

Shields Arboricultural Consultancy

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Arboricultural Implication Assessment

BHB/09/11/AIA
Rev A

At the Site of:

Bank House
Cadney Lane
Bettisfield
Wrexham

Commissioned by:

Mr. T. Shakespeare

Inspection commenced on:
September 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 |



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Arboricultural Implication Assessment

Bank House
Cadney Lane
Wrexham

Introduction

- 1.1 Shields Arboricultural Consultancy received instructions from Mr T. Shakespeare to provide an arboricultural implication assessment in respect of the above development site.
- 1.2 Planning permission is being sought to develop the land to provide one residential dwelling, following the demolition of an existing dwelling.

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 amended, to protect trees through the use of Tree Preservation Orders.

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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 site of the proposed development is an area of land located to the north of Cadney Lane, Bettisfield. The site is roughly triangular in shape and extends to approximately 0.2 hectares. The site is bounded by open fields to the north, the road to the south and by residential dwellings to the east. The site is level and at an elevation of approximately 85m ASL, it is slightly exposed. Soils appear to be fertile and free draining with no sign of water logging.
- 4.2 The site is currently occupied by an existing house and out buildings. There are a number of trees present on the site, including a large sycamore close to the front of the existing dwelling an assortment of ornamental fruit trees, a group of three trees to the front of the site and a hedgerow on the north boundary.

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 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

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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 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

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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 16 trees on the proposed development plot of which the most important trees in terms of public amenity were trees T1, T2 and T3 adjacent to the front (south) boundary of the site and forming a small group visible from the road, T4 to the south of the existing dwelling and tree T11 – T14 growing within the hedgerow on the north boundary. The remainder of the trees were of minor value in terms of public amenity and any loss of this amenity could be satisfactorily ameliorated through new landscape planting of the site post development.
- 6.3 Following discussions with the owner, it was considered that it would be impractical to attempt to incorporate tree T4 into the layout of the site and although it is recognised that T4 does provide some amenity to the area it is considered that its loss could be satisfactorily ameliorated through the planting of additional large maturing trees to the front of the site. The owner has also indicated a desire to retain T5 if possible. This tree is in below average condition and it may be difficult to retain it in practice. For the purpose of the AIA it should be considered that this

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tree is to be removed and any loss of amenity ameliorated through the landscaping of the site post construction.

- 6.4 The hedgerow on the north boundary will be laid as part of the landscaping of the site. Other trees situated to the west and east of the site are over 15 metres from the area of proposed operations and will not be affected by the development. These trees will be protected by appropriate fencing.
- 6.5 A waste treatment plant has already been installed on site. This was exempt from planning permission and fully complied with building regulations. The installation was in the area to the south west of T4 and may have affected roots of trees T5, & T6. These are not significant specimens, category C & category R and it is a recommendation of this report that T6 is removed and T5 only retained in the short term until new landscape planting becomes established.
- 6.6 A pavement is to be formed along the boundary of the property and the road. This is a planning requirement attached to the development of neighbouring land. This work may impact on the root system of trees T1, T2 & T3, however this is work to be undertaken by a third party and is outside the control of the owner of Bank House.

Arboricultural Operations

- 7.1 Tree removal 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.

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

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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.

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.
- 8.9 The ground protection specified will consist of a proprietary system such as Ground Guard track way, (http://www.greensward.co.uk/ground-guards_access_system.htm) assembled to form a 'cushion system' in the following manner. A layer of geotextile is laid over the existing ground on to which a base layer of Ground Guard sheets is placed followed by the 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. The edges are retained by timber rails, held in place by timber stakes. The track way specification must be suitable for the type of vehicles operating on the site. An alternative for use with pedestrian traffic or light vehicles would be to use 19mm ply-board as an alternative to Ground Guards.
- 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.

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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 avoid the RPAs. All services are to be installed in accordance with NJUG volume 4 Guidelines.
- 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 The majority of the trees on the site are of relatively low public amenity value and comprise relics of past garden planting and trees which have naturally established. A general lack of maintenance has resulted in the degradation of the tree stock.
- 9.2 This part of Cadney Lane is characterised by a number of new dwellings built within the garden areas of older, often dilapidated properties. The development has significantly altered the character of the area and the landscape should be considered in its new context. With regard to this it is considered that it would be beneficial to instigate new planting on the site, and whilst retaining the best specimens from previous plantings, promote the use of new trees as the future amenity assets.

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- 9.3 If the recommendations of this report are followed, the landscaping and amenity of the site will be much improved in the medium to long term and the short term impact will be minimal.

S.J.A. Shields

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

28th September 2011

Rev A

18th December 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	Scots Pine (<i>Pinus sylvestris</i>)	12	335	2.5	2.3	4.1	3.9	Structural Condition: Good Physiological Condition: Good RPA: Will have been influenced by the adjacent road and driveway and thus biased towards the more amenable soils in the garden area to the west of the site. AIA: T1 is a part of a group of three trees to the front of the site. This group provides a reasonable amenity value and adds age diversity to the site. This tree can be protected and retained.	51	B2
T2	Sycamore (<i>Acer pseudoplatanus</i>)	14	410	6.6	5.4	4.3	3.4	Structural Condition: Fair. Minor decay cavity at the base, not considered significant at this time but it is recommended that the tree be re-inspected after the completion of the development. Physiological Condition: Good RPA: As T1 AIA: As T1	76	B2
T3	Birch (<i>Betula</i>)	12	300	2.9	1.1	1.8	3.1	Structural Condition: Good	41	B2

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	<i>pendula)</i>							Physiological Condition: Good RPA: As T1. AIA: As T1		
T4	Sycamore (<i>Acer pseudoplatanus</i>)	14	484	5.7	6.4	5.8	7.3	Structural Condition: Good Physiological Condition: Good RPA: Circular AIA: The tree is in very close proximity to the existing and the proposed dwelling and can not be satisfactorily incorporated into the design layout of the site. It is proposed that this tree be removed and that the impact of this loss is ameliorated through the planting of new trees on the boundary of the site.	106	B1
T5	Willow (<i>Salix sp</i>)	12	500	3.5	7.0	6.0	7.4	Structural Condition: Fair Physiological Condition: Fair RPA: Circular AIA: The tree is in a below average condition, both structurally and in terms of its health. There has already been some disturbance to the root system as a result of previous works on and adjacent to the site and it is considered that the tree is unlikely to survive in the long term. The owner has expressed a desire to retain the tree and will attempt tree surgery to remediate the structural problems. In my view the tree can only provide a benefit in the short term	113	C

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								and it would be practical to consider succession planting to ameliorate a future loss. To this end it is reasonable that the tree should not be considered a constraint to the development of the site.		
T6	Elder (<i>Sambucus nigra</i>)	6	220	0.0	2.2	2.2	0.0	Structural Condition: Fair Physiological Condition: Fair AIA: A large shrub that has previously been pruned in an unsympathetic manner. T6 provides little amenity value and could be removed without any impact to the area.		R
T7	Damson (<i>Prunus sp.</i>)	8	150	0.0	0.0	1.6	3.7	Structural Condition: Poor Physiological Condition: Poor AIA: Tree has been damaged as a result of past branch failure. This tree is showing low vitality and should be removed for reasons of good arboricultural management.		R
T8	Damson (<i>Prunus sp.</i>)							Structural Condition: Poor Physiological Condition: Poor AIA: As T7.		R
T9	Damson (<i>Prunus sp.</i>)	6	120	3.6	3.0	0.0	1.7	Structural Condition: Fair Physiological Condition: Fair RPA: Influenced by the adjacent driveway. AIA: Tree is part of a group of ornamental fruit trees that provide limited public amenity value. The tree should not be considered an impediment to the development of the site as	7	C

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								any loss of amenity could be offset through new planting in a re-designed garden.		
T10	Crab Apple (<i>Malus sp.</i>)	8	180	3.2	3.4	1.2	4.3	Structural Condition: Poor Physiological Condition: Fair RPA: Root system will have sustained damage as a result of recent construction of an adjacent driveway. Tree is part of a group of ornamental fruit trees that provide limited public amenity value. The tree should not be considered an impediment to the development of the site as any loss of amenity could be offset through new planting in a re-designed garden.	15	C
T11	Sycamore (<i>Acer pseudoplatanus</i>)	12	270	0.0	0.0	2.2	0.0	Structural Condition: Good Physiological Condition: Good RPA: Circular AIA: The tree is situated within the overgrown hedgerow on the north boundary of the site. It is proposed that the hedge be laid as part of the landscaping of the site and that the hedgerow trees are retained. T11 can be adequately protected and retained through the development. The tree is to the north of the site so will not cast excessive shade over the proposed dwelling.	33	C2
T12	Sycamore (<i>Acer pseudoplatanus</i>)	12	185	2.0	2.0	2.0	2.0	As T11	15	C2
T13	Sycamore (<i>Acer pseudoplatanus</i>)	14	265		3.5	2.5	1.0	As T11	32	C2
T14	Sycamore (<i>Acer pseudoplatanus</i>)	15	400		3.7	2.6	2.0	As T11	75	C2

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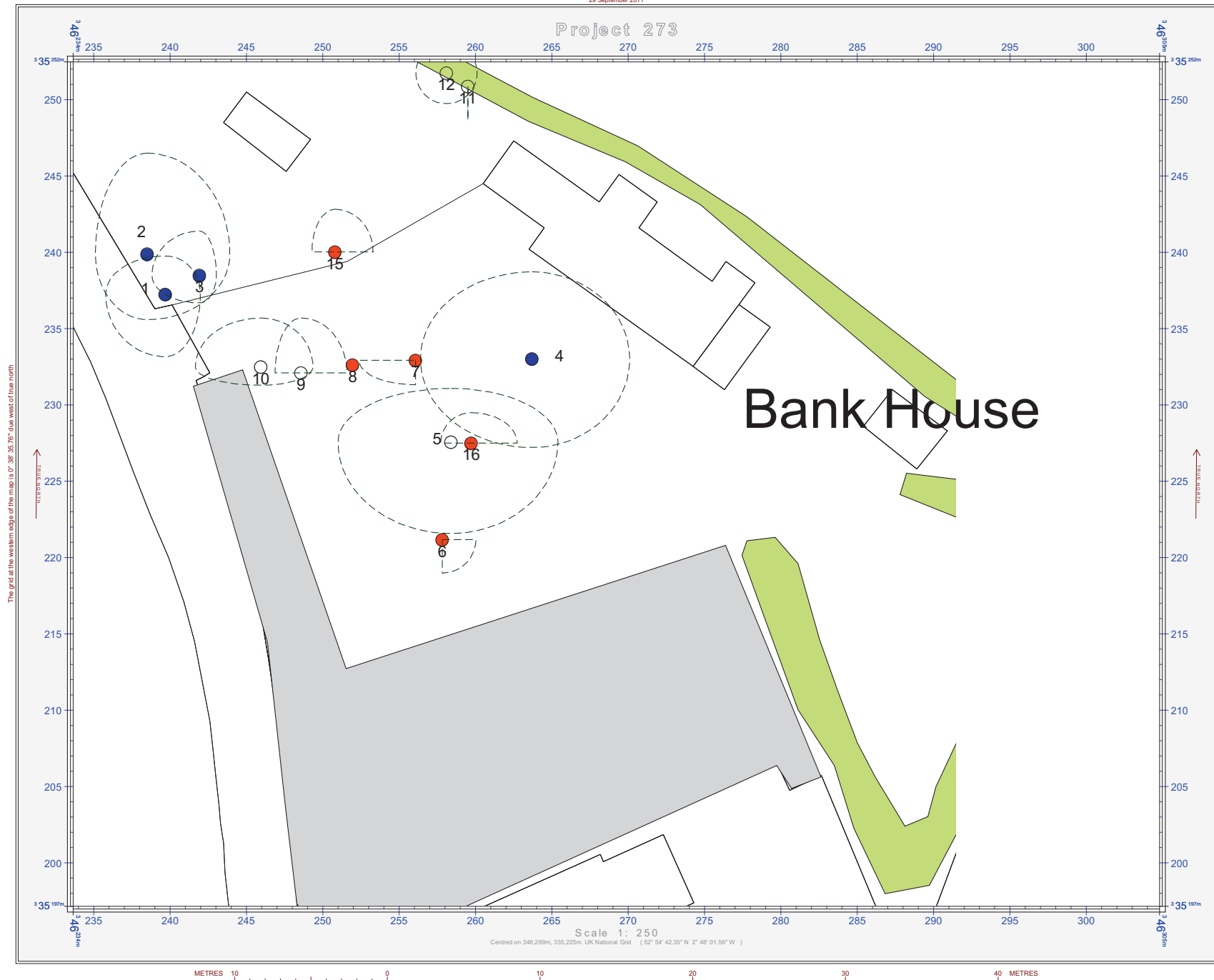


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T15	Damson (<i>Prunus sp.</i>)	6	180 (MS)	2.8	2.5	0.0	1.5	Structural Condition: Poor Physiological Condition: Poor AIA: Tree should be removed for reasons of good arboricultural management.		R
T16	Holly (<i>Ilex aquifolium</i>)	9	148	2.0	3.0	0.0	2.0	Structural Condition: Poor Physiological Condition: Poor AIA: Tree should be removed for reasons of good arboricultural management.		R
H1	Mixed Hedgerow	8 aver.						RPA: Linear approximately 1.5 metres from the centre line of the hedge. AIA: Hedgerow is to be retained and laid as part of the landscape management of the site.		

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Tree Location Plan

Bank House
Cadney Lane
Bettisfield

- Tree Cat B
- Tree Cat C
- Tree Cat R
- Canopy Spread
- Hedge
- Adjacent Plot

Drawing No: BHB/TLP/09/11/01

Drawn By: S. Shields

Scale: 1:250 @ A3

Date: 28th September
2011

Revision:

Do not scale from this drawing

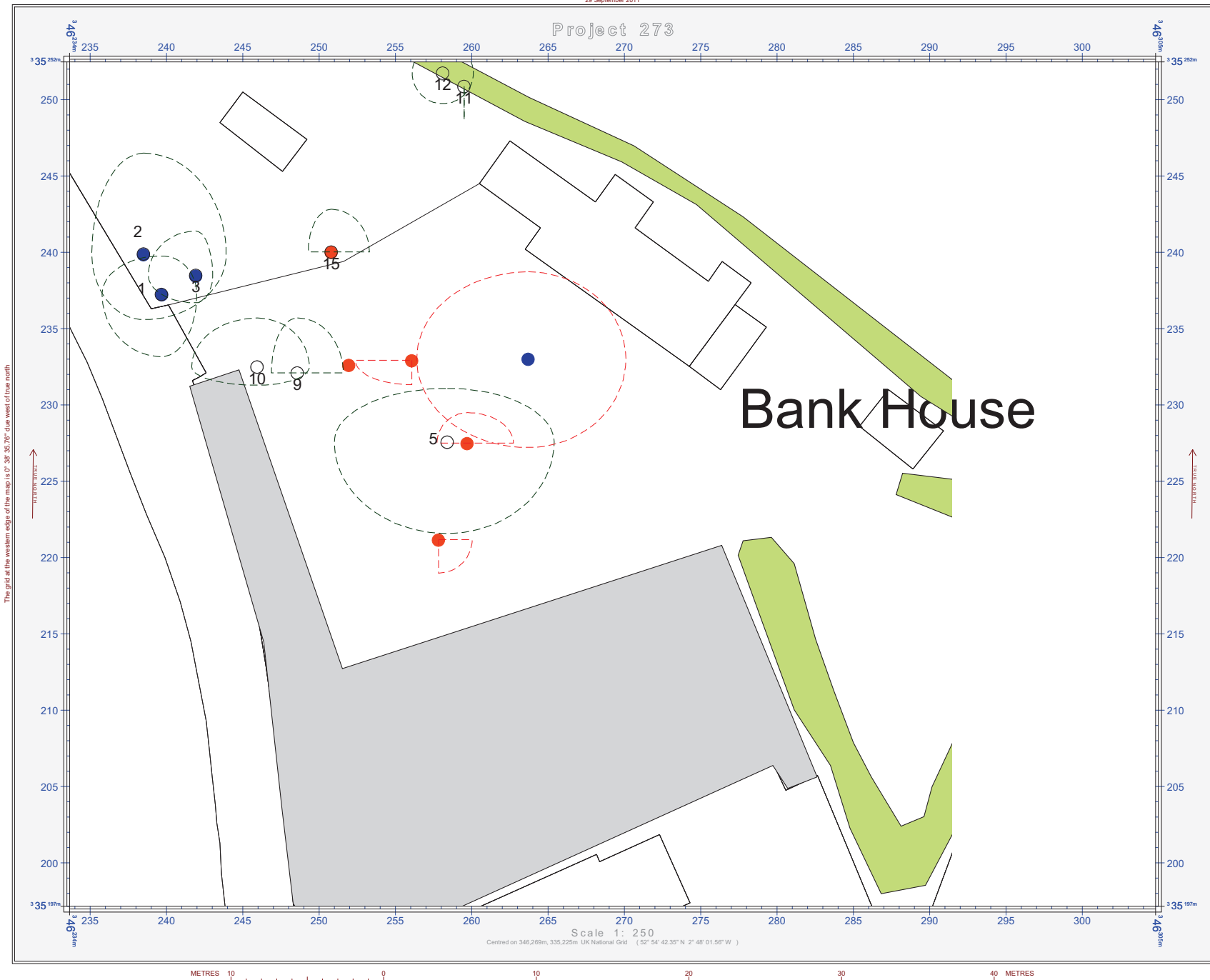
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Trees for Removal

Bank House
Cadney Lane
Bettisfield

- Tree Cat B
- Tree Cat C
- Tree Cat R
- Trees for Removal
- Canopy Spread
- Hedge
- Adjacent Plot

Drawing No: BHB/TRP/09/11/01

Drawn By: S. Shields

Scale: 1:250 @ A3

Date: 28th Sept. 2011

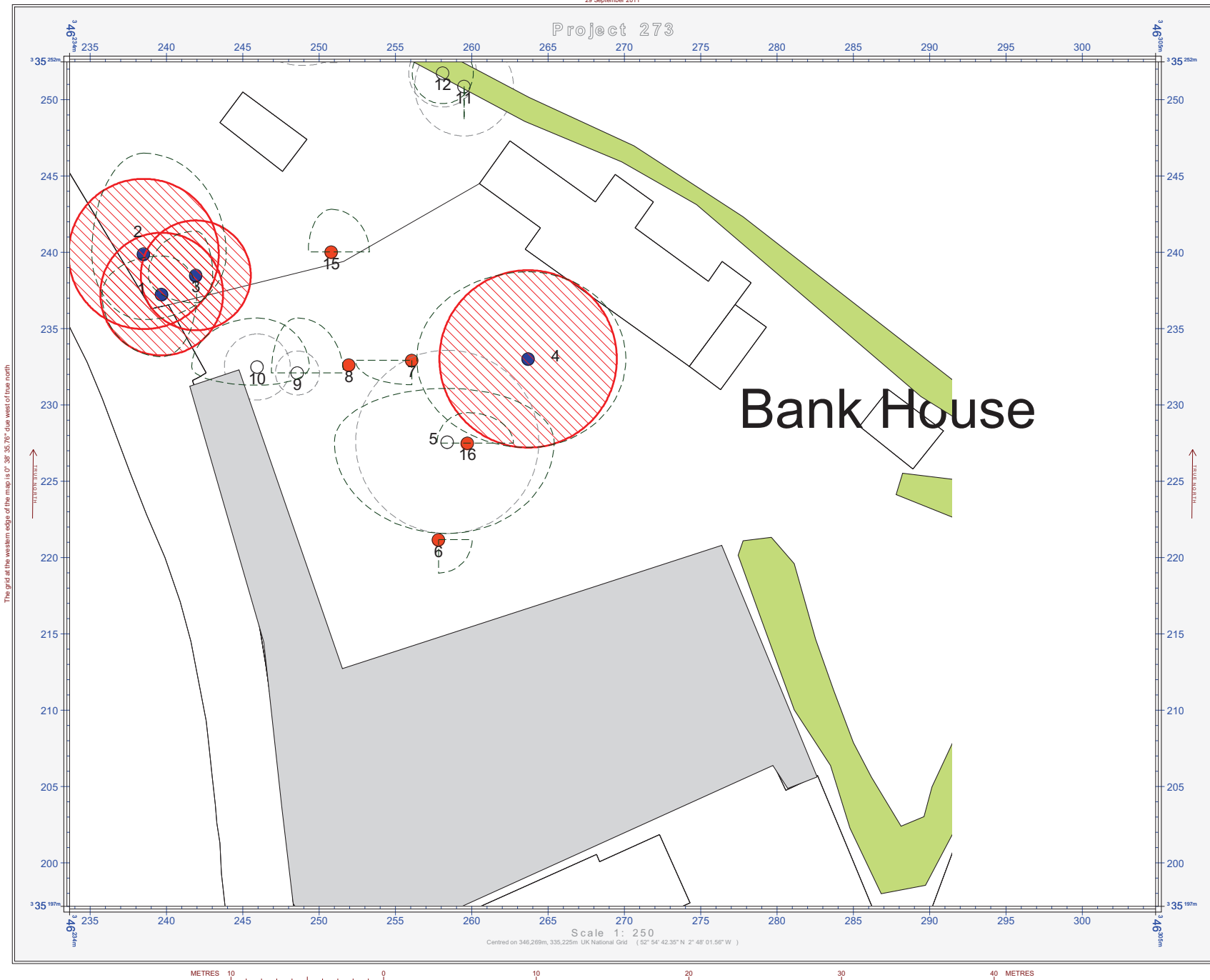
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Root Protection Areas

Bank House
Cadney Lane
Bettisfield

- Tree Cat B
- Tree Cat C
- Tree Cat R
- Canopy Spread
- Hedge
- Adjacent Plot
- RPA
- RPA Cat C

Drawing No: BHB/RPA/09/11/01

Drawn By: S. Shields

Scale: 1:250 @ A3

Date: 28th Sept. 2011

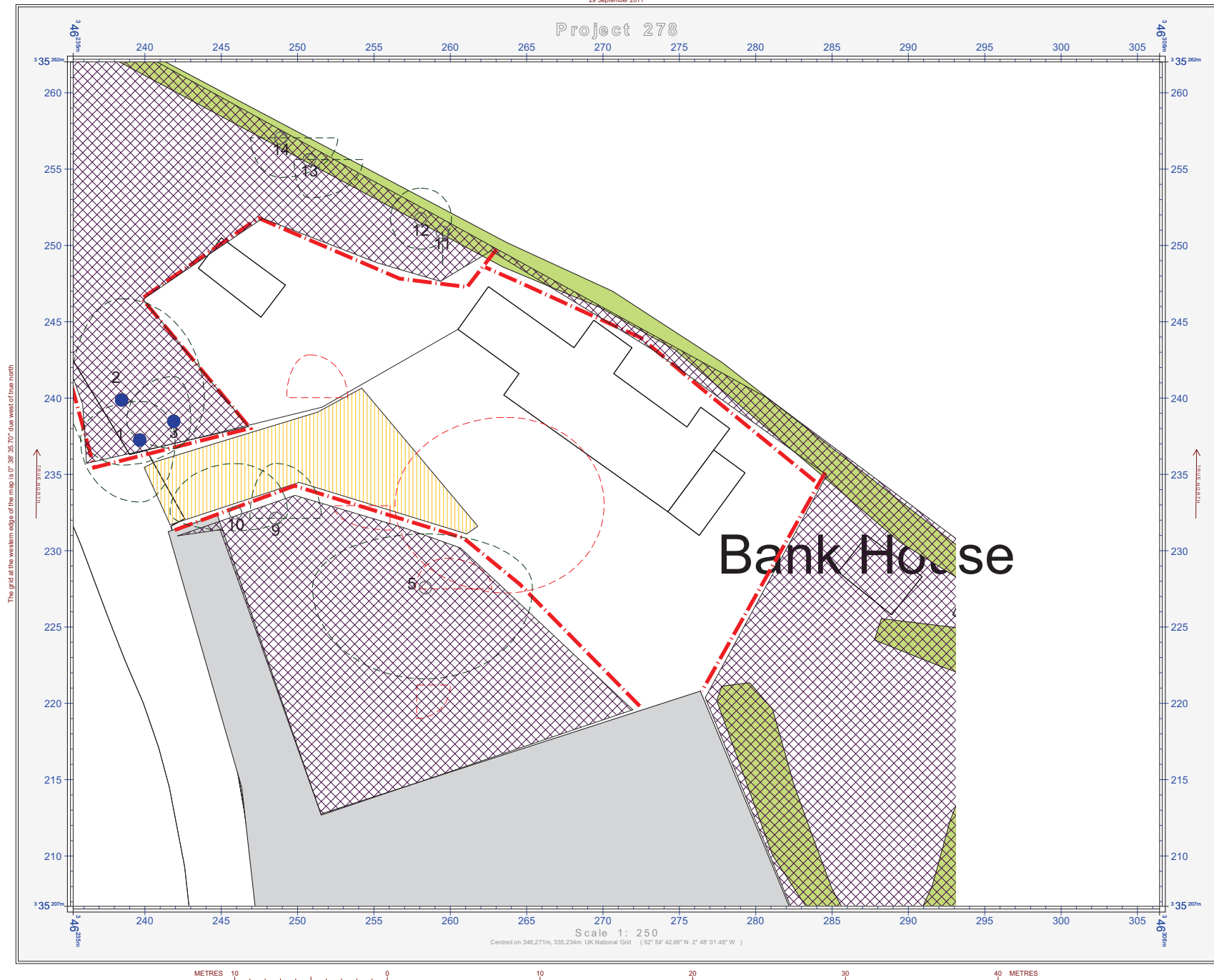
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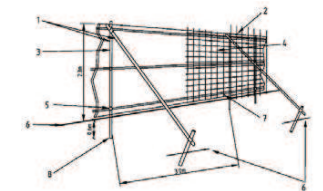
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Tree Protection Plan

Bank House
Cadney Lane
Bettisfield

- CEZ
- Ground Protection
- Tree Protection Fencing
- Trees for Removal
- Canopy Spread
- Tree Cat B
- Tree Cat C



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

Drawing No: BHB/TPP/09/11/01

Drawn By: S. Shields

Scale: 1:250 @ A3

Date: 28th Sept. 2011

Revision:

Do not scale from this drawing

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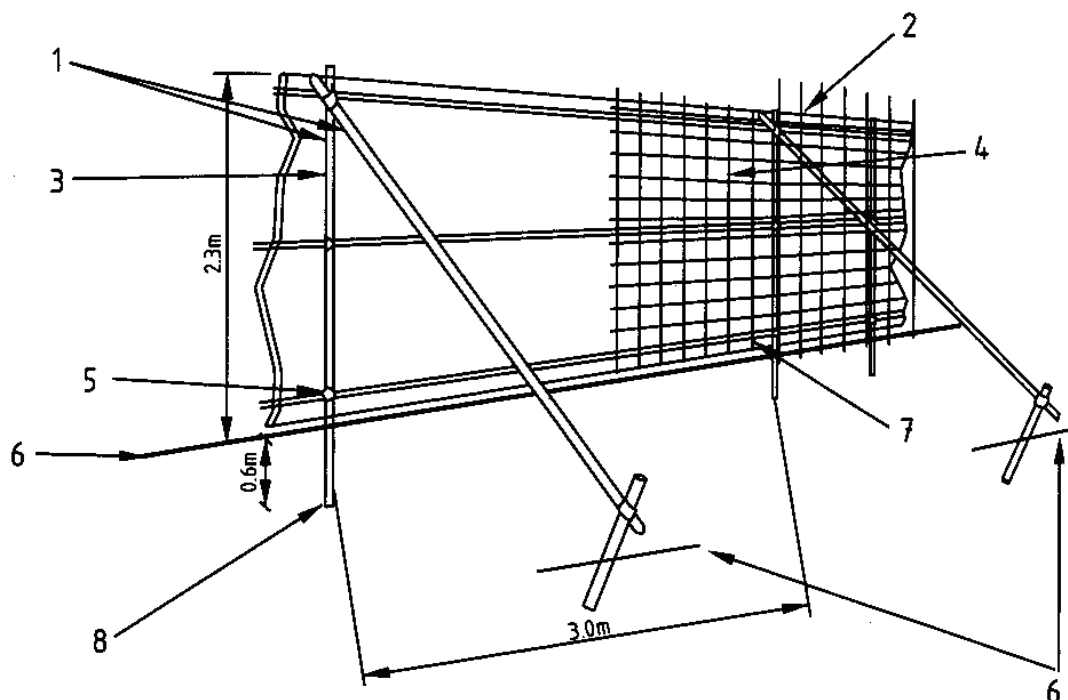
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Recommended Design of Tree Protection Fencing



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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