. Ideally the layout should take account of existing retained trees and any new planting, with consideration to their ultimate size and density of the foliage and that garden areas should be designed to meet the normal requirement for direct sunlight for at least part of the day. Building Research Establishment guide to good practice (BR209) Site Layout Planning for Daylight and Sunlight advises that, in order to appear reasonably sunlit a dwelling should have at least one main window wall that faces within 90° of due south and that on this wall, all points on a line 2m above ground level are within 4m of a point which receives at least a quarter of the annual probable sunlight hours. The guide also advises that for gardens to appear adequately sunlit, no more than two-fifths and preferably no more than a quarter should be prevented from receiving any sunlight on 21st March.
- 7.9 To assess impact of shading, an evaluation was undertaken of the indicative site layout using the ArborShadow R4 software. The shadow positions for the retained trees at 12pm on 21st March are shown on the Tree Constraints Overlay Plan and this indicates how the site will potentially be affected by shade at some point during the day on this dates. It can be seen that shading mainly occurs during the morning and from around 1pm the majority of the site enjoys unobstructed sunlight.
- 7.10 To ensure that trees do not become overbearing or exert a dominating effect on a property it is recommended that no occupied property is sited within a distance equivalent to 50% of the mature height of a tree (see appendix A), which should be increased to 60% if the tree is directly to the south of a property. There should also be a distance of at least 1.5 metres from the edge of the crown to the building at the closest point, this must take account of the ultimate spread of the tree. No more than 40% of a garden area should be beneath the crown of a tree, and the remaining area should not be shaded by the tree.
- 7.11 All services both under and over ground must be located outside the CEZ around retained trees. All services must be installed in compliance with NJUG chapter 4 recommendations.

Arboricultural Impact

Impact	Category A	Category B	Category C	Category U
Tree Removal				
Facilitative Pruning Required				
RPA Encroachment				
Potential Shading				
Proximity Issues				

- 7.12 This is an outline application and a finalised layout has not yet been prepared, however it can be seen that the site can be developed without the need to remove high quality trees.

Landscaping of the Development

- 7.13 The development provides an opportunity to enhance the existing tree stock in the area through additional new planting. A detailed landscape scheme can be prepared following a finalisation of the site layout.

Arboricultural Operations

Permission to remove any tree must be obtained from the Local Planning Authority and must not be undertaken until all pre-commencement conditions have been discharged.

- 8.1 Tree removal and pruning will be required, subject to a grant of planning permission, to implement this development. It is recommended that the work should be undertaken by a suitably qualified person, holding public liability insurance for the sum of £5,000 000. All operators must hold relevant NPTC certificates. A site specific risk assessment must be prepared and operators must work to a health and safety method statement. The use of Arboricultural Association Approved Contractors www.trees.org.uk/find-a-professional/Directory-of-Tree-Surgeons is recommended.
- 8.2 The contractor undertaking the work is responsible for any loss or damage arising as a result of the operations and agrees to indemnify the owner against such occurrences.

Interim Arboricultural Method Statement

- 9.1 This arboricultural method statement (AMS) sets out the details of tree protection measures afforded to the retained trees on and adjacent to the site.
- 9.2 This document should be read in conjunction with the Tree Protection Plan (TPP) ref which will be prepared once the final layout is agreed. The TPP indicates the construction exclusion zone (CEZ) that must be maintained around each retained tree. These areas must remain undisturbed during the construction process and must be protected using suitable fencing as specified.

-
- 9.3 Copies of the TPP & the AMS must be available on site and all tree protection requirements explained to all persons undertaking activities on the site during the site induction process.
 - 9.4 All tree protection measures must be installed and inspected prior to bringing onto the site any plant, materials or equipment or undertaking any construction works or demolition or any arboricultural works. The LPA must be informed in writing once the tree protection measures are installed.
 - 9.5 The site is to be inspected by the consulting arboriculturalist in accordance with the schedule of inspections.
 - 9.6 All measurements are given in metric using standard abbreviations.

Fencing and Ground Protection

- 9.7 The TPP indicates the position all protective fences.
- 9.8 Protective fencing will comprise 'herres' fencing panels which are to be fixed and braced securely or as agreed with the Local Planning Authority.
- 9.9 No ground protection is specified for this site.
- 9.10 The protective fencing and ground protection must be inspected on installation and will remain in place until completion of the construction phase and then only removed with the consent of the LPA.
- 9.11 Other than works approved in writing by the LPA, no works including storage or dumping of materials shall take place within the exclusion zones defined by the protective fencing.

General Precautions

- 9.12 No materials that are likely to have an adverse effect on tree health such as oil, bitumen or cement will be stored or discharged within 10m of the trunk of a tree that is to be retained or within any part of the CEZ. An emergency spill kit of appropriate capacity and suitable for use with all fuels, oils and chemicals brought on to site must be available at all times.
- 9.13 No fires will be lit within 20m of the trunk of any tree that is to be retained.
- 9.14 Storage and mixing areas must be outside the CEZ and must be identified prior to the commencement of the construction work. Contractor parking should be off-site.
- 9.15 Access to the work area is via the main site entrance and must not traverse the CEZ.
- 9.16 All service and drainage routes, below or above ground must avoid the CEZ. All services are to be installed in accordance with NJUG volume 4 Guidelines.
- 9.17 To ensure that all tree protection measures are properly installed it is recommended that the site be monitored by Shields Arboricultural

Consultancy to the following schedule. Details of the findings and photographic evidence of the site inspection visits will be reported to the LPA by email within 24 hrs of the visit.

Schedule of Inspection

1. TBA

9.18 Prior to the commencement on site of any work, a competent person is to be appointed to monitor the day to day activities on site. In the case of a tree being damaged or where an unexpected event arises it will be for this person to contact Shields Arboricultural Consultancy to seek advice on contingency measures.

S.J.A. Shields

Uni Cert For. & F.P. (Bangor)

P. Dip. Arb. (RFS), MSc. Arb. & Urban For. (UCLan)

M.Arbor.A, MICFor.

Chartered Forester

2nd August 2018

Arboricultural Assessment

Ref. No.	Species	Top Height	Stem Dia mm	N	E	S	W	CC	Age	Rem Cont	Cat	RPA m ²	Notes	AIA
G1	Prunus cerasifera (Cherry Plum), Robinia pseudoacacia (Locust Tree), Fraxinus excelsior (Ash) Prunus spinosa (Blackthorn)	14	280 (max)	3	3	3	3	1	EM	20+	B2	35	Condition: Fair Notes: Small group of tree growing within an area of scrub and forming a woodland belt. Would benefit from some level of management. RPAs will be constrained by existing hard standing in the site.	Reasonably attractive feature helps to screen site from the adjacent highway. G1 should be retained and incorporated into the site layout if possible.
T2	Quercus robur (Common Oak)	17	500, 480	5.5	7	7.3	6.2	2	EM	20+	A2	218	Condition: Good Notes: Significant tree forming part of G1 but with value as an individual. RPA will be constrained by existing hard standing in the site.	Prominent tree that can make a contribution to the site and wider amenity. T2 should be retained and incorporated into the site layout.
T3	Quercus robur (Common Oak)	17	340	5	6	3.2	3.8	2	EM	20+	C2	52	Condition: Good	T3 is a minor amenity forms part

													Notes: Growing very close to and affected by existing hard standing. T3 has a lean to the east of around 20 deg. RPA will be constrained by existing hard standing in the site.	of the wider woodland group G1 but is not significant component. Any loss of amenity associated with the removal of this tree could be mitigated through re-planting at the site.
W4	Fraxinus excelsior (Ash), Quercus robur (Common Oak), Salix caprea (Goat Willow)	14	400 (avg.)	3	3	3	3	2	M	20+	B3	72	Condition: Fair Notes: Area of mixed native broadleaf woodland forming a screening belt along the north east boundary of the site. Is becoming slightly overgrown and would benefit from some level of management. RPAs will be constrained by existing hard standing in the site.	Reasonably attractive feature helps to screen site from the adjacent highway. W4 should be retained and incorporated into the site layout if possible.
T5	Quercus robur (Common Oak)	17	850	7	7.1	5.4	3.2	5	M	40+	A2	327	Condition: Good	Prominent tree that can make a contribution to the

													Notes: Very significant tree forming part of W4 but with value as an individual.	site and wider amenity. T5 should be retained and incorporated into the site layout.
T6	Quercus robur (Common Oak)	11	350	6	6	6.2	6.3	2	EM	20+	B2	55	Condition: Good Notes: On land to the north of the site. RPA will be constrained by existing hard standing in the site and changes in ground level on boundary of car parking area.	Reasonably attractive tree. Off site and should be retained and incorporated into the development.
W7	Crataegus monogyna (Hawthorn), Salix caprea (Goat Willow)	10	250	3	3	3	3	1	EM	20+	C2	28	Condition: Fair Notes: Area of scrub woodland to the north of the site. RPAs will be constrained by existing hard standing in the site.	Minor specimens in terms of public amenity, provide some value as a screen.

Ultimate Heights of Main Species

Oak 18

Ash 18

Hawthorn 10

Notes

BS 5837: 2012 provides the framework through which tree can be categorised in terms of their health, amenity value and long-term viability for retention on a development site. There are four categories, A,B,C & U.

Category A: Trees of high quality and value in such a condition as to be able to make a substantial contribution (a minimum of 40 years)

- 1 Trees that are particularly good examples of their species, or essential components of groups or formal arboricultural features.
- 2 Trees, groups or woodlands that provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance.
- 3 Trees, groups or woodlands of significant conservation, historical, commemorative or other value.

Category B: Trees of moderate quality and value in such a condition to make a significant contribution (a minimum of 20 years)

- 1 Trees that might be included in a higher category but are downgraded because of impaired condition.
- 2 Trees present in numbers, usually as groups of woodlands that form distinctive landscape features.
- 3 Trees with clearly identifiable conservation or other cultural benefits.

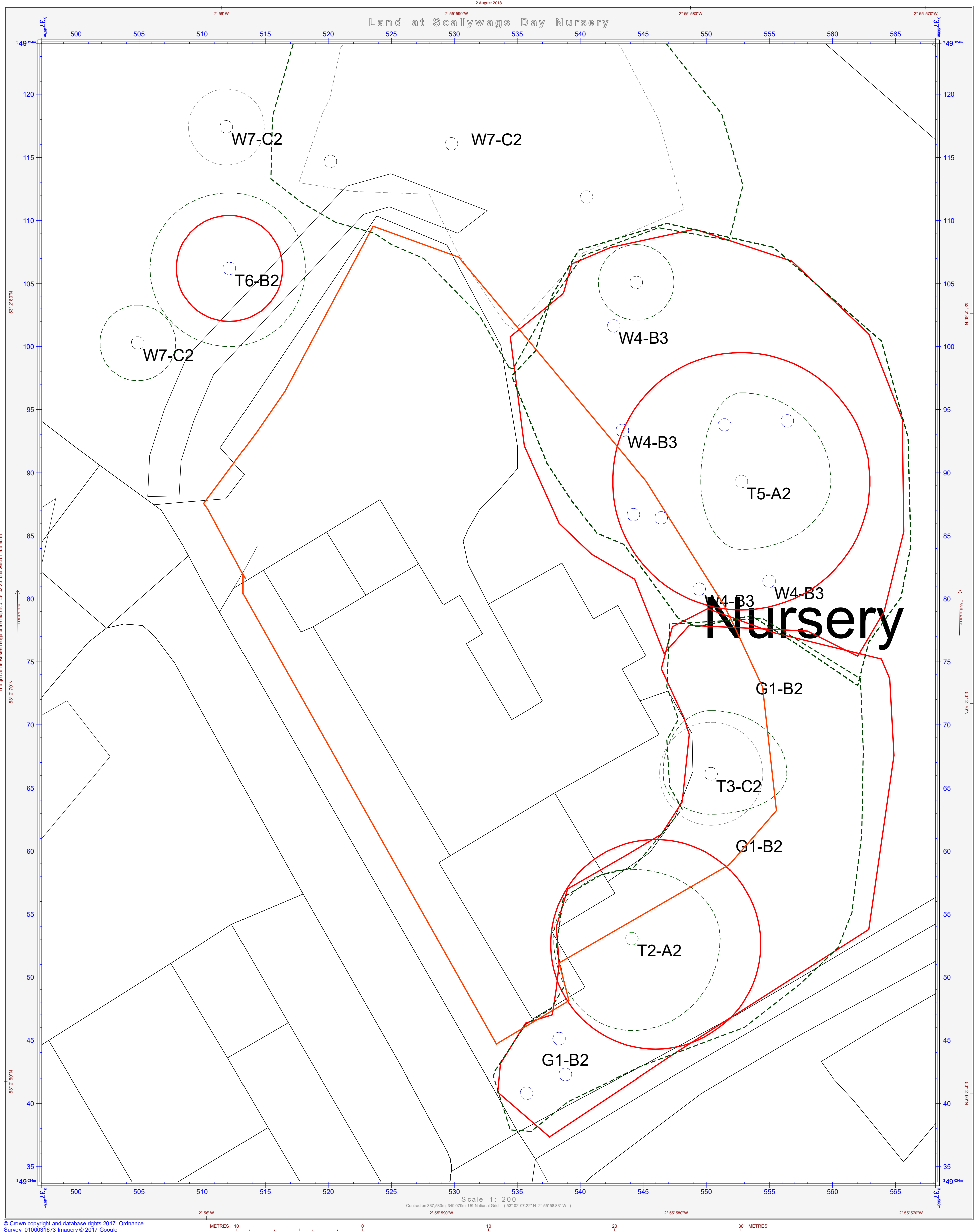
Category C: Trees of low quality and value currently in adequate condition to remain until new planting could be established. Trees in this category would not usually be retained if they would pose a significant constraint to development.

Category U: Trees in such a condition that their existing value would be lost within 10 years and which should, in the current context be removed for arboricultural reasons.

Bat potential has been assessed in accordance with the guidance provided in BS 8596:2015 and is at the level of a non-specialist scoping survey. This assessment is for preliminary advice and does not negate the requirement for a specialist ecological survey

Key

Tag No	Identification number for tree	Species	Species of tree
Top Height	Estimated height of tree	Stem Dia.	Diameter of stem at 1.5 metres
Stems	Number of stems	N, E, S, W	Crown spread at compass points
CC	Crown Clearance	FSB	Direction of first significant branch
Rem. Cont	Remaining safe life expectancy in years	RPA	Root protection area in m ²
Cat.	BS Category (see above)	AIA	Arboricultural Implication Assessment
Age	Y - Young Trees SM Semi Mature EM Early Mature M Mature LM Late Mature exceeds normal life expectancy for species VET Veteran Tree		
Condition	Good Relatively free from defects and / or major pests and diseases Fair Some defects, which could be addressed through tree surgery or minor pests or early symptoms of diseases Poor Substantial defects or terminal decline Dead Dead		



Shields Arboricultural Consultancy

Tree & Woodland Management Solutions

Tree Constraints Plan
Scallywags Day Nursery
Bridge Road South
Wrexham Industrial Estate
Wrexham

- KEY
- T2 Tree Cat A
 - G1 Tree Cat B
 - T3 Tree Cat C
 - RPA
 - RPA Cat C
 - Canopy Spread
 - Woodland
 - Boundary

Drawing No: SDN/TCP/08/18/01

Drawn By: S. Shields

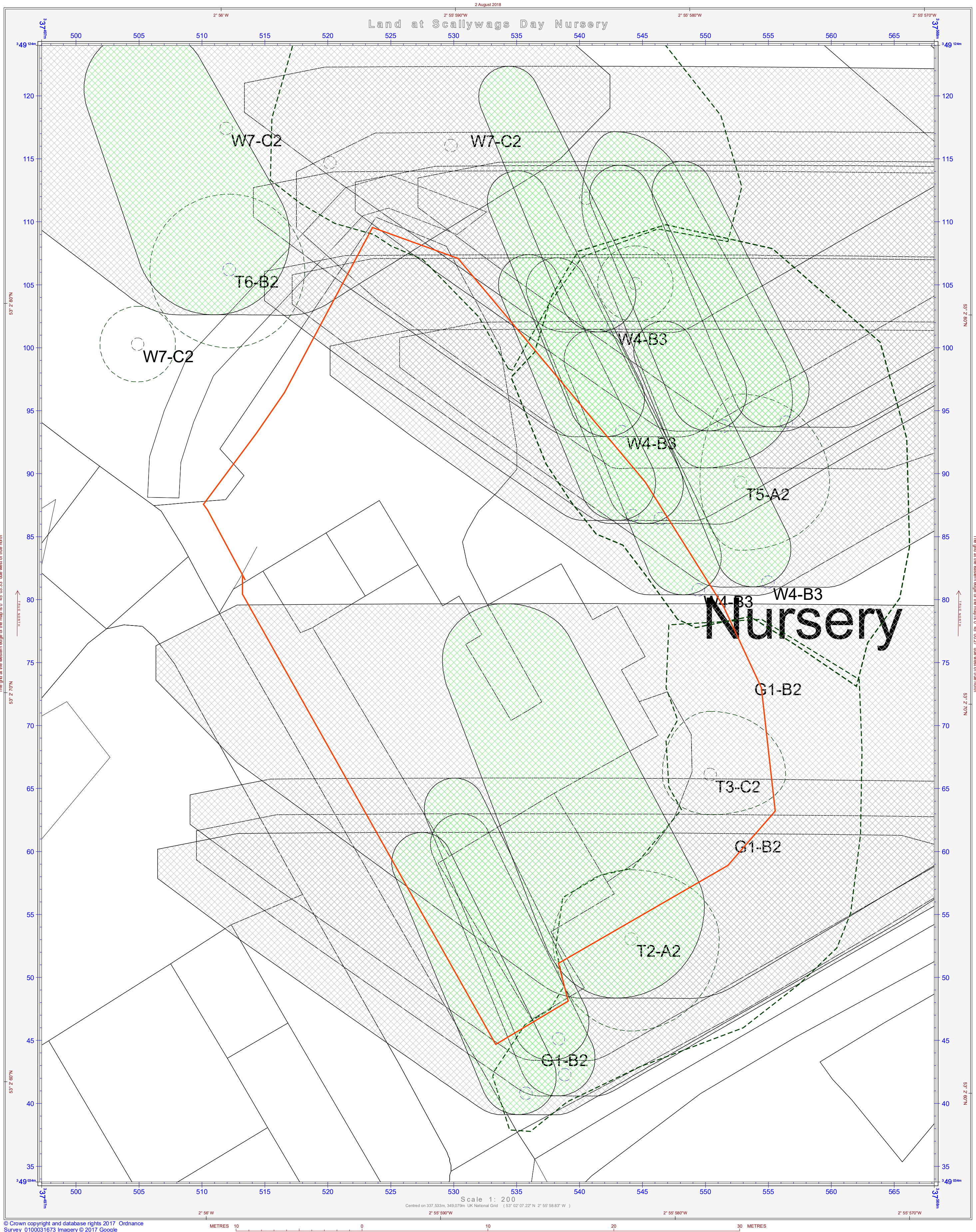
Scale: 1:200 @ A2

Date: 2nd August 2018

Revision:

Do not scale from this drawing all dimensions to be checked on site
Drawing is colour coded and a monochrome copy should not be relied upon

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Tree & Woodland Management Solutions

Tree Shade Plan March
Scallywags Day Nursery
Bridge Road South
Wrexham Industrial Estate
Wrexham

- KEY
- T2 Tree Cat A
 - G1 Tree Cat B
 - T3 Tree Cat C
 - Shadow Pos. 12pm
 - Shadow Path
 - Canopy Spread
 - Woodland
 - Boundary

Drawing No: SDN/TSPM/08/18/01

Drawn By: S. Shields

Scale: 1:200 @ A2

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