

Shields Arboricultural Consultancy

'Derwen Deg', 59 Oakhurst Road, Oswestry, Shropshire, SY11 1BL

Stephen Shields *Dip.Arb. (RFS), MJCFor, M.Arbor.A*

Tel: 07989 626923 / 01691 657189

Email: info@shieldsac.co.uk



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Arboricultural Consultancy

Arboricultural Implication Assessment

Reference:

HLG/06/11/AIA.

Rev:

14th June 2011

At the Site of:

21 Hillock Lane
Gresford
Wrexham

Commissioned by:

Blueprint
Architectural Services

Inspection commenced:
June 2011

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- | | |
|-------------------------------|---|
| ▪ Trees, Litigation & the Law | ▪ Tree-related Environmental Impact Assessments |
| ▪ Planning & Appeals | ▪ Subsidence Risk Assessment |
| ▪ Mortgage Surveys | ▪ Trees & Development Sites (BS 5837) |
| ▪ Tree Preservation Orders | ▪ Tree Hazard & Risk Assessment |



Arboricultural Implication Assessment

21 Hillock Lane
Gresford
Wrexham

Introduction

- 1.1 Shields Arboricultural Consultancy received instructions from Blueprint Architectural Services to provide an arboricultural implication assessment in respect of the above development site.
- 1.2 Planning permission is being sought for a two story extension to a residential dwelling.
- 1.3 A plan ref: AOI 5/003 indicating the development has been provided.

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. 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: 2005 '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 under 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

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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 is at 21 Hillock Lane, Gresford, a large detached period property set within its own private garden. The site is accessed from the south via a drive way on to Hillock Lane. The site shares boundaries with residential properties on all sides.
- 4.2 There are a number of trees on the site, the most significant being a row of 3 mature Lombardy Poplars, which form a striking arboricultural feature clearly visible from surrounding public areas. There are also a number of smaller trees that are part of the mature garden planting and provide a pleasant private amenity to the site.
- 4.3 The site is slightly elevated above the surrounding land but is not considered to be exposed. Soils appear to be free draining with no area of water logging and are expected to be the light sandy soils typical to the area.

Tree Survey Methodology

- 5.1 All trees adjacent to and within 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. Measurements have been taken in accordance with the procedures and protocols set out in BS 5837 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

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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 a woodland or groups only the outside edge trees are assessed unless there are larger trees with RPAs or crowns that would overlap the edge trees.

- 5.2 BS 5837: 2005 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 & R. 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, whilst trees that should not be a constraint to development are recorded with a C category. Trees categorised as R are in a poor condition and should be removed prior to the commencement of work.
- 5.3 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.
- 5.4 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

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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.

- 5.5 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. 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.
- 5.6 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 Implication Assessment

- 6.1 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.
- 6.2 The survey identified 11 trees on or adjacent to the proposed area of development. All trees can be satisfactorily protected and retained, although it is recommended that T11 be removed and replaced for reasons of good arboricultural management.
- 6.3 Trees 1, 2 and 4 will require some minor crown lifting to allow larger vehicles to access the site. This should not be detrimental to any of the trees. It was noted that a large mature oak tree stands off site but adjacent to the shared access driveway. Although the driveway is hard surfaced and presumably the ground beneath is compacted, it would be prudent to use ground protection in the area immediately beneath the crown of the tree and extended out to a distance on 2 metres either side. This will ensure that any additional loading does not damage the soil structure or roots beneath the drive.

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Arboricultural Operations

- 7.1 Tree works will be required subject to a grant of planning permission. All 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.
- 7.2 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.
- 7.3 Arboricultural works are to be completed prior to the erection of the tree protection fences and commencement of the development.
- 7.4 All trees over hanging the driveway are to be crown raised to provide a clearance of 5 metres. This is to be achieved by cutting back the descending branches to appropriate growth points.

Arboricultural Method Statement

- 8.1 This arboricultural method statement (AMS) sets out the details of tree protection measures and the methodology for all proposed works that affect the retained trees on and adjacent to the site.
- 8.2 This document should be read in conjunction with the Tree Protection Plan (TPP). 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 (except where work is identified and undertaken in accordance with this report) and must be protected using suitable fencing or ground protection as specified.
- 8.3 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.
- 8.4 All tree protection measures must be installed and inspected prior to bringing onto the site any plant, materials or equipment or undertaking any works or demolition, (with the exception of those works outlined in the arboricultural works specification detailed below) the LPA must be informed in writing once the tree protection measures are installed.
- 8.5 The site is to be inspected by the consulting arboriculturalist in accordance with the schedule of inspections.
- 8.6 All measurements are given in metric using standard abbreviations.

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Fencing and ground protection

- 8.7 The TPP indicates the position all protective fences and ground protection.
- 8.8 Protective fencing will comprise a 2.4 m high scaffold frame work with vertical and horizontal poles, driven into the ground to a depth of 0.6 m and well braced to resist impact. Onto this framework 'weldmesh' or 'herres' fencing panels must be securely fixed using scaffolding clamps.. The existing boundary fence will be acceptable where its location coincides with the tree protection fence.
- 8.9 Where ground protection is specified this will consist of a proprietary system such as Ground Guard. Where the ground protection is over the grassed area it must comprise a base layer of Ground Guard sheets covered by a geo textile and a cushioning layer of 150 mm of wood chippings. The Ground Guard track way is then laid over the top of this in the normal way. Where the ground protection is sited on top of the existing driveway and hard standing the track way can be laid directly on top of this. The track way specification must be suitable for the type of vehicles operating on the site.
- 8.10 The fencing and ground protection will remain in place until completion of the construction phase and then only removed with the consent of the LPA.
- 8.11 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

- 8.12 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.
- 8.13 No fires will be lit within 20m of the trunk of any tree that is to be retained.
- 8.14 Positions of site huts and toilets can be on top of the ground protection, all materials storage and mixing areas must be outside areas enclosed by fencing or protected with ground protection, as identified on the TPP. Contractor parking should be off site.
- 8.15 Access to the work area is via the route indicated on the TPP.
- 8.16 All service and drainage routes, below or above ground must be located outside the RPAs of all trees on site. All services are to be installed in accordance with NJUG volume 4 Guidelines.

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- 8.17 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.

Schedule of Inspection

1. On completion of erection of fencing and installation of ground protection prior to commencement of development works
2. Monthly through out project
3. On completion of project

Conclusion

- 9.1 If the recommendations in this report are followed all the trees on site can be satisfactorily protected.

S.J.A. Shields

**Dip. Arb. (RFS), M.Arbor.A, MICFor.
Chartered Forester**

14th June 2011

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Arboricultural Implications and Recommendations

Tree No.	Species	Height (m)	Stem Dia (mm)	Crown Spread (m)				Comments	RPA (m2)	Cat
				N	E	S	W			
T1	Holly (<i>Ilex aquifolium</i>)	11	325	3.9	3.7	4.4	NA	Structural Condition: Good Physiological Condition: Good RPA: Circular AIA: Tree may require some crown lifting to allow access to the site otherwise unaffected by the proposal.	48	B
T2	Yew (<i>Taxus baccata</i>)	8	319	4.3	3.6	0	NA	Structural Condition: Good Physiological Condition: Good RPA: Circular AIA: Will not be affected by the proposed development and can be satisfactorily protected.	45	C
T3	Hawthorn (<i>Crataegus monogyna</i>)	4	400 ms	1.9	1	NA	NA	Structural Condition: Good Physiological Condition: Good	50	C

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								RPA: Circular AIA: Will not be affected by the proposed development and can be satisfactorily protected.		
T4	Lombardy Poplar (<i>Populus nigra</i> 'Italica')	32	1044	2.9	5.3	3.4	2.2	One of a group of three trees that form an iconic arboricultural feature. . Structural Condition: Good Physiological Condition: Good RPA: Some ground constraints from nearby buildings. AIA: No construction activity to take place within the root zone of the tree. This tree can be protected to standards recommended in BS 5837 (2005) and retained. The tree is to the south west of the building and although will cast some shade, this will not be excessive owing to the narrow crown of the tree. There is sufficient separation distance between the new extension and the tree to prevent the tree having an overbearing influence on the property. It should also be noted that trees T7 & T9 are of a similar size and are already closer to the existing dwelling than T4.	452	A
T5	Purple leaf plum (<i>Prunus cerasifera</i> 'Atropupurea')	10	295	2.5	3.1	4.0	2.8	Structural Condition: Good Physiological Condition: Fair RPA: Circular AIA: Will not be affected by the proposed development and can be satisfactorily protected.	39	C

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T6	Purple leaf plum (<i>Prunus cerasifera</i> 'Atropupurea')	10	232	2.5	3.1	2.5	2	Structural Condition: Good Physiological Condition: Fair RPA: Circular AIA: Will not be affected by the proposed development and can be satisfactorily protected.	24	C
T7	Lombardy Poplar (<i>Populus nigra</i> 'Italica')	31	903	3.2	4.5	2.1	2 est.	One of a group of three trees that form an iconic arboricultural feature. . Structural Condition: Good Physiological Condition: Good RPA: Some ground constraints from nearby buildings. AIA: The proposed extension extends to the eastern edge of the T7's RPA. Although there may be some minor encroachment as a result of trench widths for the foundations this will be minimal affecting less than 2% of the RPA and at its periphery. This would easily be tolerated by the tree, which is in early maturity, of a vigorous species in good health and demonstrating excellent vitality for its age. In addition to the physical encroachment it would also be necessary to gain access and working space within the RPA. It is therefore proposed that ground protection is used to protect a portion of the RPA. This is indicated in the attached Tree Protection Plan and detailed in the method statement. As with T4 this tree is to the west of the new extension and will cast some evening shade, however this will not be excessive	369	A

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								owing to the narrow crown size of the tree and of no more impact than it has on the existing dwelling. Separation distance between T7 and the new extension are similar to those already experienced by the existing building and are not considered significantly overbearing to what is a relatively large house.		
T8	Purple leaf plum (<i>Prunus cerasifera</i> 'Atropupurea')	8	200	1.9	3.0	3.1	1.7	Structural Condition: Good Physiological Condition: Fair RPA: Circular AIA: Will not be affected by the proposed development and can be satisfactorily protected.	18	C
T9	Lombardy Poplar (<i>Populus nigra</i> 'Italica')	30	935	2.9	5.1	3.4	2 est.	One of a group of three trees that form an iconic arboricultural feature. . Structural Condition: Good Physiological Condition: Good RPA: Some ground constraints from nearby buildings. AIA: Although no construction activity is to take place within the RPA of T9 there will be a requirement to gain access through the RPA. It is therefore proposed that ground protection is used to protect a portion of the RPA. This is indicated in the attached Tree Protection Plan and detailed in the method statement. T9 Has no greater influence over the new extension in terms of shading or its proximity than it currently has over the existing dwelling.	396	A

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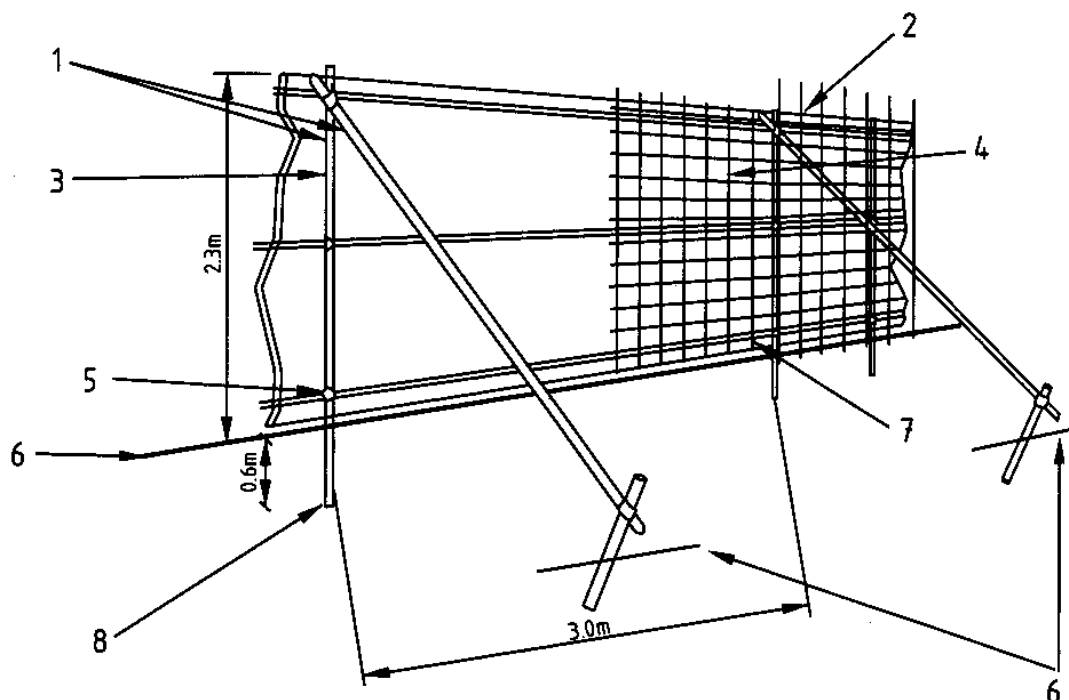
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T10	Purple leaf plum (<i>Prunus cerasifera</i> 'Atropupurea')	8	300 ms	NA	2.7	1.3	0.5	Structural Condition: Good Physiological Condition: Fair RPA: Constrained by adjacent ornamental pond. AIA: Will not be affected by the proposed development and can be satisfactorily protected.	28	C
T11	Damson (<i>Prunus sp.</i>)	8	311	NA	2.3	2.4	1	Structural Condition: Fair Physiological Condition: Poor RPA: Circular AIA: An old tree in declining condition, it is recommended that this tree be removed and replaced as part of a landscape scheme.	44	R



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Recommended Design of Tree Protection Fencing



1 Standard scaffold poles **2** Uprights to be driven into the ground **3** Panels secured to uprights with wire ties and/or standard scaffold clamps **4** Weldmesh wired to the uprights and horizontals **5** Standard clamps **6** Ground level **7** Wire twisted and secured on inside face of fencing to avoid easy dismantling **8** Approx. 0.6 m driven into the ground

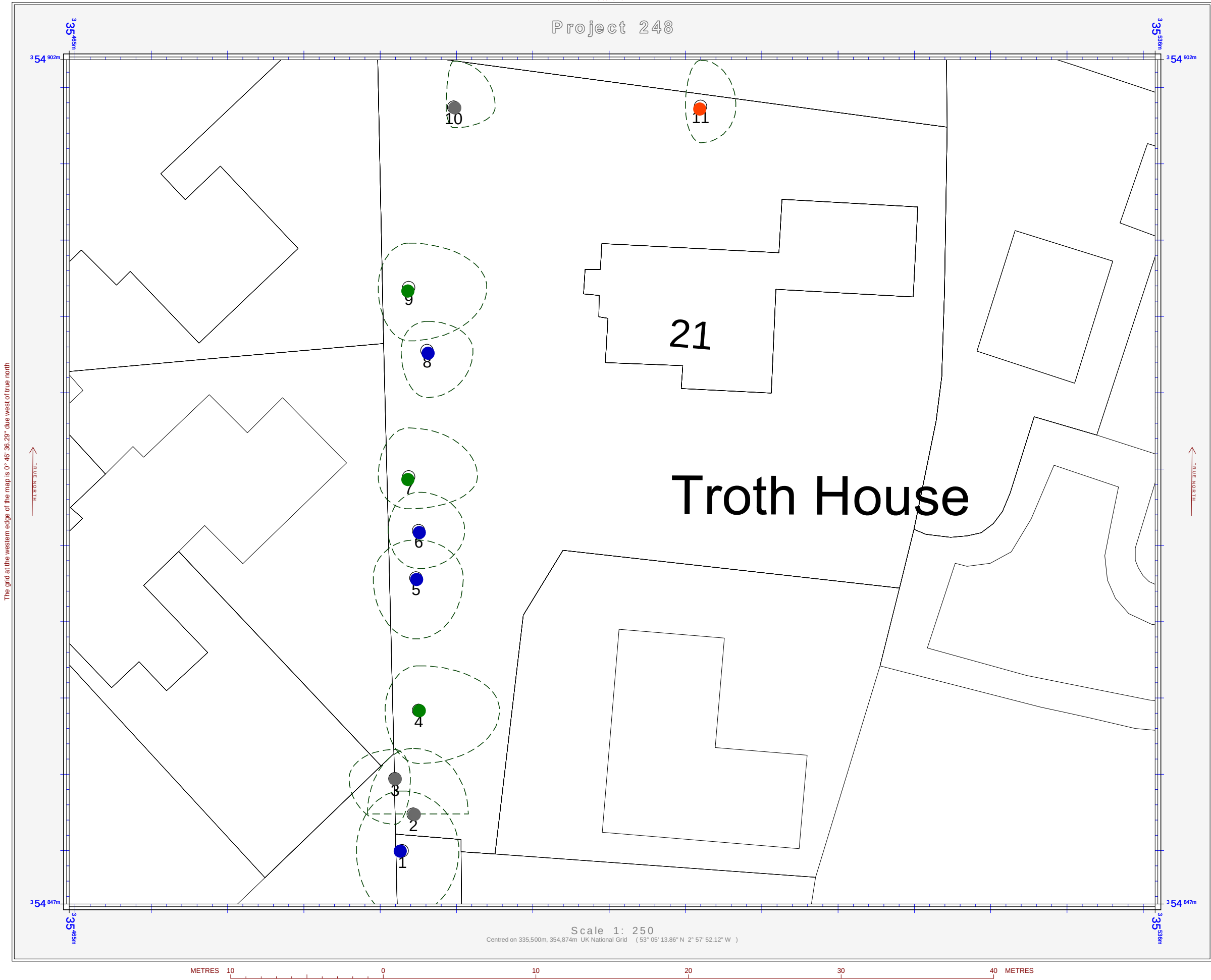
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'Derwen Deg', 59 Oakhurst Road, Oswestry, Shropshire, SY11 1BL

Tel: 07989 626923 | 01691 657189

Email: shields.arbconsult@yahoo.co.uk

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Tree Location Plan

21 Hillock Lane
Gresford
Wrexham

- Tree Cat A
- Tree Cat B
- Tree Cat C
- Tree Cat R
- Canopy Spread

Drawing No: HLG/TLP/06/11/01
Drawn By: S. Shields
Scale: 1:250 @ A3
Date: 14th June 2011
Revision:

Do not scale from this drawing

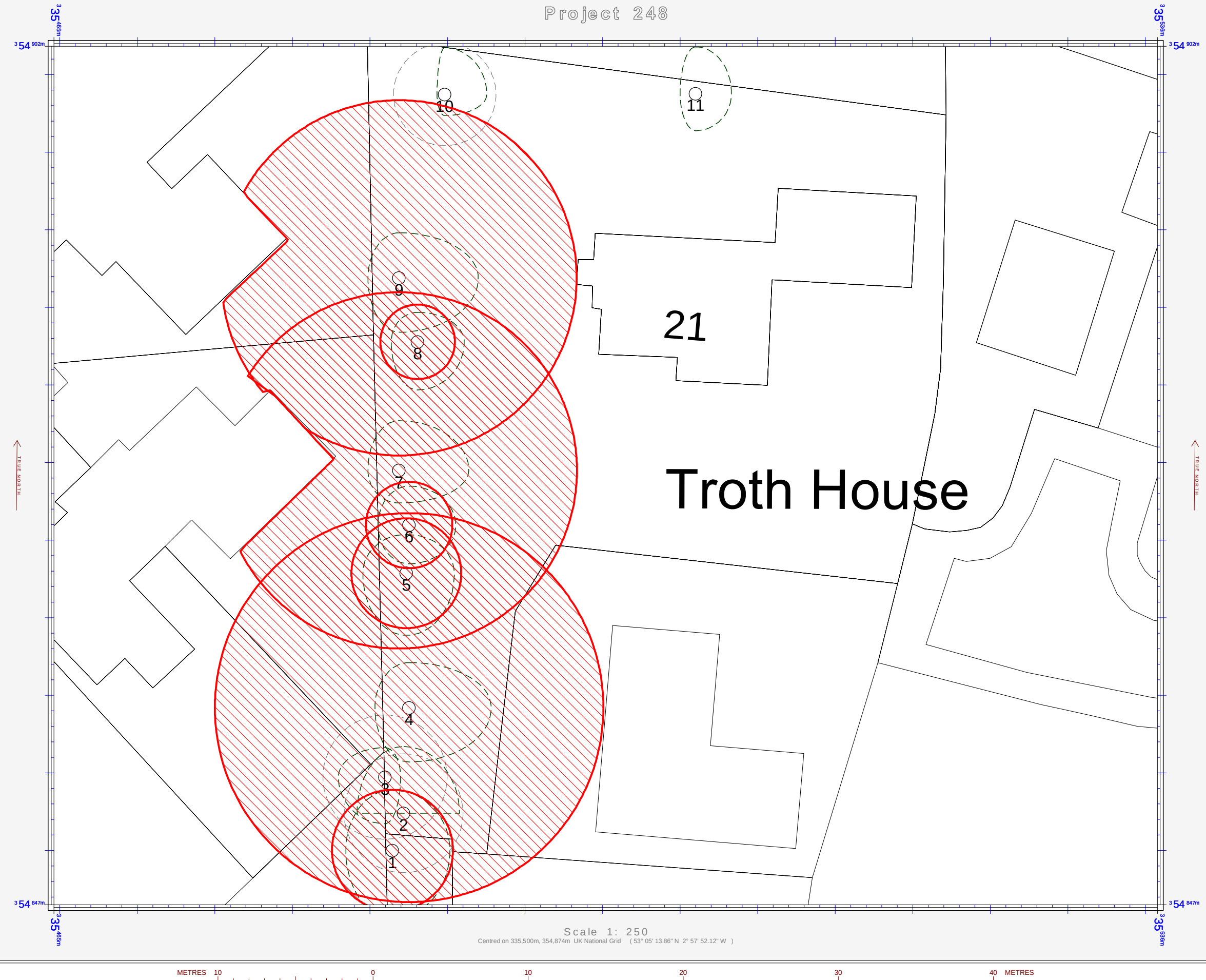
Shields Arboricultural Consultancy
'Devon Deg' 59 Oakhurst Road, Oswestry,
Shropshire, SY11 1BL
Tel: 01691 657189 / 07989 626923

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The grid at the western edge of the map is 0° 46' 36.29" due west of true north

The grid at the eastern edge of the map is 0° 46' 33.21" due west of true north



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Root Protection Area

21 Hillock Lane
Gresford
Wrexham

 RPA
 RPA Cat C

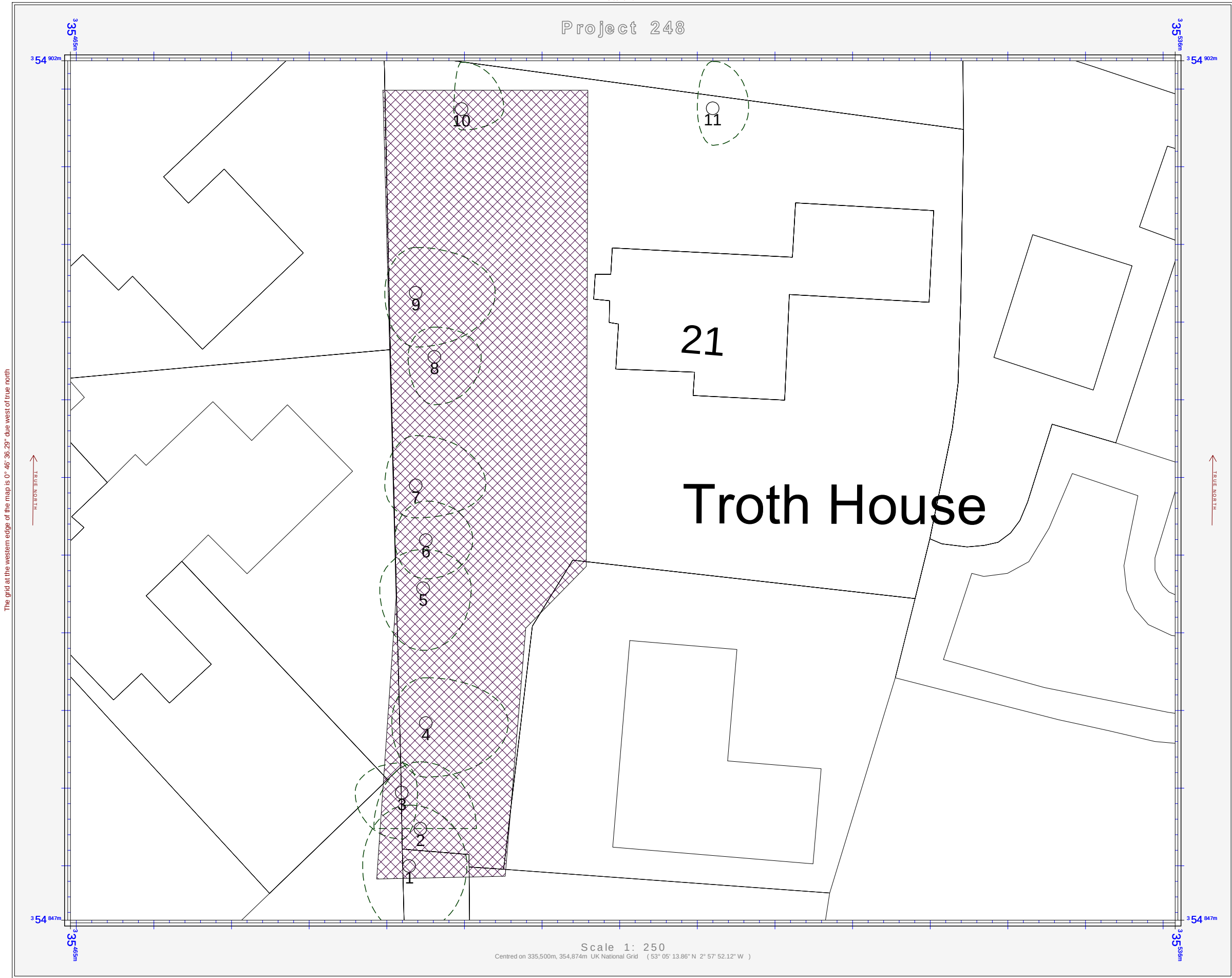
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Drawn By: S. Shields
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'Derun Deg' 59 Oakhurst Road, Oswestry,
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Tel: 01691 657189 / 07989 626923

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Construction Exclusion
Zone

21 Hillock Lane
Gresford
Wrexham



CEZ

Drawing No: HLG/CEZ/06/11/01

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Scale: 1:250 @ A3

Date: 14th June 2011

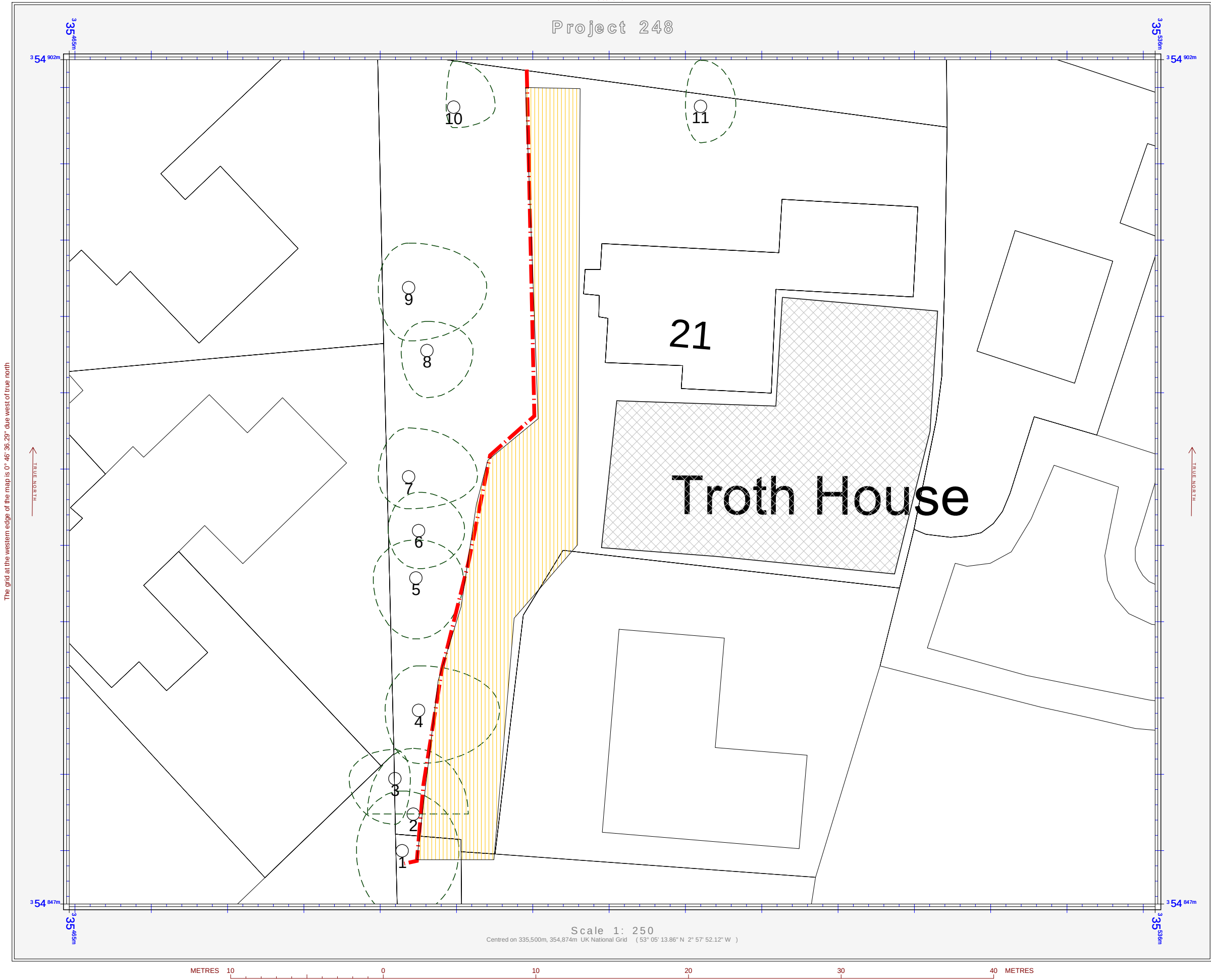
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'Deun Deg' 59 Oakhurst Road, Oswestry,
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Tel: 01691 657189 / 07989 626923

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Tree Protection Plan

21 Hillock Lane
Gresford
Wrexham

- Ground Protection
- Storage and Mixing Area
- Tree Protection Fencing
- Canopy Spread
- Tree

Drawing No: HLG/TPP/06/11/01
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