

**Wisborough Green  
Exploratory Well  
Site, West Sussex**

**Findings of  
Arboricultural  
Assessment**

(Incorporating  
Arboricultural Impact  
Assessment, Tree  
Protection Measures &  
Outline Arboricultural  
Method Statement)

Prepared by:  
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On behalf of:  
**Celtique Energie  
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THE  
ENVIRONMENTAL  
DIMENSION  
PARTNERSHIP

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(EDP1902/04b 22 August 2013 DS/JM)
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(EDP 1902/06d 06 January 2014 EB/DW)

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## Section 1 Introduction and Methodology

- 1.1 The Environmental Dimension Partnership (EDP) was commissioned by Celtique Energie Weald Ltd, to undertake a BS5837:2012 Trees in Relation to Design, Demolition and Construction compliant survey of the trees in relation to the proposed development of Wisborough Green Exploratory Well Site (hereafter referred to as 'the site'). This Arboricultural Assessment and associated plans have been updated following comments received from the Council as part of a review of the prepared Environmental Statement. These changes highlight the retention of category "U" grade trees as ecological resources as depicted on **Plan EDP 3** following completion of recommended management works as described in **Schedule EDP 1**.
- 1.2 The survey was undertaken by Jim Mulholland, Arboricultural Consultant, on 13 February 2013. The focus of this surveys was to assess the condition of the subject trees, specifically:
- The main bole and central stem;
  - The primary and secondary branch system and crown supported thereon; and
  - Their relation to the surroundings.
- 1.3 The site measures approximately 1.56 hectares (ha) in size and is centred on National Grid Reference NGR TQ 036 267. It is bound to the north by mature woodland; and south, east and west by arable farmland.

### Tree Survey Methodology

- 1.4 The methodology adopted for this survey is based on guidelines set out in *BS5837:2012 Trees in Relation to Design, Demolition and Construction*, especially Section 4.4, 'Tree Survey'. Site trees and other significant vegetation are as noted on the tree survey plan (**Plan EDP 1**). This is derived from the topographic survey data included as **Appendix EDP 2**. All surveyed items are detailed in **Schedule EDP 1** (contained at the rear of this report). No other trees are covered by this survey.
- 1.5 The subject trees have not been tagged for identification purposes.
- 1.6 All trees have been visually inspected from ground level unless otherwise stated, with no climbing or further detailed investigative tests being undertaken. The comments made on their condition are based on observable factors present at the time of inspection. All measurements are metric and have been recorded in accordance with the measurement conventions set out in Section 4.4.2.6 of BS5837:2012.

1.7 Any recommendations given regarding longer-term management are made on the basis of optimising the life expectancy of site trees, given their current situation and any effects which may result from the development proposals.

1.8 **Schedule EDP 1** provides information about the following factors in accordance with paragraph 4.4.2.5 of BS5837:2012:

- Sequential Reference Number (recorded on **Plan EDP 1**);
- Species;
- Height;
- Stem Diameter;
- Branch Spread;
- First Significant Branch and Direction of Growth;
- Existing Height Above Ground Level;
- Life Stage;
- Physiological Condition;
- Structural Condition;
- Preliminary Management Recommendations;
- Estimated Remaining Contribution;
- Category Grading; and
- Tree Works Priority Codes.

***Sequential Reference Number***

1.9 Individual trees have been given the prefix 'T' and commence with T1 and woodlands the prefix 'W', all numbering of surveyed items is sequential.

***Species***

1.10 Common English names are used wherever possible for simplicity.

### ***Height***

- 1.11 An approximation of height (in metres) is provided for the highest point of the tree.

### ***Stem Diameter***

- 1.12 This is the measurement of stem diameter in millimetres taken in accordance with Annex C of BS5837:2012.

### ***Branch Spread***

- 1.13 This is taken at four cardinal points, with a stated value in metres to enable an accurate representation of the crown, as shown on **Plan EDP 1**.

### ***First Significant Branch***

- 1.14 Height of first significant branch and direction of growth e.g. 2.4 N, measured from adjacent ground level.

### ***Existing Height Above Ground Level***

- 1.15 An approximation of height (in metres) of crown clearance above adjacent ground level.

### ***Life Stage***

- 1.16 There are six classes to which trees are assigned:

- Young;
- Semi Mature;
- Early Mature;
- Mature;
- Over Mature; and
- Veteran.

### ***Physiological Condition***

- 1.17 An indication of the tree's physiological condition is represented and classed as good, fair, poor or dead, this is informed by the following:

- Canopy Density: It should be taken that, unless otherwise stated with each individual entry, the canopy density of the trees is typical of the species; and

- Leaf Size and Colouration: It should be taken that, unless otherwise stated with each individual entry, leaf size and colouration is typical of the species.

### ***Structural Condition***

- 1.18 Additional notes are provided giving details of the tree's structural condition. This is informed by *the presence of any decay and physical defect*<sup>1</sup>.

### ***Preliminary Management Recommendations***

- 1.19 These are made on the basis of optimising the life expectancy of site trees; given their current situation and that which may result from the development proposals. The survey process pays particular attention to implications for life and/or property; defects recorded under the structural condition have the necessary mitigation measures proposed within this section of the schedule.

### ***Estimated Remaining Contribution***

- 1.20 The definitions of the terms used are as follows and describe the estimated length of time (in years) over which the tree can be expected to make a safe contribution to local amenity:

- Less than 10;
- 10+;
- 20+; and
- 40+.

### ***Category Grading***

- 1.21 Trees have been assigned 'U' or Category Grading 'A' to 'C' in accordance with the Cascade Chart given in BS5837:2012 (copy extract contained as **Appendix EDP 3**).

### ***Tree Works Priority Codes***

- 1.22 Priority codes from 1 to 3 have been given for trees requiring work. The definition of the codes used is as follows:

*Priority 1: Work that should be undertaken urgently due to the identification of a potential hazard.*

*Priority 2: Work that should be undertaken prior to any works commencing on site.*

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<sup>1</sup>BS5837: 2012 Section 4.4.2.5



*Priority 3: Work that should be undertaken following the completion of the development.*

### **Limitations**

- 1.23 Due to the changing nature of trees and other site circumstances, this report and any recommendations made are limited to a 24 month period from the survey date. Any alterations to the site or the development proposals could change the current circumstances and may invalidate this report and any recommendations made.
- 1.24 Trees are dynamic structures that can never be guaranteed 100% safe; even those in good condition can suffer damage under average conditions. Regular inspections can help to identify potential problems before they become acute.
- 1.25 A lack of recommended work does not imply that a tree is safe and likewise it should not be implied that a tree will be made safe following the completion of any recommended work.

### **Planning Status**

#### ***Tree Preservation Orders***

- 1.26 None of the surveyed trees are the subject of a Tree Preservation Order.

#### ***Conservation Areas***

- 1.27 No part of the site lies within a designated Conservation Area.

### **Protected Species**

#### ***Bats***

- 1.28 All species of British bat are listed as European Protected Species (EPS) on Schedule 2 of the Conservation Regulations (Annex IV (a) to the Habitats Directive). This affords bats protection under the Conservation of Habitats and Species Regulations 2010, making it an offence to:
- Damage or destroy a breeding site or resting place of a wild individual of an EPS;
  - Deliberately capture, injure or kill a wild individual of an EPS;
  - Deliberately disturb a wild individual of an EPS wherever they are occur, in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce or, in the case of hibernating or migratory species, to hibernate or migrate; or

- Affect significantly the local distribution or abundance of the species to which they belong.
- 1.29 Additional protection for bats is also afforded under the Wildlife and Countryside Act 1981 (as amended) and the Countryside Rights of Way Act 2000, making it an offence to intentionally or recklessly disturb bats whilst they are occupying a structure or place which is used for shelter or protection, or to obstruct access to this structure or place. As bats tend to re-use the same roosts, legal opinion is that roosts are protected whether or not bats are currently occupying these resting places/places of shelter.
- 1.30 Prior to undertaking any tree works or tree removal further advice should be sought from a suitably qualified ecologist.

### **Nesting Birds**

- 1.31 The main bird nesting season is between March and August inclusive. Contractors have a legal responsibility to comply with current legislation relating to breeding birds. Under the Wildlife and Countryside Act 1981 (as amended) and the Countryside and Rights of Way Act 2000 birds as well as their nests and eggs are protected and it is an offence to:
- Take, damage or destroy the nest of any wild bird while it is in use or being built;
  - Take or destroy the egg of any wild bird; and
  - To disturb any wild bird while it is nest building, or at a nest containing young, or disturb the dependent young of such a bird.

## Section 2 Summary of Findings

### The Tree Stock Generally

- 2.1 The survey process recorded a total of 5 individual trees and 4 woodlands totalling 9 items. **Schedule EDP 1**, included at the rear of this report, contains full attribute details for each item surveyed. The survey data can be categorised into three specific areas of reference: species diversity, age distribution and grading classification, analysis of which enables a fuller arboricultural appraisal to be undertaken of the site.
- 2.2 The site comprises part of an arable field surrounded to the north by woodland. The southern and eastern boundaries are arbitrary and do not follow any feature on the ground. Part of the western boundary is demarked by woodland and part by the road to the west of the site (Kirdford Road). The tree stock is entirely limited to woodland trees on the boundaries of the site with no freestanding trees within the site.

### Species Diversity

- 2.3 A total of 10 species are represented throughout the site, a summary of this is presented in **Table EDP 1**. In order to illustrate a true reflection of the overall diversity, each species represented individually or in a group is allocated a single count upon each occurrence totalling 18 items (accounting for the difference between total items recorded and species diversity). A total of 7 Common Oak (38.7%) and 3 Hawthorn (16.5%) predominate across the site. This mix of native tree species is typical of that found within the wider landscape.

Species	Number	Percentage
Ash	1	5.6
Blackthorn	1	5.6
Common Alder	1	5.6
Common Oak	7	38.7
Crab Apple	1	5.6
Crack willow	1	5.6
Field Maple	1	5.6
Hawthorn	3	16.5
Hazel	1	5.6
Holly	1	5.6
<b>Total</b>	<b>18</b>	<b>100</b>

**Table EDP 1:** Species Diversity

### Age Distribution

- 2.4 Analysis of the data in **Table EDP 2** identifies that there 3 (33.4%) semi mature items which are moderately tolerant of ground disturbance and less easy to move; 4 (44.4%)

early mature and 2 (22.2%) mature items which are intolerant of ground disturbance. No young, over mature or veteran trees were recorded on site.

Age Class	Number	Percentage
Young	0	0
Semi Mature	3	33.4
Early mature	4	44.4
Mature	2	22.2
Over Mature	0	0
Veteran	0	0
<b>Totals</b>	<b>9</b>	<b>100</b>

**Table EDP 2:** Age Distribution

- 2.5 The lack of young, over mature and veteran trees is a result of the way in which trees have been surveyed. The woodland groups were group classified to reflect the overall age class of the woodland (semi-mature or early-mature), although these contain young and over mature items within them.

### **Grading Classification**

- 2.6 Whilst age distribution and species diversity are important, the overriding factors have to be the health and condition of these trees. Trees in poor health and condition have a limited lifespan and contribute little to the landscape character, sustainability and continuity of the population. Tree categorisation is applied in accordance with the cascade chart (**Appendix EDP 3**), following consideration of the presence of any disease, structural defects or tree related hazards. On occasion, and based on the professional judgment of a suitably qualified Arboriculturist, EDP has down-graded or up-graded trees based on their arboricultural merit and individuality, despite a predicted short or long lifespan.
- 2.7 **Plan EDP 1** provides information about the relative merits of the trees in arboricultural and landscape terms. Distribution across the category range is depicted in **Table EDP 3**. Across the site there are 2 (22.2%) 'A' grade items of high quality and value; 3 (33.4%) 'B' grade items of moderate quality and value; 2 (22.2%) 'C' grade items of low quality and value and 2 (22.2%) 'U' grade items considered unsuitable in the current site context.

Category Grading	Description	Number	Percentage
A	High quality and value	2	22.2
B	Moderate quality and value	3	33.4
C	Low quality and value	2	22.2
U	Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years.	2	22.2
<b>Totals</b>		<b>9</b>	<b>100</b>

**Table EDP 3:** Category Grading

- 2.8 The distribution across the categories is relatively even, with a slight bias towards B grade items reflecting the range of quality in the tree stock across the site.

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## Section 3 Recommendations for Tree Works and Tree Protection

### Tree Surgery Works

- 3.1 Any tree surgery works or further detailed investigations detailed in **Schedule EDP 1** are proposed on the basis that they are undertaken by a qualified Arboricultural contractor who is listed in the Arboricultural Association's Approved Contractors Directory (ref: [www.trees.org.uk](http://www.trees.org.uk)).
- 3.2 All tree surgery work should be undertaken in accordance with the requirements of *BS3998:2010 British Standard Recommendations for Tree Work* and *BS5837:2012 Trees in Relation to Design, Demolition and Construction*.

### Tree Surgery Works - Timing

- 3.3 No trees have been noted as requiring Priority Code of 1 as at the time of inspection none were assessed as posing an imminent or serious risk to persons or property when considered in context of the current land use.
- 3.4 A total of 4 surveyed items were noted as requiring Priority Code 2 works. These works, where prescribed are considered necessary to mitigate a perceived hazard from an observed and recorded defect. This work should ordinarily commence prior to any site works commencing, thus establishing an acceptable level of risk in the context of the proposed land use. **Schedule EDP 1** contained to the rear of this report details the nature, extent and location of each recorded defect accompanied by a full description of the prescribed remedial works. A summary of this is presented in **Table EDP 4**.

Tree Number	Management Recommendation
T1	Crown reduce by 4m all round to retain long term.
T2	Monolith to 4m.
W7	Remove failed ash stem and re-coppice.
T8	Monolith to 8m.

**Table EDP 4:** Priority Code 2 Tree Works Summary

- 3.5 None of 3 surveyed items were noted as requiring Priority Code 3 works. These are considered to be more general essential maintenance works and should commence post development, but prior to operational occupancy.

### Tree Protection Measures

- 3.6 The findings of EDP's arboricultural assessment are summarised in **Section 2**, **Schedule EDP 1** and **Plan EDP 1** included at the rear of this report. These findings have

been considered without reference to the development proposals for the site. **Plan EDP 2**, The Tree Constraints Plan, illustrates the constraints imposed by the tree stock throughout the development parcel, specifically in connection with the recommended root protection areas (RPA), as described in the tree constraints schedule (**Schedule EDP 2**), calculated using the methodology set out in Section 4.6 and Annex C and D of BS5837:2012.

### **Tree Protection - General Considerations**

- 3.7 The adequate protection of retained trees on development sites is of paramount importance if they are to be retained successfully. In the event that development of the site proceeds, the trees identified as retainable shall be protected in accordance with the provisions outlined in the Tree Protection Plan enclosed as **Plan EDP 3**.
- 3.8 The protection measures specified below should be implemented prior to any development or site clearance works commencing and must be maintained throughout the construction period.

### **Roots**

- 3.9 To ensure appropriate protection is afforded to the roots the extent of the RPA shall be defined by means of the installation of protective barriers in accordance with the recommendations given in Section 6.2 of BS5837:2012. The extent of this enclosed area, known as the Construction Exclusion Zone (CEZ), is depicted on **Plan EDP 3**.
- 3.10 Where pre-existing site conditions or other factors indicate that rooting has occurred asymmetrically, the shape of the RPA may be modified but not reduced in area and its shape should reflect a soundly based arboricultural assessment of the likely root distribution.
- 3.11 Any deviation in the RPA from the original circular plot should take account of the following factors whilst still providing adequate protection for the root system:
- The morphology and disposition of the roots, when known to be influenced by past or existing site conditions (e.g. the presence of roads, structures and underground services);
  - Topography and drainage;
  - The soil type and structure;
  - The likely tolerance of the tree to root disturbance or damage, based on factors such as species, age and condition and presence of other trees; and



- The maximum extent of the RPA is capped at the equivalent of a circle with a radius of 15m.
- 3.12 Protective barriers should be fit for the purpose of excluding construction activity and special attention should be paid to ensuring that they remain intact throughout the construction process. It is recommended that protective barriers should be erected in accordance with the recommendations given in BS5837:2012 reproduced as **Appendix EDP 4**.
- 3.13 It is proposed that the final line of protective barriers will be agreed with the Local Planning Authority prior to development commencing on site.
- 3.14 Where the RPA of retained trees extend underneath unmade access roads that are to be utilised during the construction process, porous ground protection should be installed in accordance with Section 6.2.3 of BS5837:2012 to avoid compaction of the underlying soil.
- 3.15 As roots can be damaged by the direct toxicity of some material, care will be taken as to the nature of any materials stored near the protective barriers.

#### ***Trunks, Stems and Branches***

- 3.16 The above ground parts of a tree whilst being more visible and easily protected are a potential constraint to development and consideration should be given to the current and ultimate height and spread of the trees, details of which are contained in **Schedule EDP 2**.
- 3.17 Barriers erected to protect the roots should in most cases provide sufficient protection for the above ground parts. Should it be necessary to prune the branches to accommodate the development or construction equipment which is in addition to that proposed in **Schedule EDP 1**, this shall be on the advice of an Arboriculturist and in accordance with the recommendations of BS3998:2010.
- 3.18 Where any significant part of the tree's crown overhangs the provisional position of the tree protection barriers, these parts may sustain damage during the construction period. In these cases, it will be necessary to increase the extent of the protection barriers to contain and thereby protect the spread of the crown.

#### **Recommendations for Future Action**

- 3.19 To minimise the impact on retained trees the following is recommended:
- The 'Recommendations for Tree Protection' detailed in **Section 3** and **Appendix EDP 4** of this report are followed: It is proposed that the lines of

protective barriers are agreed with the Local Planning Authority prior to commencement on site;

- All protective barriers must remain intact and in place throughout the construction and operational period if it is to be effective, and should only be removed by the main contractor following a written instruction from the Contract Administrator; and
- It is recommended that, prior to construction commencing close to trees where access will be required under canopies, such as areas required for scaffolding, the ground is protected with appropriate ground protection as described and specified in Section 6.2.3 of BS5837:2012.

## Section 4 Arboricultural Impact Assessment

- 4.1 This Arboricultural Impact Assessment has been prepared following site based observations, a desktop study of the survey data and consideration of the development proposals.
- 4.2 It recognises that construction activities pose a real and significant threat to the subject trees and assesses the likely impacts of the proposals on the tree stock and where appropriate, provides mitigation with the view of achieving a harmonious relationship between the trees and the built form.
- 4.3 Consideration should be given to retaining all trees where possible. The General Layout Plan has evolved following inputs from EDP and consideration of the constraints posed by the trees. As a result, the footprint of the proposals has taken account of the findings of this survey and tree losses minimized.
- 4.4 However, ultimately the removal of any tree is dependent on its close proximity to the footprint of any proposal. The Tree Protection Plan (**Plan EDP 3**) depicts those trees to be retained with each clearly marked and numbered; in addition all trees requiring removal to implement the development proposals are depicted with a dashed outline.

### Canopies Oversailing Access Track

- 4.5 Based on the proposed site layout a total of 2 trees will require crown lifting to 5m above ground level over the proposed access track to facilitate the movement of high sided vehicles. These are detailed in **Table EDP 5** and comprise an A grade tree of high quality and C grade tree of low quality.

Tree Number	Tree Species	First Significant Branch	Canopy Clearance	Overhang over Access Track	Category Grading
T1	Oak	4 NE	4	8m	C1
T4	Oak	3 S	4	1m	A1

**Table EDP 5:** Trees Requiring a Crown Lift to Facilitate the Movement of Vehicles

- 4.6 The existing canopy of T1 will require a lift of 1m along an 8m section which overhangs the access track. This operation will have a minor negative impact on this tree and is not considered to significantly affect the amenity value of the tree.
- 4.7 The existing canopy of T4 will require a lift of 1m along a 1m section which overhangs the access track. This operation will have a minor negative impact on this tree and is not considered to significantly affect the amenity value of the tree.

### Trees Requiring Load-Bearing Ground Protection to Permit Vehicle Access

- 4.8 The existing site access comprises a tarmac and stone track which traverses the RPAs of T1, T3 and T4. These trees are detailed in **Table EDP 6** and comprise a total of 1 A grade item of high quality, 1 B grade items of moderate quality and 1 C grade items of low quality. This track has recently been re-surfaced and at present this is subject to use by farm vehicles.
- 4.9 The proposed development will see this track used by an increased number of vehicles of a greater weight than the farm vehicles currently using the track. These vehicles have the potential to compact the rooting areas of these trees. However, confirmation has been provided by R Elliott Associates Ltd, Consulting Structural Engineers, that despite the increase in overall weight of the vehicles, the axel load of the vehicles will not significantly increase (due to the spread of the vehicle weight over a greater surface area). Therefore it is concluded that the impact of this heavier vehicle traffic will not have a detrimental impact on these trees in this area.

Tree Number	Tree Species	Category Grading
T1	Common Oak	C1
T3	Common Oak	B1
T4	Common Oak	A1

**Table EDP 6:** Trees Requiring Load Bearing RPA Protection

- 4.10 The line of the proposed access track does, however, traverse a small area of un-covered RPA of T4. The extent of the RPA which does not fall beneath the existing track, and thus already subject to loads from farm traffic, is minimal and therefore compaction of this area is unlikely to adversely impact upon the tree.
- 4.11 In addition, the Construction Program for the site identifies that the proposed access track is to be constructed of '*crushed stone, compacted into place on a geotextile ... to separate the stone from the subsoil and strengthen the road*'. The proposed access track will limit the compaction of this small area of uncovered RPA thereby minimising the potential adverse effects of compaction to such an extent that the overall impact on this tree will be negligible.

### Tree Removals for Reasons of Sound Arboricultural Management

- 4.12 The survey process recorded a total of 2 individual trees which have been graded 'U' as their condition is considered to be impaired to such an extent that they cannot be realistically retained as living trees in the context of the current land use for longer than 10 years. Ordinarily 'U' grade trees are recommended for removal; however in this instance it is recommended that these trees be retained as monoliths to retain the ecological resource.

### **Mitigation Tree Planting**

- 4.13 No tree losses are required as a direct consequence of the proposals although some facilitation tree works will be required to permit access to high sided vehicles. Although not strictly required, where opportunities present themselves, supplementary planting should be sought to bolster the tree population and to improve species diversity on and adjacent to the site.

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## **Section 5**

### **Outline Arboricultural Method Statement**

- 5.1 This Outline Arboricultural Method Statement (AMS) sets out generic management and protection principals that should be adhered to, thereby ensuring successful tree retention should the proposals set out in General Site Plan be implemented.
- 5.2 This AMS should be read in conjunction with **Plan EDP 3** the Tree Protection Plan, its base is the existing tree survey which has the proposals superimposed. It shows the existing trees numbered, with high, moderate and low category trees to be retained marked in green, light blue and grey respectively. It also shows the proposed location of protective measures, as identified in the Arboricultural Impact Assessment (**Section 4**).

#### **Facilitation Tree Works**

- 5.3 Tree works are to be completed prior to commencement of construction works and installation of the protective barriers. The proposed works are as described in **Schedule EDP 1** and **Section 4** and will be carried out in accordance with BS3998 (British Standard Recommendations for Tree Work 2010) by a suitably qualified contractor.

#### **Installation of Tree Protection Measures**

- 5.4 Prior to the commencement of any construction works protective barriers will be installed in accordance with Section 6.2 of BS5837:2012 reproduced as **Appendix EDP 4** and as depicted on **Plan EDP 3**. To assist in setting out the protective barriers, the measurement for each RPA should be checked against the values for both radius and diameter as stated in **Schedule EDP 2**. The area enclosed by the protective barriers known as the Construction exclusion zone (CEZ) should be considered sacrosanct and is to remain undisturbed throughout the construction programme.

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## Section 6 Summary and Conclusions

- 6.1 EDP was instructed by Celtique Energie Weald Ltd. to undertake a survey of trees in relation to the proposals at the Wisborough Green Exploratory Well Site. The survey was undertaken by Jim Mulholland, Arboricultural Consultant, on 13 February 2013.
- 6.2 The survey was undertaken in accordance with the recommendations of British Standard 5837:2012 *Trees in relation to Design, Demolition and Construction*.
- 6.3 Findings for the 5 individual trees and 4 woodlands are included as **Schedule EDP 1** and illustrated on **Plan EDP 1** of this report.
- 6.4 The tree population is predominately semi-mature to mature in age, although it is acknowledged that the woodland groups encompass trees of a range of ages. The tree stock consists of a broad mix of native broadleaved trees of varying condition and form.
- 6.5 Should the development proceed, retained trees should be protected in accordance with the provisions of BS5837:2012, key principles set out in **Section 3** and **Appendix EDP 4** of this report.
- 6.6 The Arboricultural Impact Assessment (AIA) has identified that a total of 2 surveyed items will require crown lifting to permit the access of high sided vehicles to the site.
- 6.7 The Arboricultural Method Statement (AMS) sets out the methods to be employed to avoid adverse impacts to the retained trees during the construction and operational phases. This statement includes specification for protective barriers as well as recommendations for tree works for tree removal/crown lifting.
- 6.8 Any work to the trees to implement the consented development should only be undertaken following consideration of ecological statute protection detailed in **Section 1**.

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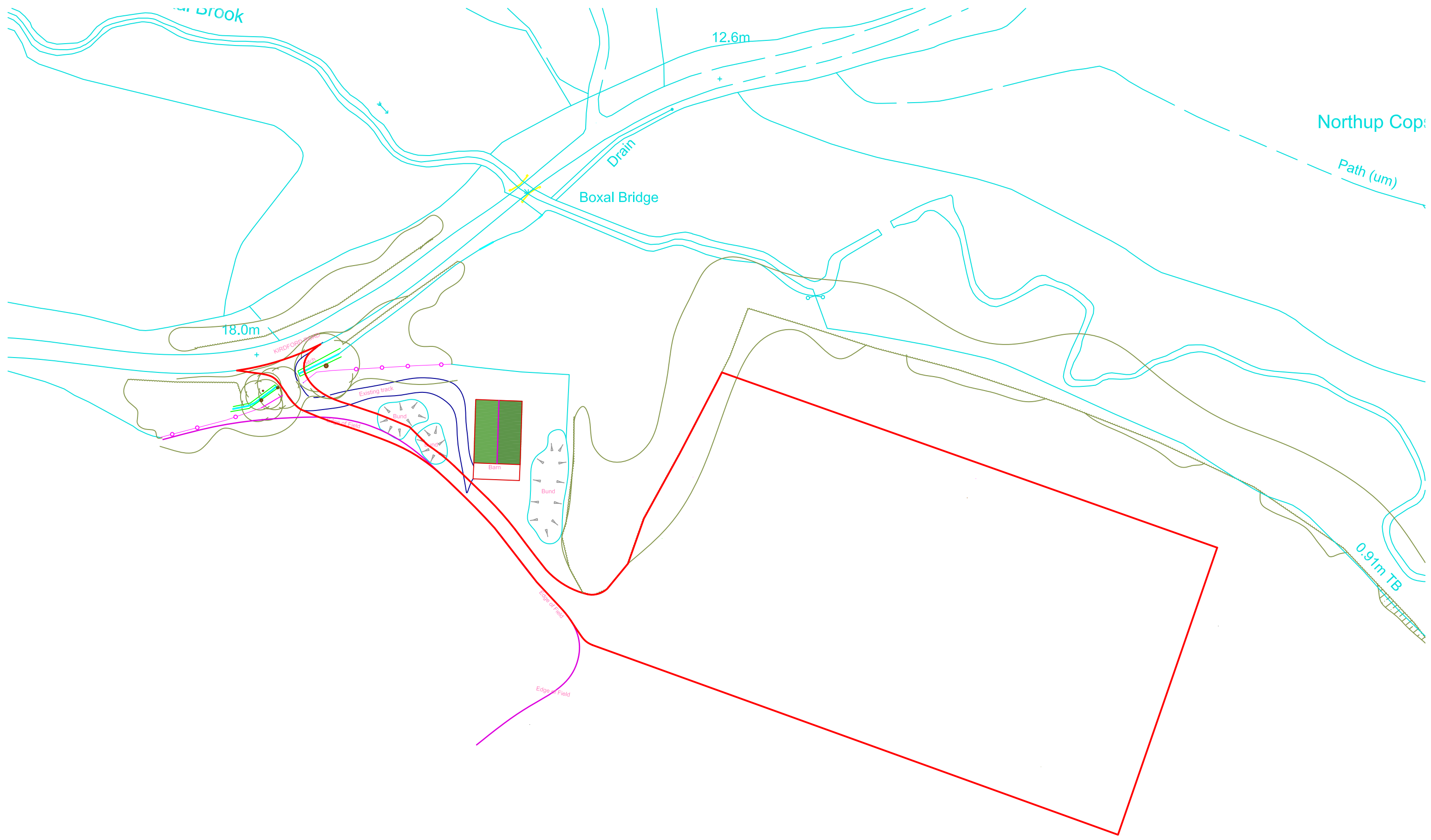
## Appendix EDP 1 Glossary

<b>Arboricultural Impact Assessment</b>	Study, undertaken by an Arboriculturist, to identify, evaluate and possibly mitigate the extent of direct and indirect impacts on existing trees that may arise as a result of the implementation of any site layout proposal.
<b>Arboricultural Method Statement</b>	Methodology for the implementation of any aspect of development that has the potential to result in loss of, or damage to a tree.
<b>Construction Exclusion Zone</b>	Area based on the RPA (in m <sup>2</sup> ), identified by an Arboriculturist, to be protected during development, including demolition and construction work, by the use of barriers, and/or ground protection fit for purpose to ensure the successful long-term retention of a tree.
<b>Detailed Investigation</b>	During a visual inspection, a tree may be identified as requiring further detailed investigation. Examples of further assessment can include invasive boring tests, Picus reports, climbing inspections or root scans.
<b>Root Protection Area (RPA)</b>	Layout design tool indicating the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree, shown in plan form in m <sup>2</sup> .
<b>Services</b>	Any above ground and piped and/or ducted underground infrastructure including water main, electricity supply, gas supply, fibre-optic utilities, telecommunications cabling, storm and foul water drainage, including temporary storage for run-off, pumping stations, interceptors and other allied buried structures.
<b>Special Engineering</b>	Design of a structure with the physiological requirements of trees as a priority.
<b>Tree Constraints Plan</b>	Plan prepared by an Arboriculturist for the purposes of layout design showing the RPA and representing the effect that the mature height and spread of retained trees will have on layouts through shade, dominance, etc.
<b>Tree Protection Plan</b>	Scale drawing prepared by an Arboriculturist showing the finalised layout proposals, tree retentions, and tree and landscape protection measures detailed within the arboricultural method statement (AMS), which can be shown graphically.
<b>Veteran Trees</b>	A tree that, by recognised criteria, shows features of biological, cultural or aesthetic value that are characterised of, but not exclusive to, individuals surviving beyond the typical age range of the species concerned.

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## **Appendix EDP 2 Topographic Survey Data**

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**Appendix EDP 3**

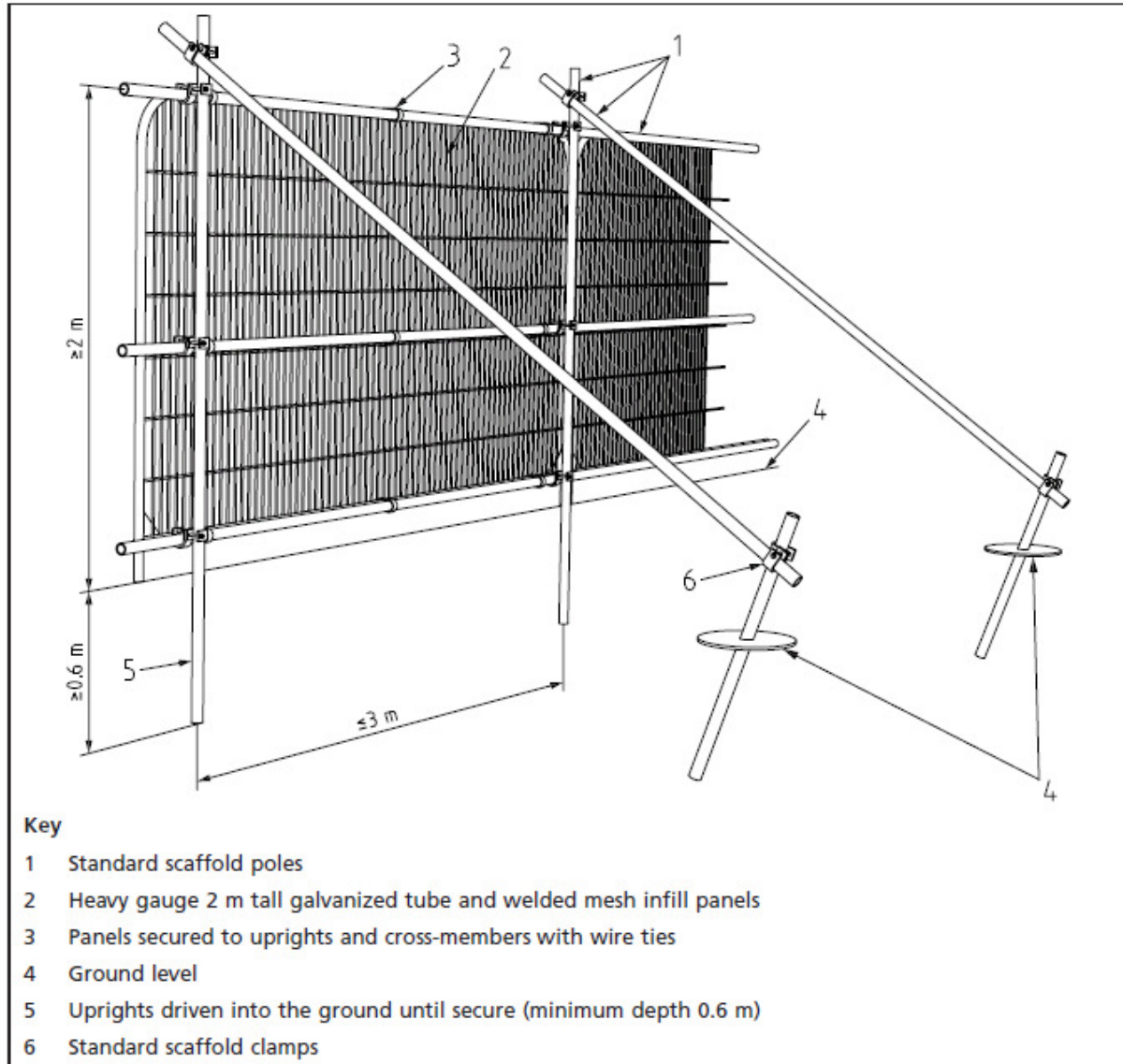
**Cascade Chart for Tree Quality Assessment (Extract of BS 5837:2012, Table 1)**

Category and definition	Criteria (including subcategories where appropriate) Identification on plan		
<b>Trees unsuitable for retention</b> (see Note)			
<b>Category U</b> Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	<ul style="list-style-type: none"> <li>Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning)</li> <li>Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline</li> <li>Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality</li> </ul> <p>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see <b>4.5.7</b>.</p>		
	<b>1 Mainly arboricultural qualities</b>	<b>2 Mainly landscape qualities</b>	<b>3 Mainly cultural values, including conservation</b>
<b>Trees to be considered for retention</b>			
<b>Category A</b> <b>Trees of high quality</b> with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)
<b>Category B</b> <b>Trees of moderate quality</b> with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually 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 material conservation or other cultural value
	Criteria (including subcategories where appropriate) Identification on plan		
<b>Category and definition</b>			
<b>Trees unsuitable for retention</b> (see Note)			



<b>Trees to be considered for retention</b>			
<b>Category C</b> <b>Trees of low quality</b> with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value

## Appendix EDP 4 Tree Protection Barrier on Scaffold 2.0m High (Extract from BS 5837:2012, Figure 2 'Protective Barrier')



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## **Schedule EDP 1 Schedule of Trees Surveyed**

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Client:	Celtique Energie Ltd										Site:	Wisborough Green, West Sussex				
Date of Survey:	13th February 2013										Consultant:	Jim Mullholland				
Tagged	No										Weather:	Clear, dry and cold				
Tree Reference No.	Species	Height (m)	Stem Diameter (mm)	Branch Spread (m)				First significant Branch (m)	Canopy Clearance (m)	Life Stage	General Observations			Estimated Remaining Contribution (Years)	Category Grade	Priority
				North	East	South	West				Physiological Condition	Structural Condition	Preliminary Management Recommendations			
T1	Common Oak	13	640	7	6	10	9	4 NE	4	Early-Mature	Fair. Canopy sparse, recently laid access track and location of ditch next to stem likely to affect rooting environment.	Fair. Historic damage on north side at base with evidence of decay in stem.	Crown reduce by 4m all round to retain long term.	10+	C1	2
T2	Common Oak	13	410	3	2	3	8	4 W	4	Semi-Mature	Poor. Tree suppressed by adjacent trees, canopy sparse, significant dieback in canopy.	Fair. Historic damage on north side at base with evidence of decay in stem.	Monolith to 4m.	<10	U	2
T3	Common Oak	14	750	3	9	8	7	4 W	4	Mature	Good	Good	None	20+	B1	N/A
T4	Common Oak	14	1200	7	9	7	8	3 S	4	Mature	Fair. Epicormic growth throughout.	Good. Situated on top of drainage ditch.	None	40+	A1	N/A
W5	Common Oak, Hazel, Holly and Crab Apple	11	500	5	5	5	5	0 S	0	Semi-Mature	Good	Good	None	40+	A3	N/A
W6	Common Oak, Hazel, Hawthorn, Blackthorn and Field Maple	9	420	0	1	2	2	0 S	0	Semi-Mature	Good	Good. Woodland group dominated by Hazel coppice with some low quality standard trees.	None	10+	C1	N/A
W7	Common Oak, Common Alder, Ash, Holly, Hawthorn	15	700	0	0	10	0	0 E	0	Early-Mature	Good	Fair. Lapsed Ash coppice, recent stem failure caught in canopy of adjacent tree.	Remove failed Ash stem and re-coppice.	20+	B3	2
T8	Common Oak	14	600	4	4	4	4	12 E	12	Early-Mature	Poor. <i>Ganoderma applanatum</i> fruiting bodies at base.	Poor. Decay seam from ground to 6m on east side and evidence of aerial decay on eastern side of tree.	Monolith to 8m.	<10	U	2
W9	Ash, Common Oak, Hawthorn, Hazel, Holly, Crack Willow	15	450	0	6	0	0	0 S	0	Early-Mature	Good	Good	None	20+	B3	N/A

## Schedule EDP 2 Tree Constraints Schedule

Reference No.	Category Grade	RPA Radius (m)	RPA Area m <sup>2</sup>	Ultimate Height (m)	Ultimate Crown Spread (m)			
					N	E	S	W
T1	C1	7.7	185	14	7	6	10	9
T2	U	4.9	76	14	3	2	3	8
T3	B1	9	254	14	3	9	8	7
T4	A1	14.4	651	14	7	9	7	8
W5	A3	7.2	163	13	5	5	5	5
W6	C1	6	113	15	-	1	2	2
W7	B3	5	80	15	-	-	10	-
T8	U	8.4	222	14	4	4	4	4
W9	B3	5.4	92	15	-	6	-	-

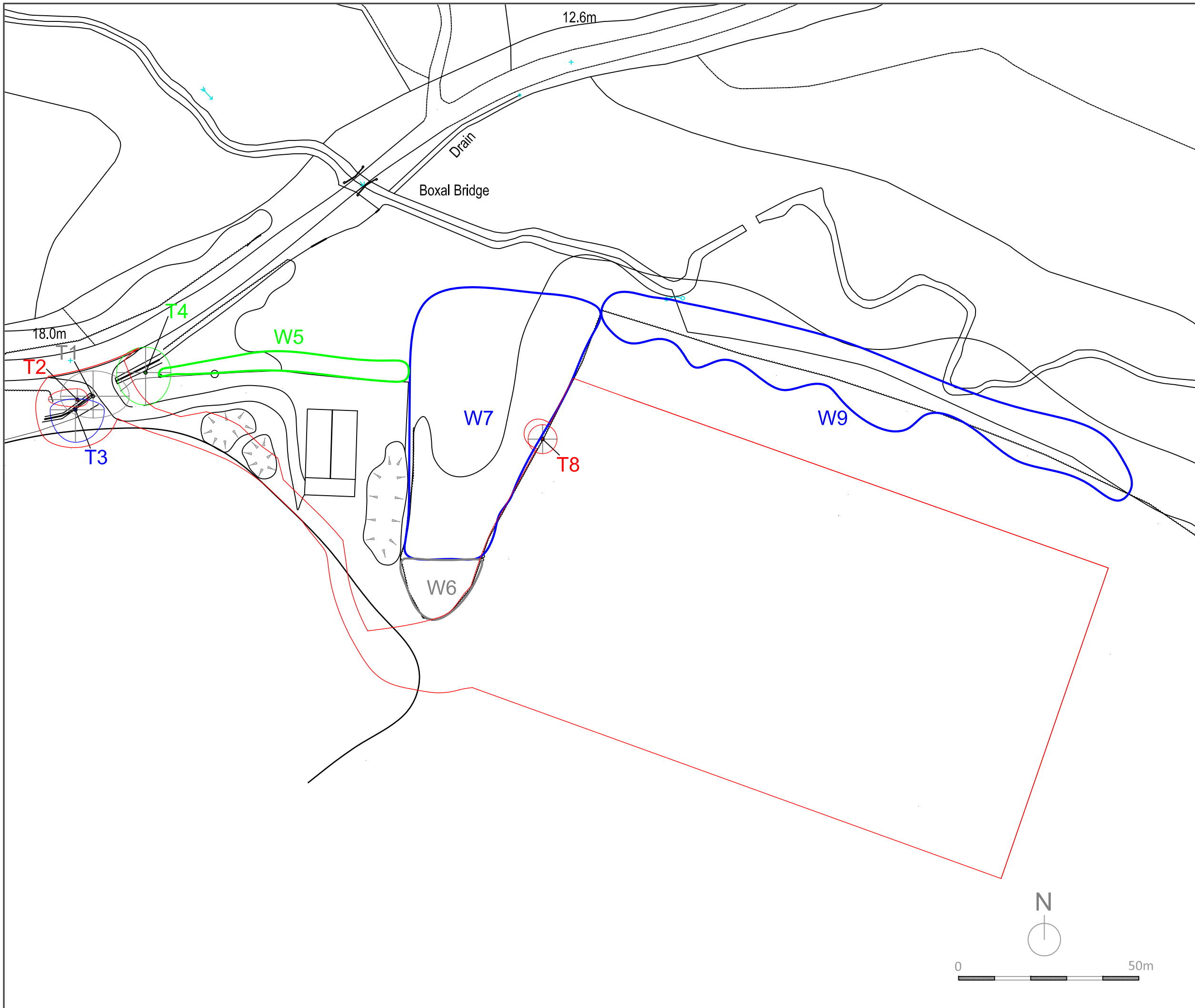
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## Plans


- Plan EDP 1**      Tree Survey Plan  
(EDP1902/04b 22 August 2013 DS/JM)
- Plan EDP 2**      Tree Constraints Plan  
(EDP1902/05b 22 August 2013 DS/JM)
- Plan EDP 3**      Tree Protection Plan  
(EDP 1902/06d 06 January 2014 EB/DW)


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 Site Boundary

**TREE CATEGORIES:**

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

 **Category B**  
 Those of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested).

 **Category C**  
 Those of low quality and value: currently in adequate condition to remain until new planting could be established (a minimum of 10 years is suggested), or young trees with a stem diameter below 150mm.

 **Category U**  
 Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management.



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client

**Celtique Energie Weald Ltd.**

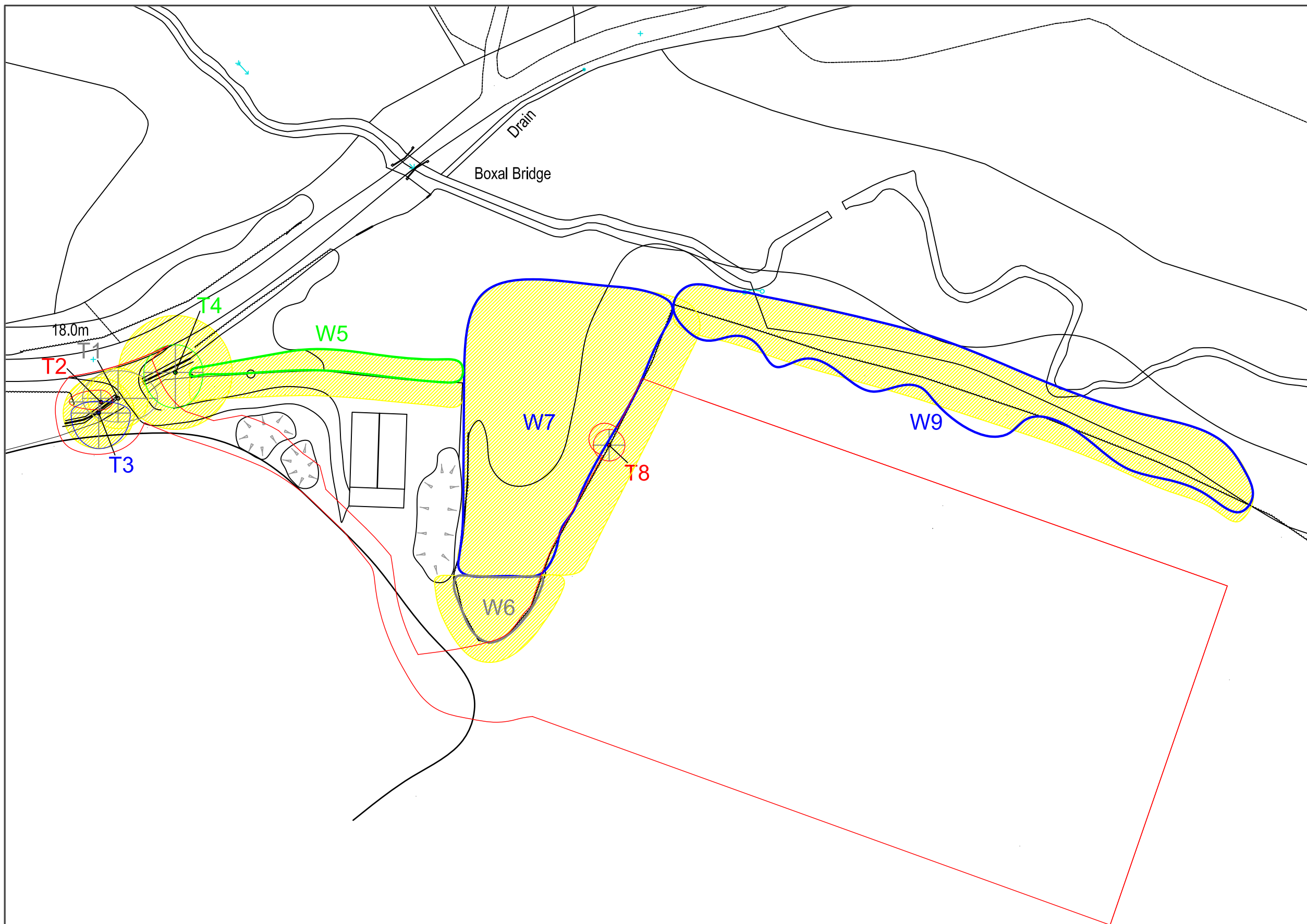
project title

**Wisborough Green, West Sussex - Exploratory Well Site**

drawing title

**Plan EDP 1: Tree Survey Plan**

date 22 AUGUST 2013  
 drawing number EDP1902/04b  
 scale 1:1000 @A3  
 drawn by DS  
 checked JM



Site Boundary

**TREE CATEGORIES:**

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

**Category B**  
Those of moderate quality and value: those in such a condition as to make a significant contribution (a minimum of 20 years is suggested).

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Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management.

**TREE CONSTRAINTS:**

RPA - (Root Protection Area)  
Calculated using the methods set out in Para. 4.6 of BS5837:2012



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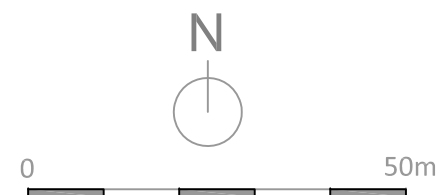
project title

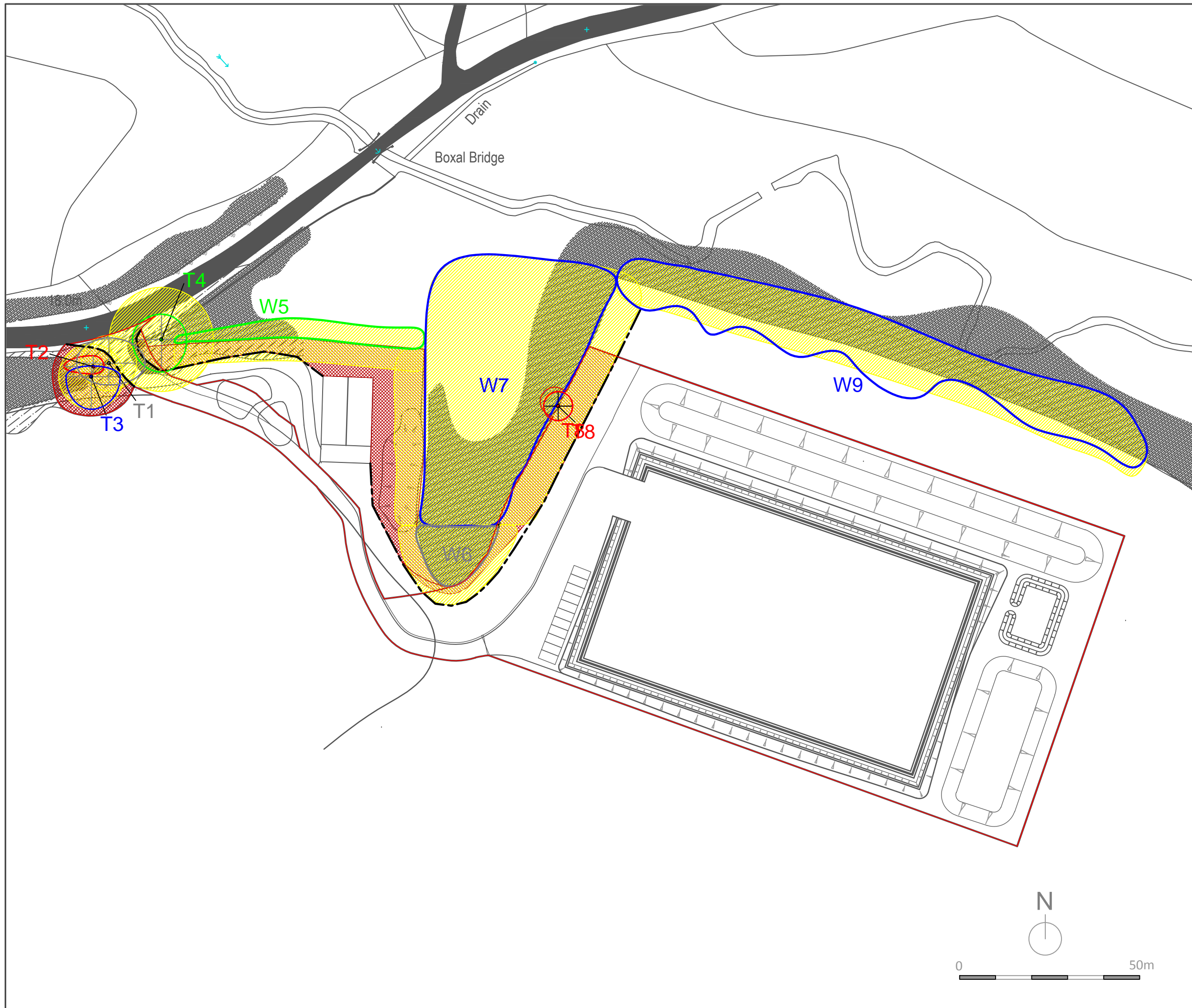
**Wisborough Green, West Sussex - Exploratory Well Site**

drawing title

**Plan EDP 2: Tree Constraints Plan**

date 22 AUGUST 2013  
drawing number EDP1902/05b  
scale 1:1000 @A3  
drawn by DS  
checked JM





- Site Boundary
- TREE CATEGORIES:**
- Category A
- Category B
- Category C
- Category U  
Trees to be retained as an ecological resource.
- TREE CONSTRAINTS:**
- RPA - (Root Protection Area)  
Calculated using the methods set out in Para. 4.6 of BS5837:2012
- Line of Protective Barrier
- Construction Exclusion Zone (CEZ) - Area based on the RPA from which access is prohibited for the duration of the project.



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project title  
**Wisborough Green, West Sussex - Exploratory Well Site**

drawing title  
**Plan EDP 3: Tree Protection Plan**

date	06 JANUARY 2014
drawing number	EDP1902/06d
scale	1:1000 @A3
drawn by	EB
checked	DW



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