

**Land off
Cowbridge Road,
St Athan, Vale of
Glamorgan**

**Findings of
Arboricultural
Baseline**

Assessment

(Incorporating Tree
Constraints and
Arboricultural Impact
Assessment)

Prepared by:
**The Environmental
Dimension
Partnership Ltd (EDP)**

On behalf of:
Edenstone Homes

November 2016
Report Reference
EDP3504_02a



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This version is intended for electronic viewing only

For EDP use

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Executive Summary

- S1 The Environmental Dimension Partnership Ltd (EDP) was commissioned by Edenstone Homes to undertake an Arboricultural Assessment in respect of the proposed development of Land off Cowbridge Road, St Athan, Vale of Glamorgan.
- S2 The baseline arboricultural assessment included a desk top study and tree survey based on guidelines set out in *BS 5837:2012 Trees in Relation to Design, Demolition and Construction*, especially Section 4.4, 'Tree Survey'.
- S3 Vale of Glamorgan Council have been contacted regarding Tree Preservation Orders, to date no further correspondence has been received.
- S4 Consultation with the online resource of Vale of Glamorgan Council confirms that no part of the site lies within a designated Conservation Area.
- S5 The site is 11 hectares (ha) in size and located adjacent to Cowbridge Road, to the immediate north of RAF St Athan. The village of St Athan is situated approximately 1km to the south, and the village of Flemingston is situated approximately 400m to the north-east. The site comprises two large fields of pasture and a smaller area that is currently an open amenity space associated with an adjacent housing estate, Eglwys Brewis, located to the immediate south-east.
- S6 The survey has identified 20 category B items, of moderate quality and value, out of a total of 34 items. Where practicable, these items have been prioritised for retention due to their condition, age and retention span.
- S7 The Masterplan shows the creation of hedgerows along the boundaries of the development. In addition, further planting is also indicated within the residential development, public open spaces and sustainable drainage features. The loss of nine items and the partial loss of a further three is more than compensated for by the net quantity of new tree planting throughout the site.
- S8 Existing trees identified for retention on the appended Tree Protection Plan will continue to be managed in accordance with BS 5837:2012. Critically, this requires arboricultural review of any future emerging detailed design and the implementation of physical protection measures to safeguard the retained trees, including robust protection in the form of a barrier conforming to BS 5837:2012, during the demolition and construction phases. The importance of such matters cannot be overlooked if a successful outcome is to be ensured

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Section 1 Introduction and Methodology

- 1.1 The Environmental Dimension Partnership Ltd (EDP) has been commissioned by Edenstone Homes ('the applicant') to undertake a BS 5837:2012 *Trees in Relation to Design, Demolition and Construction* compliant survey of the trees in relation to the proposed development of Land off Cowbridge Road, St Athan, Vale of Glamorgan (hereafter referred to as 'the site').
- 1.2 EDP is an independent environmental planning consultancy with offices in Cirencester, Shrewsbury and Cardiff. The practice provides advice to private and public sector clients throughout the UK in the fields of landscape, ecology, heritage, masterplanning and arboriculture. Details of the practice can be obtained at our website www.edp-uk.co.uk.
- 1.3 The survey was undertaken on 24 August 2016 by Luke Tamblyn, EDP's Principal Arboriculturist. The focus of this survey 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.
- 1.4 The site is 11 hectares (ha) in size and located adjacent to Cowbridge Road to the immediate north of RAF St Athan. The village of St Athan is situated approximately 1km to the south, and the village of Flemingston is situated approximately 400m to the north-east. The site comprises two large fields of pasture and a smaller area that is currently an open amenity space associated with an adjacent housing estate, Eglwys Brewis, located to the immediate south-east.
- 1.5 The proposal is for outline planning permission for c. 300 residential dwellings (as allocated within the draft LDP) with associated public open space and the provision of vehicular and pedestrian access into the site.

Aims and Objectives

- 1.6 The purpose of this report is to:
- Identify principal trees suitable for retention; and
 - Identify the constraints associated with retained trees to inform the conceptual design and layout of the proposed scheme.

Tree Survey Methodology

- 1.7 The methodology adopted for this survey is based on guidelines set out in *BS 5837:2012 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 constraints 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.
- 1.8 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 BS 5837:2012.
- 1.9 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 that may result from the development proposals.
- 1.10 **Schedule EDP 1** provides information about the following factors in accordance with paragraph 4.4.2.5 of BS 5837:2012:
- Sequential reference number (recorded on **Plan EDP 1**);
 - Species;
 - Height;
 - Stem diameter;
 - Branch spread;
 - Existing height above ground level;
 - Life stage;
 - Physiological condition;
 - Structural condition;
 - Preliminary management recommendations;
 - Estimated remaining contribution;
 - Category grading; and

- Tree works priority codes.

Limitations

- 1.11 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.
- 1.12 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.
- 1.13 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.
- 1.14 The subject trees have not been tagged for identification purposes.

Statutory Protection

Tree Preservation Orders and Conservation Areas

- 1.15 Vale of Glamorgan Council have been contacted regarding Tree Preservation Orders (TPO) on the site, to date no correspondence has been received.
- 1.16 Should any trees be formally protected by a TPO, any works to or felling of TPO trees would require a formal application to the Local Planning Authority. Alternatively, the works or felling of TPO trees can be agreed by way of an Arboricultural Survey as part of an approved, detailed planning application.
- 1.17 Consultation with the online resource of Vale of Glamorgan Council ascertains that no part of the site lies within a designated conservation area.

Protected Wildlife and Trees

Bats

- 1.18 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, and further information is provided in **Appendix EDP 3** of this report.

Nesting Birds

- 1.19 The main bird nesting season is between March and August inclusive. Current legislation relating to breeding birds, under the *Wildlife and Countryside Act 1981* (as amended) and the *Countryside and Rights of Way Act 2000*, confirms that birds, as well as their nests and eggs are protected. Further information is provided in **Appendix EDP 3** of this report.

Section 2 Summary of Findings

The Tree Stock

- 2.1 The survey process recorded a total of 17 individual trees, eight hedgerows, eight groups of trees and one woodland item totalling 34 items. **Schedule EDP 1** 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.

Species Diversity

- 2.2 A total of 14 species are represented throughout the site, a summary of this is presented in **Figure EDP 2.1**. In order to illustrate a reflection of the overall diversity, each species represented individually or in a group or hedgerow is allocated a single count.

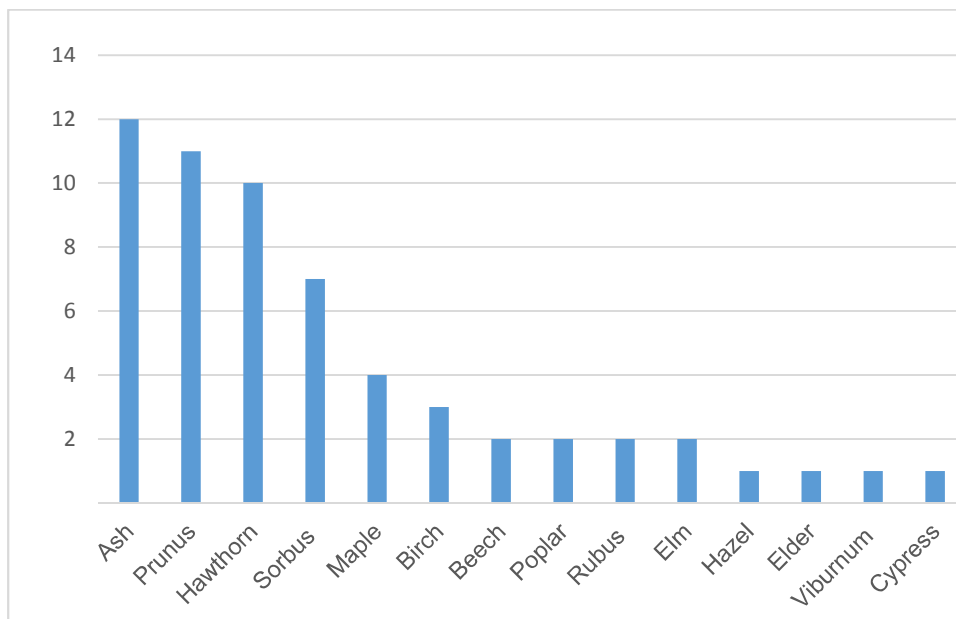


Figure EDP 2.1: Species Diversity

Age Distribution

- 2.3 Analysis of the data in **Schedule EDP 1** identifies that there are six early mature items which, whilst being partially tolerant to ground disturbance, are beyond the scale of trees that can be readily trans-located; and 28 mature items recorded which have a particular sensitivity to abiotic factors such as ground disturbance and therefore require particular consideration in any future development proposals.

Grading Classification

- 2.4 Whilst age distribution and species diversity give an insight into the composition of the tree stock, arguably more important is 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 contained as **Appendix EDP 4**, 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.
- 2.5 **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 **Figure EDP 2.2**. Across the site there are; 20 category 'B' items of moderate quality and value; and eight category 'C' items of low quality and value. In addition, six 'U' category items were recorded, these items are considered unsuitable in the current site context and should be considered for removal.

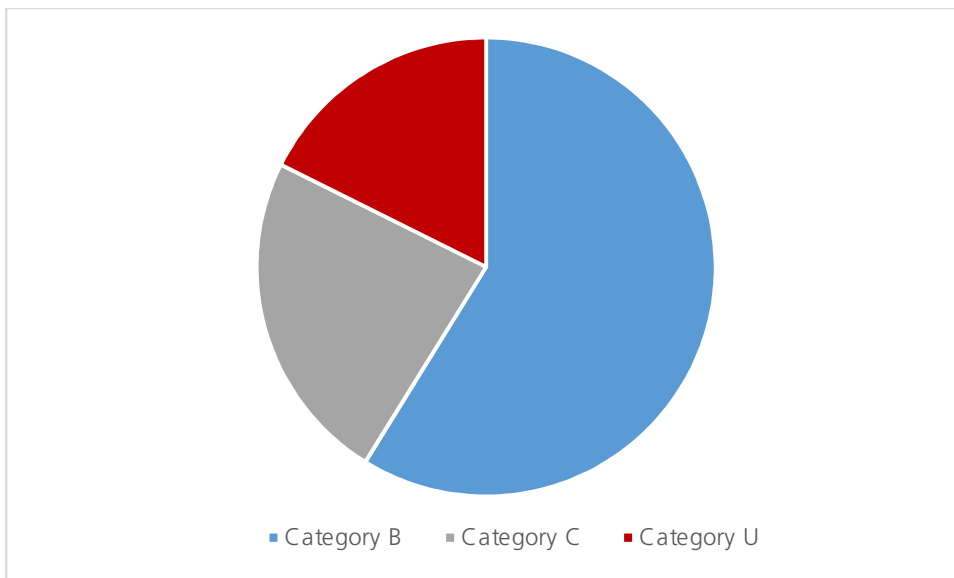


Figure EDP 2.2: Category Grading Across the Tree Stock

Tree Stock Summary

- 2.6 The distribution of species, age and categories is indicative of a site lacking any formal management. Ash dominates the site as standard trees, while hawthorn and blackthorn dominate the fabric of the hedgerows. In the public open space, situated in the south of the site, it is apparent that some arboricultural management has been undertaken resulting in the better quality of trees.

- 2.7 20 items have been graded as category 'B', and are of moderate quality and value, these trees have been prioritised for retention due to their condition, age and retention span.

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Section 3 Arboricultural Constraints

Consideration of Tree Constraints within the Design Process

- 3.1 This report recognises that construction activities pose a threat to the successful retention of trees if handled inappropriately. It is essential to consider the relationship between development and trees during the design process, to identify the potential impacts on trees and the need for design alterations to accommodate the tree stock.
- 3.2 Sustainable design has sought to achieve a harmonious relationship between trees and the built form to reduce/eliminate impacts where possible. Any future design should be informed by the constraints information presented in **Plan EDP 1** and **Schedule EDP 1** and the recommendations below to ensure the long term health of the tree stock.
- 3.3 These recommendations identify surveyed items of particular merit, which should be incorporated within the design, to avoid foreseeable conflicts between development and the tree stock.
- 3.4 Future masterplanning has sought to retain all trees where possible. It is acknowledged that where practical and appropriate tree loss/encroachment within the root protection area (RPA) can be mitigated through the provision of new landscape planting and no dig methodology respectively. The default position, however, should be the retention of all living trees irrespective of grading where practical to do so.

Below-ground Constraints – Root Protection Area

- 3.5 The below-ground constraints are defined as the likely spread and disposition of the root system of the tree and are as depicted on **Plan EDP 1**, as RPAs, and pink outlined areas around each surveyed item.
- 3.6 The RPA is defined as the minimum area (in m²) around the tree that is deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority.
- 3.7 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 assessment of the likely root distribution.
- 3.8 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; and
 - 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.
- 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 BS 5837:2012. The extent of this enclosed area is depicted upon a Tree Protection Plan (**Plan EDP 2**).
- 3.10 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 BS 5837:2012 reproduced as **Appendix EDP 5**.

Above-ground Constraints – Proximity of Trees to Structures

- 3.11 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 1**.
- 3.12 Where the current and/or ultimate height of a category 'B' or 'C' trees will cause an unreasonable obstruction to the proposed development, this must be considered as a constraint. This is usually considered in terms of issues relating to shade and light.
- 3.13 The above ground constraints can be a combination of factors such as:
- Shading of buildings and open space - a detailed daylight and shading study may be necessary if any proposed buildings are in the immediate vicinity of retained trees;
 - Direct damage to structures;
 - Future pressure for removal;
 - Seasonal nuisance (e.g. leaf fall blocking gutters, fruit fall creating slippery patches and honey dew dripping on vehicles and surfaces);

- Deciduous or evergreen; and
- Density of foliage.

Site Specific Constraints

- 3.14 **Schedule EDP 1** contains full attribute details for two off-site items. While these items remain outside of the direct control of the scheme, the above and below ground constraints have been to be considered in any future design process.
- 3.15 The survey has identified 20 category 'B' items, of moderate quality and value. These items have been prioritised for retention, where practicable, due to their condition, age and retention span.

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Section 4 Arboricultural Impact Assessment

- 4.1 This Arboricultural Impact Assessment (AIA) has been prepared following site based observations, a desktop study of the survey data and consideration of the proposed site masterplan (**Appendix EDP 7**). In particular, it relates to the baseline arboricultural assessment and constraints information (**Plan EDP 1**), which is overlaid onto the proposed site plan. The resulting drawing, a Tree Protection Plan (**Plan EDP 2**) is provided at the rear of this report.
- 4.2 Trees within the urban environment are important features in terms of their contribution towards psychological wellbeing, their provision of ecological habitat and sociological benefits.
- 4.3 Any scheme in proximity to trees has the potential to cause harm unless control measures are identified and acted upon; as such, it is essential to consider the relationship between the proposed scheme and the retained trees to identify what precautions are necessary and proportionate. The scheme has the potential to impact upon the above ground (canopy, stems and branches) and below ground (rooting environment) parts of the trees.
- 4.4 Whilst some clear and obvious physical damage can occur to trees during the construction phase, such as to stems and branches, other impacts are not always immediately evident, such as damage to the soil structure by compaction, and changes in ground levels causing root damage, altering the water table and affecting moisture availability.
- 4.5 This AIA recognises that construction activities pose a threat to subject trees if treated inappropriately 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.
- 4.6 Assessment of the impact of the proposals has been determined following consideration of the constraints each surveyed item poses by virtue of its position, branch spread and designated RPA.
- 4.7 Consideration should be given to retaining all trees where possible. However, ultimately the removal of any tree is dependent on its proximity to the footprint of any proposal and associated landscaping.
- 4.8 The masterplan (**Appendix EDP 7**) has evolved following inputs from EDP and consideration of the constraints posed by the trees. As a result, the footprint of the proposed development has taken account of the findings of this survey and tree losses have been minimised accordingly.

Trees Unaffected by Development

- 4.9 Review of the masterplan identifies that 22 of the surveyed items are unaffected by the development proposals. However, so as to avoid inadvertent damage, all items which are to be retained, abutting the proposed construction and demolition, shall be protected in accordance with the provisions set out in **Section 3** of this document.

Damage to Rooting Environment during Construction Activities

- 4.10 The required RPA for each tree as described in **Schedule EDP 2** is depicted on **Plan EDP 1**. 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 *BS 5837:2012*. The extent of this enclosed area is depicted on **Plan EDP 2**.

Trees Under the Footprint of Highway Access Proposals

- 4.11 To facilitate construction of the highway arrangements, two items will require partial removal, these are detailed in **Table EDP 4.1**. Both items are 'B' category, of moderate quality and value.

Table EDP 4.1: Tree Items Requiring Removal to Facilitate Highway Arrangements

Ref. Number	Species	Category Grading
G17	Leyland cypress (<i>Cupressus x leylandii</i>)	B
H25	Hazel sp. (<i>Corylus sp.</i>); Hawthorn sp. (<i>Crataegus sp.</i>); Ash sp. (<i>Fraxinus sp.</i>); Blackthorn (<i>Prunus spinosa</i>); Elm sp. (<i>Ulmus sp.</i>); Viburnum sp. (<i>Viburnum sp.</i>)	B

Trees and Groups Requiring Removal for Residential Development

- 4.12 To facilitate the proposed residential development, eight items will require removal, these are detailed in **Table EDP 4.2**. Of these items, four are 'B' category, of moderate quality and value, and three are 'C' category, of low quality and value. Additionally one 'U' category item will require removal.

Table EDP 4.2: Tree Items Requiring Removal to Facilitate Residential Development

Ref. Number	Species	Category Grading
T1	Norway maple (<i>Acer platanoides</i>)	B
T2	Unknown Deciduous	B
T4	Sorbus sp. (<i>Sorbus sp.</i>)	U
T8	Sorbus sp. (<i>Sorbus sp.</i>)	C
T9	Sorbus sp. (<i>Sorbus sp.</i>)	C
T10	Ash sp. (<i>Fraxinus sp.</i>)	B

Ref. Number	Species	Category Grading
G11	Beech sp. (<i>Fagus sp.</i>); Sorbus sp. (<i>Sorbus sp.</i>)	B
T14	Birch sp. (<i>Betula sp.</i>)	C

Trees and Groups Requiring Partial Removal for Residential Development

- 4.13 To facilitate the proposed residential development, two items will require partial removal, these are detailed in **Table EDP 4.3**. Both of these items are 'B' category, of moderate quality and value.

Table EDP 4.3: Tree Items Requiring Partial Removal to Facilitate Residential Development

Ref. Number	Species	Category Grading
G15	Birch sp. (<i>Betula sp.</i>); Hawthorn sp. (<i>Crataegus sp.</i>)	B
G17	Leyland cypress (<i>Cupressus x leylandii</i>)	B

Groups Requiring Partial Removal for Local Equipped Area for Play (LEAP)

- 4.14 To facilitate the proposed LEAP, one item will require partial removal, G15, a 'B' category, of moderate quality and value, comprising Birch sp. (*Betula sp.*); Hawthorn sp. (*Crataegus sp.*).

Trees Requiring Removal for LEAP

- 4.15 To facilitate the proposed LEAP, one item will removal, T16, a 'C' category ash (*Fraxinus sp.*), of low quality and value.

Summary of Tree Losses and Retention

- 4.16 A summary of the tree and group losses and retention, based upon the development proposals is provided in **Table EDP 4.4**.

Table EDP 4.4: Summary of Tree and Group Losses and Retention

	Existing	Trees and Groups Lost Due to Proposals	Groups Impacted Due to Proposals	Trees and Groups Unaffected by Proposals
Category A	0	0	0	0
Category B	20	4	3	13
Category C	8	4	0	4
Category U	6	1	0	5
Totals	34	9	3	22

Mitigation

- 4.17 The Masterplan shows the creation of hedgerows along the boundaries of the development. In addition, further planting is also indicated within the residential development, public open spaces and sustainable drainage features. The loss of nine items and the partial loss of a further three is more than compensated for by the net quantity of new tree planting throughout the site.
- 4.18 Existing trees identified for retention on the appended Tree Protection Plan (**Plan EDP 2**) will continue to be managed in accordance with *BS 5837:2012*. Critically, this requires arboricultural review of any future emerging detailed design and the implementation of physical protection measures to safeguard the retained trees, including robust protection in the form of a barrier to *BS 5837:2012* (**Appendix EDP 5**), during the demolition and construction phases. The importance of such matters cannot be overlooked if a successful outcome is to be ensured.

Section 5 Recommendations for Tree Works and Tree Protection

Tree Surgery Works

- 5.1 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).
- 5.2 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 Protection – General Considerations

- 5.3 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 via preparation of an Arboricultural Impact Assessment shall be protected in accordance with the provisions outlined in BS5837:2012 following the preparation of a detailed Tree Protection Plan.
- 5.4 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.

Tree Surgery Works - Timing

- 5.5 A total of four 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 proposed land use. **Schedule EDP 1** and **Plan EDP 1**, contained to the rear of this report detail 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 5.1**.

Table EDP 5.1: Priority Code 2 Tree Works Summary

Tree Number	Tree Species	Management Recommendation
T6	Ash sp. (<i>Fraxinus p.</i>)	Fell - Ground level
T7	Poplar sp. (<i>Populus sp.</i>)	Fell - Ground level
T10	Ash sp. (<i>Fraxinus sp.</i>)	Deadwood - Remove

Tree Number	Tree Species	Management Recommendation
T12	Ash sp. (<i>Fraxinus sp.</i>)	Fell - Ground level

Recommendations for Future Action

5.6 To minimise the impact on retained trees the following is recommended:

- The 'Recommendations for Tree Protection' detailed in this section and **Appendix EDP 5** of this report are followed: It is proposed that the lines of protective barriers are agreed with the LPA prior to commencement on site;
- All protective barriers must remain intact and in place throughout the period of construction if it is to be effective, and should only be removed by the main contractor following a written instruction from the Contract Administrator;
- It is recommended that, prior to demolition or 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 BS 5837:2012;
- Excavation under the canopies of trees to construct roads or other paved areas with their associated kerb drainage and service runs can seriously affect tree health. The line of service runs should be carefully designed to avoid passing under tree canopies. Guidance for the planning and installation of services should be sought from NJUG 4, issue 2¹ (**Appendix EDP 6**). Where this is not possible, allowance should be made to ensure excavations are undertaken by hand in accordance with the Section 7.1 and 7.7 of BS 5837:2012;
- The lowering of the water table and/or the disruption of soil moisture profiles can be detrimental to retained trees. It is recommended that as much of the hard standing areas as possible either drain to soft landscape areas and/or drain to soakaways; and
- It is recommended that following the completion of the development, arboricultural inspections of all site trees are undertaken on an annual cycle. This is so that the health of the trees can be monitored in relation to their continued viability and safety.

¹ National Joint Utilities Group - Guidelines For The Planning, Installation And Maintenance Of Utility Apparatus In Proximity To Trees

Section 6 Summary and Conclusions

- 6.1 The Environmental Dimension Partnership (EDP) Ltd was instructed by Edenstone Homes to undertake a survey of trees in relation to the proposed development of land off Cowbridge Road, St Athan, Vale of Glamorgan. The survey was undertaken by EDP's Principle Arboriculturist on 24 August 2016 in dry and overcast conditions.
- 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 17 individual trees, eight hedgerows, eight group items and one woodland are included as **Schedule EDP 1** and illustrated on **Plan EDP 1** of this report.
- 6.4 The site is 11 hectares (ha) in size and located adjacent to Cowbridge Road to the immediate north of RAF St Athan. The village of St Athan is situated approximately 1km to the south, and the village of Flemingston is situated approximately 400m to the north-east. The site comprises two large fields of pasture and a smaller area that is currently an open amenity space associated with an adjacent housing estate, Eglwys Brewis, located to the immediate south-east.
- 6.5 Of the surveyed items, two lie outside of the red line boundary. These off-site items remain outside of the direct control of the development, but remain a constraint on the site due to their location adjacent to the site boundary.
- 6.6 The survey has identified a total of 34 items, 20 of these items are category 'B' items, of moderate quality and value, and should be prioritised for retention due to their condition, age and retention span.
- 6.7 The Masterplan shows the creation of hedgerows along the boundaries of the development. In addition, further planting is also indicated within the residential development, public open spaces and sustainable drainage features. The loss of nine items and the partial loss of a further three is more than compensated for by the net quantity of new tree planting throughout the site.
- 6.8 Existing trees identified for retention on the appended Tree Protection Plan (**Plan EDP 2**) will continue to be managed in accordance with *BS 5837:2012*. Critically, this requires arboricultural review of any future emerging detailed design and the implementation of physical protection measures to safeguard the retained trees, including robust protection in the form of a barrier to *BS 5837:2012* (**Appendix EDP 5**), during the demolition and construction phases. The importance of such matters cannot be overlooked if a successful outcome is to be ensured.

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Appendix EDP 1 Glossary

Arboricultural Impact Assessment	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.
Arboricultural Method Statement	Methodology for the implementation of any aspect of development that has the potential to result in loss of, or damage to a tree.
Construction Exclusion Zone	Area based on the RPA (in m ²), 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.
Detailed Investigation	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.
Root Protection Area (RPA)	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 ² .
Services	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.
Special Engineering	Design of a structure with the physiological requirements of trees as a priority.
Tree Constraints Plan	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.
Tree Protection Plan	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.
Veteran Trees	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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169250N
169300N
169350N
169400N
169450N
169500N
169550N
169600N
169650N

Appendix EDP 3 Protected Species and Trees

Bats

- A3.1 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.
- A3.2 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 that 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.
- A3.3 Prior to undertaking any tree works or tree removal further advice should be sought from a suitably qualified ecologist.

Nesting Birds

- A3.4 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.

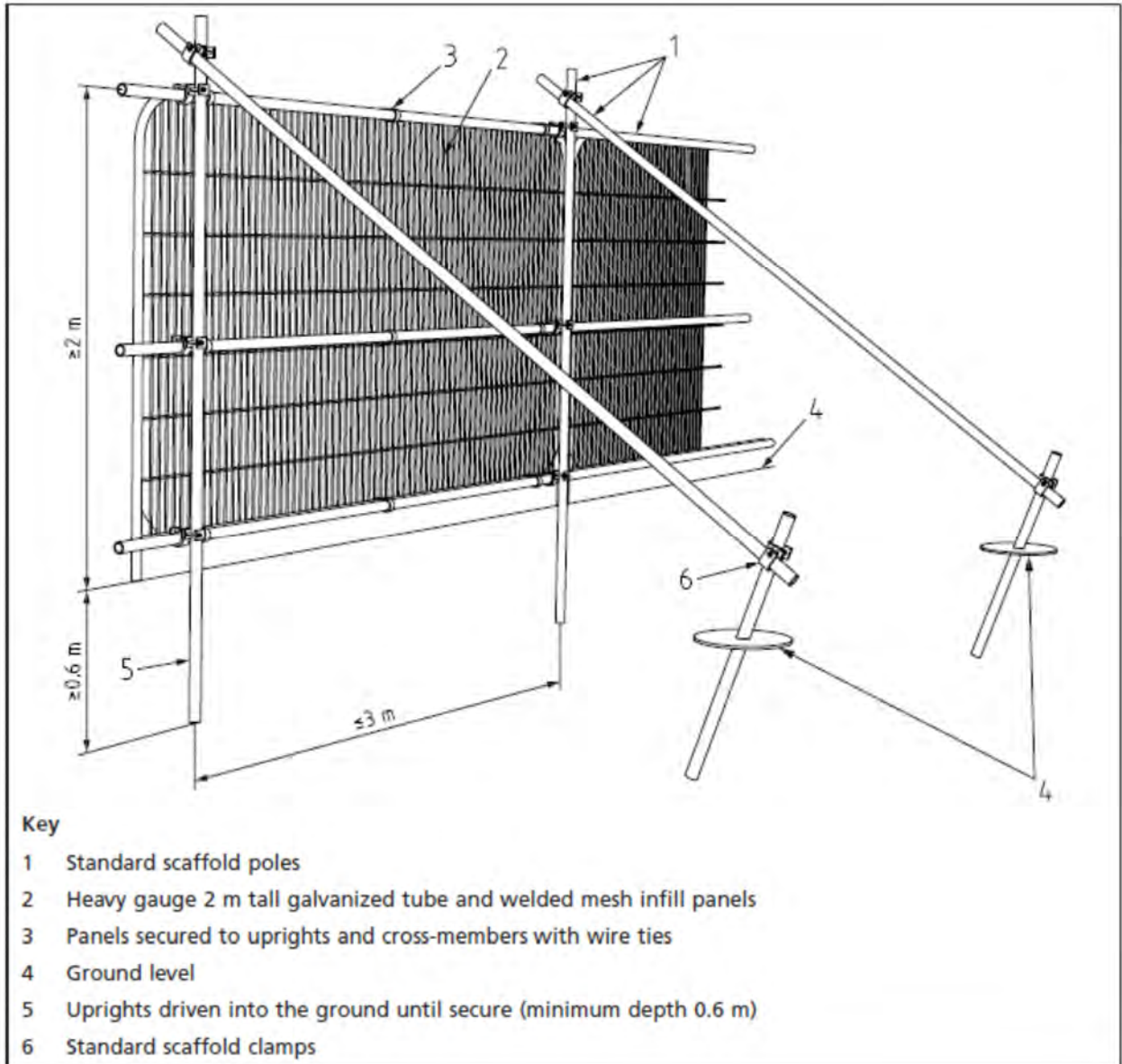
Appendix EDP 4

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

Category and definition	Criteria (including subcategories where appropriate) Identification on plan		
Trees unsuitable for retention (see Note)			
Category 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	<ul style="list-style-type: none"> • 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) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • 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 <p>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</p>		
	1 Mainly arboricultural qualities	2 Mainly landscape qualities	3 Mainly cultural values, including conservation
Trees to be considered for retention			
Category A Trees of high quality 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)
Category B Trees of moderate quality 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
Category C Trees of low quality 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

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Appendix EDP 5 Tree Protection Barrier on Scaffold 2.0m High (Extract from BS 5837:2012, Figure 2 'Protective Barrier')

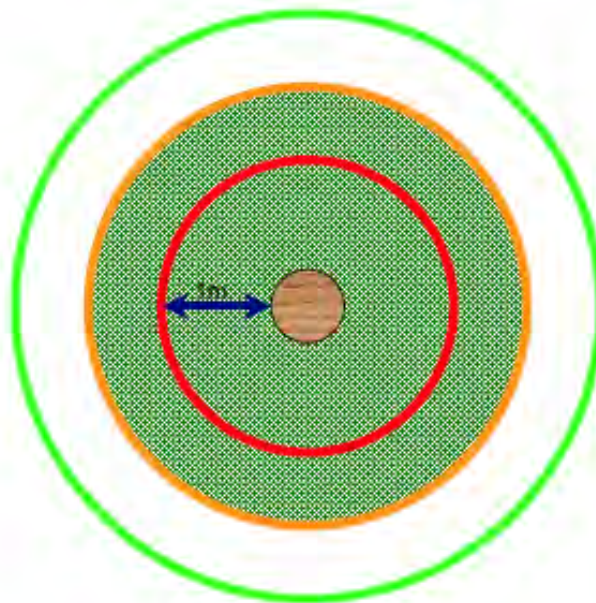


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Appendix EDP 6 NJUG Vol. 4: Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Issue 2)



NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees – Issue 2



TREE PROTECTION ZONE

Key to Diagram



Trunk of Tree



Spread of canopy or branches



PROHIBITED ZONE – 1m from trunk. Excavations of any kind must not be undertaken within this zone unless full consultation with Local Authority Tree Officer is undertaken. Materials, plant and spoil must not be stored within this zone.



PRECAUTIONARY ZONE – 4 x tree circumference. Where excavations must be undertaken within this zone the use of mechanical excavation plant should be prohibited. Precautions should be undertaken to protect any exposed roots. Materials, plant and spoil should not be stored within this zone. Consult with Local Authority Tree Officer if in any doubt.



PERMITTED ZONE – outside of precautionary zone. Excavation works may be undertaken within this zone however caution must be applied and the use of mechanical plant limited. Any exposed roots should be protected.



NJUG Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees – Issue 2

DAMAGE TO TREES

Tree roots keep a tree healthy and upright. Most roots are found in the top 600mm of soil and often grow out further than the tree's height. The majority of these roots are very fine; even close to a tree few will be thicker than a pencil. Most street tree roots grow under the footway but may also extend under the carriageway. If roots are damaged the tree may suffer irreversible harm and eventually die.

PROTECTING ROOTS - DO'S and DON'TS

There are three designated zones around a tree each of which has its own criteria for working practices.

THE PROHIBITED ZONE

- Don't** excavate within this zone.
- Don't** use any form of mechanical plant within this zone
- Don't** store materials, plant or equipment within this zone.
- Don't** move plant or vehicles within this zone.
- Don't** lean materials against, or chain plant to, the trunk.
- Do** contact the local authority tree officer or owner of the tree if excavation within this zone is unavoidable.
- Do** protect any exposed roots uncovered within this zone with dry sacking.
- Do** backfill with a suitable inert granular and top soil material mix as soon as possible on completion of works.
- Do** notify the local authority tree officer or the tree's owner of any damage.

THE PRECAUTIONARY ZONE

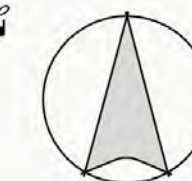
- Don't** excavate with machinery. Where excavation is unavoidable within this zone excavate only by hand or use trenchless techniques.
- Don't** cut roots over 25mm in diameter, unless advice has been sought from the local authority tree officer.
- Don't** repeatedly move / use heavy mechanical plant except on hard standing.
- Don't** store spoil or building material, including chemicals and fuels, within this zone.
- Do** prune roots which have to be removed using a sharp tool (e.g. secateurs or handsaw). Make a clean cut and leave as small a wound as possible.
- Do** backfill the trench with an inert granular material and top soil mix. Compact the backfill with care around the retained roots. On non highway sites backfill only with excavated soil.
- Do** protect any exposed roots with dry sacking ensuring this is removed before backfilling.
- Do** notify the local authority tree officer or the tree's owner of any damage.

THE PERMITTED ZONE

- Don't** cut roots over 25mm in diameter, unless advice has been sought from the local authority tree officer.
- Do** use caution if it is absolutely necessary to operate mechanical plant within this zone.
- Do** prune roots which have to be removed using a sharp tool (e.g. secateurs or handsaw). Make a clean cut and leave as small a wound as possible.
- Do** protect any exposed roots with dry sacking ensuring this is removed before backfilling.
- Do** notify the local authority tree officer or the tree's owner of any damage.

Appendix EDP 7
Masterplan (Drawing no. 100, Rev B.)

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THE CONTRACTOR IS TO COMPLY IN ALL RESPECTS WITH CURRENT BUILDING LEGISLATION, N.H.B.C. AND BUILDING REGULATIONS WHETHER OR NOT SPECIFICALLY STATED ON THIS DRAWING.

THIS DRAWING MUST BE READ & CHECKED AGAINST ANY STRUCTURAL, GEOTECHNICAL OR OTHER SPECIALIST DOCUMENTATION OR PLANS PROVIDED.

THIS DRAWING IS NOT INTENDED TO SHOW DETAILS OF FOUNDATIONS, GROUND CONDITIONS OR GROUND CONTAMINANTS. EACH AREA OF GROUND RELIED UPON TO SUPPORT ANY STRUCTURE DEPICTED (INCL. DRAINAGE) MUST BE INVESTIGATED BY THE CONTRACTOR. A SUITABLE METHOD OF FOUNDATION SHOULD BE PROVIDED ALLOWING FOR EXISTING GROUND CONDITIONS. ANY EARTHWORK CONSTRUCTIONS SHOWN INDICATE TYPICAL SLOPES FOR GUIDANCE ONLY AND SHOULD BE FURTHER INVESTIGATED BY A SUITABLE EXPERT.

WHERE EXISTING TREES ARE SHOWN TO BE RETAINED THEY SHOULD BE SUBJECT TO A FULL ARBORICULTURAL INSPECTION FOR SAFETY. A SUITABLE METHOD OF FOUNDATION IS TO BE PROVIDED TO ACCOMMODATE PROPOSED TREE PLANTING.

- ① Cowbridge Road
- ② Surface Water Attenuation Area
- ③ Secure Area For Access To Pump Station
- ④ Informal Public Open Space
- ⑤ LAP
- ⑥ LEAP
- ⑦ NEAP
- ⑧ Archaeological Feature - With 10m Buffer Zone
- ⑨ New Footway To Join Accesses
- ⑩ Existing Residential Development
- ⑪ Existing Pump Station With Right Of Way Through Development
- ⑫ Existing Stream
- ⑬ Road Improvement Works - Widened Footways - Pedestrian Crossings - Speed Limit Transitions Relocated - 2.4m x 4.3m Visibility Splays

General Notes

LEGEND

- Development Boundary
- Indicative Residential Proposed Built Form
- Dual Aspect
- Focal Building
- Vehicular Access Point
- Proposed / Diverted Public Right Of Way
- Primary Vehicular & Pedestrian Movement
- Secondary Vehicular & Pedestrian Movement
- Existing Buildings
- Flood Zone
- Existing & Proposed Hedge Buffer
- Proposed Trees
- Existing Trees To Be Retained
- Existing Trees To Be Removed



Rev	Date	By	Comment
B	22.11.16	DA	Access to Pump Station revised Units added adjacent to PS
A	09.11.16	DA	Modular treatment tank replaced with pump station, layout updated

RESIDENTIAL DESIGN PLANNING

Hammonds Yates

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 T: 01275 844744 E Mail: info@hammondsyates.com

Client:
Edenstone Homes

Project Title:
Cowbridge Road St Athan

Drawing Title:
Illustrative Masterplan

Drawing Status

Drawn By DA	Scales 1:1000	A1	Date September 20
Job No. 1617	Drawing No. 100	Rev. B	

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Schedule EDP 1 Tree Survey Schedule and Key

Sequential Reference Number	<p>T - Individual specimen;</p> <p>G - Group, Trees that form cohesive arboricultural features either aerodynamically, visually or culturally;</p> <p>H - Linear group of specimens that form a hedge or boundary; and</p> <p>W - A larger group or area of trees that should be regarded as a single woodland unit.</p>
Species	Common English names are used wherever possible for simplicity.
Height	An approximation of height (in metres) is provided for the highest point of the tree.
Stem Diameter	This is the measurement of stem diameter in millimetres taken in accordance with Annex C of BS 5837:2012.
Branch Spread	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 .
Existing Height Above Ground Level	An approximation of height (in metres) of crown clearance above adjacent ground level.
Life Stage	<p>There are five classes to which trees are assigned:</p> <p>Young;</p> <p>Early Mature;</p> <p>Mature;</p> <p>Over Mature; and</p> <p>Veteran.</p>
Physiological Condition	<p>An indication of the tree's physiological condition is represented and classed as good, fair, poor or dead, this is informed by the following:</p> <p>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</p> <p>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.</p>
Structural Condition	Additional notes are provided giving details of the tree's structural condition. This is informed by "the presence of any decay and physical defect ² ".

² BS 5837:2012 Section 4.4.2.5

<p>Preliminary Management Recommendations</p>	<p>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.</p>
<p>Estimated Remaining Contribution</p>	<p>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:</p> <p>Less than 10;</p> <p>10+;</p> <p>20+; and</p> <p>40+.</p>
<p>Category Grading</p>	<p>Trees have been assigned 'U' or Category Grading 'A' to 'C' in accordance with the Cascade Chart given in BS 5837:2012 (copy extract contained as Appendix EDP 3).</p>
<p>Tree Works Priority Codes</p>	<p>Priority codes from 1 to 3 have been given for trees requiring work. The definition of the codes used is as follows:</p> <p>Priority 1: Work that should be undertaken urgently due to the identification of a potential hazard;</p> <p>Priority 2: Work that should be undertaken prior to any works commencing on site; and</p> <p>Priority 3: Work that should be undertaken following the completion of the development.</p>

Client: Edenstone Homes Ltd Site: Cowbridge Road, St Athan
 Date of Survey: 24/08/2016 Consultant: Luke Tambllyn
 Tagged: N/A Weather: Overcast, Dry

Sequential Reference No.	Species	Height (m)	Stem Diameter (mm)	Branch Spread (m)				Canopy Clearance (m)	Life Stage	Physiological Condition	Structural Condition	Comments / Notes	Recommendations	Estimated Remaining Contribution (Years)	Category Grading	Priority
				North	East	South	West									
T1	Norway maple (Acer platanoides)	9	310#	4	4	4	4	2	Mature	Fair	Fair	Landscape amenity planting	No Work Recommended	20+	B1	N/A
T2	Unknown Deciduous	5	360#	4	4	4	4	0	Mature	Fair	Fair	Landscape amenity planting	No Work Recommended	20+	B1	N/A
T3	Sorbus sp. (Sorbus sp.)	6	600#	4	4	4	4	0	Mature	Fair	Fair	Landscape amenity planting	No Work Recommended	20+	B1	N/A
T4	Sorbus sp. (Sorbus sp.)	6	600#	4	4	1	1	2	Mature	Fair	Poor	Landscape amenity planting; Bark wound - Major; Decay / structural defect - Major	No Work Recommended	<10	U	N/A
G5	Norway maple (Acer platanoides); Ash sp. (Fraxinus sp.); Poplar sp. (Populus sp.)	16	270	3	3	3	3	0	Mature	Fair	Fair	Large group of planted trees, providing screening benefit to neighbouring houses	No Work Recommended	20+	B2	N/A
T6	Ash sp. (Fraxinus sp.)	16	280#	4	6	4	4	0	Mature	Fair	Poor	Landscape amenity planting; Decay / structural defect - Bole	Fell - Ground level	<10	U	2
T7	Poplar sp. (Populus sp.)	16	250#	2	2	2	2	0	Mature	Poor	Poor	Landscape amenity planting; Decay / structural defect - Base	Fell - Ground level	<10	U	2
T8	Sorbus sp. (Sorbus sp.)	7	600#	3	4	4	4	0	Mature	Fair	Fair	Landscape amenity planting; Bark wound - Physical damage or vandalism	No Work Recommended	10+	C12	N/A
T9	Sorbus sp. (Sorbus sp.)	7	600#	4	4	3	4	0	Mature	Fair	Fair	Landscape amenity planting; Bark wound - Physical damage or vandalism; Die-back - Upper crown	No Work Recommended	10+	C12	N/A
T10	Ash sp. (Fraxinus sp.)	13	640	4	5	5	6	0	Mature	Fair	Fair	Landscape amenity planting; Storm damage; Root damage - Mower	Deadwood - Remove	20+	B12	2
G11	Beech sp. (Fagus sp.); Sorbus sp. (Sorbus sp.)	7	600#	4	4	4	4	0	Mature	Fair	Fair	Landscape amenity planting	No Work Recommended	20+	B2	N/A
T12	Ash sp. (Fraxinus sp.)	13	600	5	6	5	3	0	Mature	Poor	Poor	Landscape amenity planting; Physiological / cambial damage - Bacterial	Fell - Ground level	<10	U	2
T13	Beech sp. (Fagus sp.)	11	600	8	4	6	7	0	Mature	Fair	Fair	Landscape amenity planting	No Work Recommended	20+	B12	N/A
T14	Birch sp. (Betula sp.)	11	390	4	4	5	3	0	Mature	Fair	Fair	Landscape amenity planting; Bark wound - Mammal	No Work Recommended	10+	C12	N/A
G15	Birch sp. (Betula sp.); Hawthorn sp. (Crataegus sp.)	13	500#	6	6	6	6	0	Mature	Fair	Fair	Landscape amenity planting	No Work Recommended	20+	B2	N/A
T16	Ash sp. (Fraxinus sp.)	13	570	8	8	8	8	2	Mature	Fair	Fair	Landscape amenity planting; Bark wound - Major	No Work Recommended	10+	C12	N/A
G17	Leyland cypress (Cupressus x leylandii)	17	600#	5	5	5	5	0	Mature	Fair	Fair	Landscape amenity planting, possible and out grown screen. Not befitting of local area	No Work Recommended	20+	B2	N/A
T18	Birch sp. (Betula sp.)	13	1040	5	8	8	6	0	Mature	Fair	Fair	Landscape amenity planting	No Work Recommended	20+	B12	N/A
G19	Sorbus sp. (Sorbus sp.)	8	600#	4	4	4	4	0	Mature	Fair	Fair	Landscape amenity planting	No Work Recommended	20+	B2	N/A
T20	Sorbus sp. (Sorbus sp.)	6	550	3	4	3	4	0	Mature	Poor	Poor	Landscape amenity planting; Bark wound - Physical damage or vandalism; Die-back - Throughout crown	No Work Recommended	<10	U	N/A
G21	Field maple (Acer campestre); Sycamore (Acer pseudoplatanus); Hawthorn sp. (Crataegus sp.); Ash sp. (Fraxinus sp.)	8	500#	5	5	5	5	0	Mature	Fair	Fair	Possible off site group, providing screening benefit; Access to inspect base - Not possible; Access to inspect base - Restricted / obscured	No Work Recommended	20+	B2	N/A
G22	Field maple (Acer campestre); Hawthorn sp. (Crataegus sp.); Blackthorn (Prunus spinosa)	3	150#	3	3	3	3	0	Early Mature	Fair	Fair	Self-set boundary group, unmanaged, providing some screening benefit; Access to inspect base - Not possible; Access to inspect base - Restricted / obscured	No Work Recommended	10+	C2	N/A
H23	Hawthorn sp. (Crataegus sp.); Blackthorn (Prunus spinosa)	2	150#	1	1	1	1	0	Early Mature	Fair	Fair	Field boundary hedgerow; Access to inspect base - Not possible; Access to inspect base - Restricted / obscured	No Work Recommended	20+	B2	N/A
H24	Hawthorn sp. (Crataegus sp.); Blackthorn (Prunus spinosa)	2	150#	1	1	1	1	0	Early Mature	Fair	Fair	Field boundary hedgerow; Access to inspect base - Not possible; Access to inspect base - Restricted / obscured	No Work Recommended	20+	B2	N/A
H25	Hazel sp. (Corylus sp.); Hawthorn sp. (Crataegus sp.); Ash sp. (Fraxinus sp.); Blackthorn (Prunus spinosa); Elm sp. (Ulmus sp.); Viburnum sp. (Viburnum sp.)	2	150#	1	1	1	1	0	Early Mature	Fair	Fair	Field boundary hedgerow; Access to inspect base - Not possible; Access to inspect base - Restricted / obscured	No Work Recommended	20+	B2	N/A

Sequential Reference Number - T - Individual specimen; G - Group, Trees that form cohesive arboricultural features either aerodynamically, visually or culturally; H - Linear group of specimens that form a hedge or boundary; W - A larger group or area of trees that should be regarded as a single woodland unit.
Species - Common English names are used wherever possible for simplicity.
Height - An approximation of height (in metres) is provided for the highest point of the tree.
Stem Diameter - This is the measurement of stem diameter in millimetres taken in accordance with Annex C of BS5837:2012. # - estimated
Branch Spread - This is taken at four cardinal points, with a stated value in metres to enable an accurate representation of the crown
First Significant Branch - Height of first significant branch and direction of growth e.g. 2.4 N, measured from adjacent ground level.
Existing Height Above Ground Level - An approximation of height (in metres) of crown clearance above adjacent ground level.
Life Stage - There are five classes to which trees are assigned: Young; Early Mature; Mature; Over Mature; Veteran.
Physiological Condition - 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 - Additional notes are provided giving details of the tree's structural condition. This is informed by "the presence of any decay and physical defect".
Preliminary Management Recommendations - 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 - 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 - Trees have been assigned 'U' or Category Grading 'A' to 'C' in accordance with the Cascade Chart given in BS5837:2012
Tree Works Priority Codes - 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, and Priority 3: Work that should be undertaken following the completion of the development.

Sequential Reference No.	Species	Height (m)	Stem Diameter (mm)	Branch Spread (m)				Canopy Clearance (m)	Life Stage	Physiological Condition	Structural Condition	Comments / Notes	Recommendations	Estimated Remaining Contribution (Years)	Category Grading	Priority
				North	East	South	West									
T26	Ash sp. (Fraxinus sp.)	11	250#	1	1	3	4	0	Mature	Fair	Fair	Growing adjacent to telegraph pole; Access to inspect base - Not possible; Access to inspect base - Restricted / obscured; Ivy or climbing plant	No Work Recommended	10+	C12	N/A
G27	Ash sp. (Fraxinus sp.); Blackthorn (Prunus spinosa); Elder sp. (Sambucus sp.); Elm sp. (Ulmus sp.)	4	150#	2	2	2	2	0	Early Mature	Fair	Fair	Unmanaged self-set boundary group, predominantly blackthorn; Access to inspect base - Not possible; Access to inspect base - Restricted / obscured	No Work Recommended	10+	C2	N/A
T28	Ash sp. (Fraxinus sp.)	11	400#	4	6	5	4	0	Mature	Poor	Poor	Limited useful life; Access to inspect base - Not possible; Access to inspect base - Restricted / obscured; Ivy or climbing plant; Die-back - Throughout crown	No Work Recommended	<10	U	N/A
H29	Ash sp. (Fraxinus sp.); Blackthorn (Prunus spinosa)	2	150#	1	1	1	1	0	Early Mature	Fair	Fair	Field boundary hedgerow predominantly blackthorn; Access to inspect base - Not possible; Access to inspect base - Restricted / obscured	No Work Recommended	20+	B2	N/A
W30	Ash sp. (Fraxinus sp.); Blackthorn (Prunus spinosa)	7	200#	4	4	4	4	0	Mature	Fair	Fair	Offsite woodland, ; Access to inspect base - Not possible; Access to inspect base - Restricted / obscured	No Work Recommended	20+	B2	N/A
H31	Hawthorn sp. (Crataegus sp.); Blackthorn (Prunus spinosa)	3	150#	2	2	2	2	0	Mature	Fair	Fair	Field boundary hedgerow ; Access to inspect base - Not possible; Access to inspect base - Restricted / obscured	No Work Recommended	20+	B2	N/A
H32	Hawthorn sp. (Crataegus sp.); Blackthorn (Prunus spinosa)	2	150#	1	1	1	1	0	Mature	Fair	Fair	Field boundary hedgerow ; Access to inspect base - Not possible; Access to inspect base - Restricted / obscured	No Work Recommended	20+	B2	N/A
H33	Hawthorn sp. (Crataegus sp.); Blackthorn (Prunus spinosa); Bramble sp. (Rubus sp.)	1	150#	1	1	1	1	0	Mature	Fair	Fair	Field boundary hedgerow ; Access to inspect base - Not possible; Access to inspect base - Restricted / obscured	No Work Recommended	10+	C2	N/A
H34	Hawthorn sp. (Crataegus sp.); Blackthorn (Prunus spinosa); Bramble sp. (Rubus sp.)	3	150#	2	2	2	1	0	Mature	Fair	Fair	Field boundary hedgerow ; Access to inspect base - Not possible; Access to inspect base - Restricted / obscured	No Work Recommended	20+	B1	N/A

Sequential Reference Number -T - Individual specimen; G - Group, Trees that form cohesive arboricultural features either aerodynamically, visually or culturally; H - Linear group of specimens that form a hedge or boundary; W - A larger group or area of trees that should be regarded as a single woodland unit.

Species -Common English names are used wherever possible for simplicity.

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

Stem Diameter -This is the measurement of stem diameter in millimetres taken in accordance with Annex C of BS5837:2012. # - estimated

Branch Spread -This is taken at four cardinal points, with a stated value in metres to enable an accurate representation of the crown

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

Existing Height Above Ground Level -An approximation of height (in metres) of crown clearance above adjacent ground level.

Life Stage -There are five classes to which trees are assigned: Young; Early Mature; Mature; Over Mature; Veteran.

Physiological Condition -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 -Additional notes are provided giving details of the tree's structural condition. This is informed by "the presence of any decay and physical defect".

Preliminary Management Recommendations -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 -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 -Trees have been assigned 'U' or Category Grading 'A' to 'C' in accordance with the Cascade Chart given in BS5837:2012

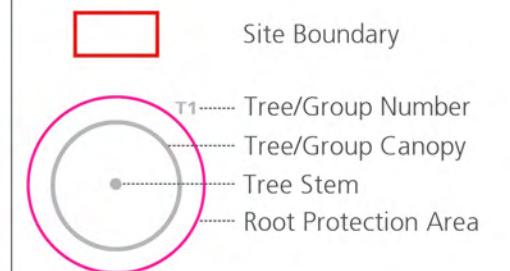
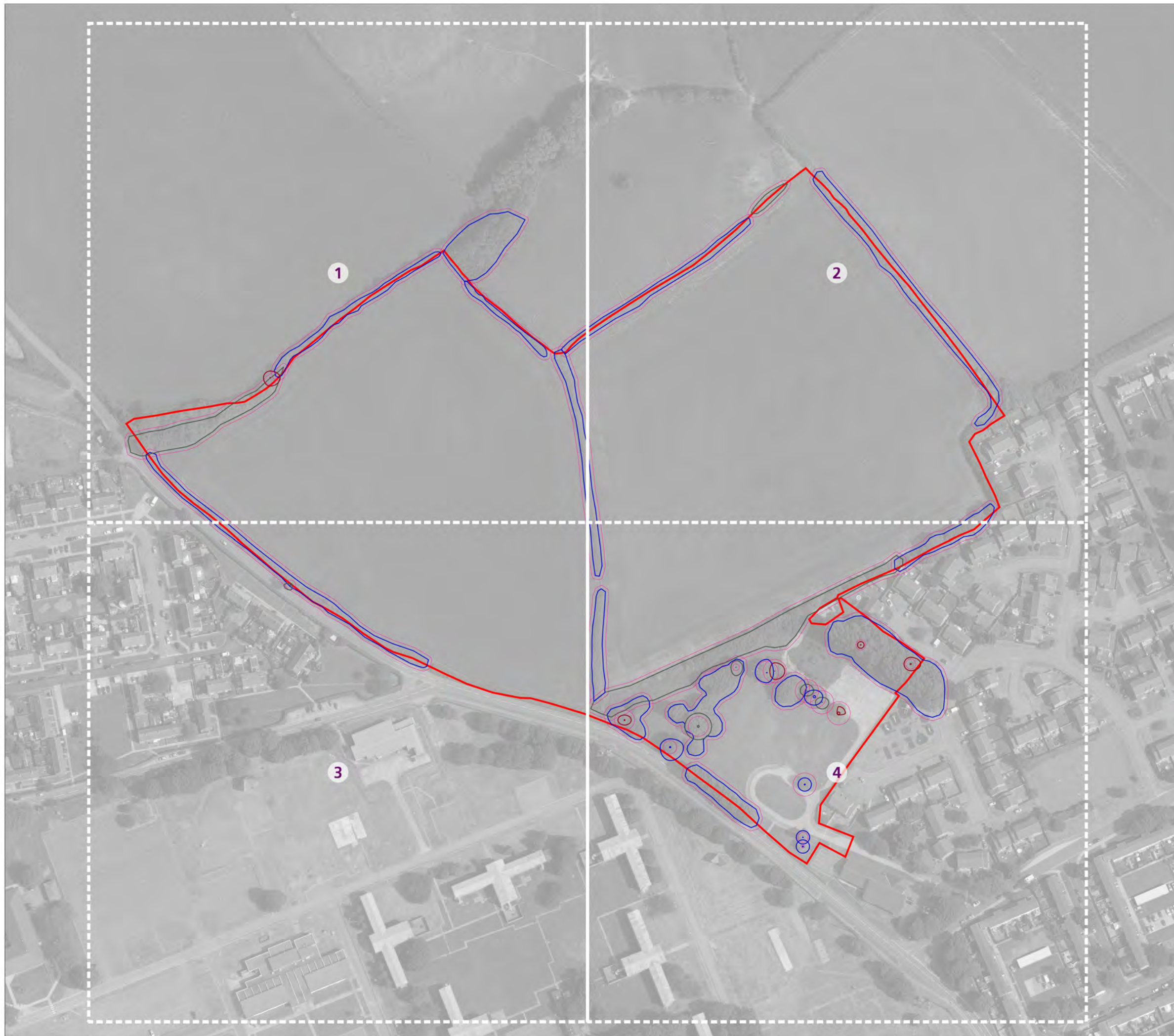
Tree Works Priority Codes -Priority codes from 1 to 3 have been given for trees requiring work. The definition of the codes used is as follows: Priority 1: Work that should be undertaken urgently due to the identification of a potential hazard, Priority 2: Work that should be undertaken prior to any works commencing on site, and Priority 3: Work that should be undertaken following the completion of the development.

Schedule EDP 2 Tree Constraints Schedule

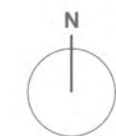
Reference No.	Cat Grading	No of stems	RPA Radius (m)	RPA Area m ²	Ultimate Height (m)	Ultimate Crown Spread (m)			
						N	E	S	W
T1	B1	1	3.7	43.5	11	5	5	5	5
T2	B1	1	4.3	58.6	6	5	5	5	5
T3	B1	1	7.2	162.9	8	5	5	5	5
T4	U	1	7.2	162.9	8	5	5	1	1
G5	B2	1	3.2	33.0	20	4	4	4	4
T6	U	1	3.4	35.5	20	5	7	5	5
T7	U	1	3.0	28.3	20	2	2	2	2
T8	C12	1	7.2	162.9	9	4	5	5	5
T9	C12	1	7.2	162.9	9	5	5	4	5
T10	B12	1	7.7	185.3	16	5	6	6	7
G11	B2	1	7.2	162.9	9	5	5	5	5
T12	U	1	7.2	162.9	16	6	7	6	4
T13	B12	1	7.2	162.9	14	10	5	7	8
T14	C12	1	4.7	68.8	14	5	5	6	4
G15	B2	1	6.0	113.1	16	7	7	7	7
T16	C12	1	6.8	147.0	16	10	10	10	10
G17	B2	1	7.2	162.9	21	6	6	6	6
T18	B12	1	12.5	489.3	16	6	10	10	7
G19	B2	1	7.2	162.9	10	5	5	5	5
T20	U	1	6.6	136.8	8	4	5	4	5
G21	B2	1	6.0	113.1	10	6	6	6	6
G22	C2	1	1.8	10.2	4	4	4	4	4
H23	B2	1	1.8	10.2	3	1	1	1	1
H24	B2	1	1.8	10.2	3	1	1	1	1
H25	B2	1	1.8	10.2	3	1	1	1	1
T26	C12	1	3.0	28.3	14	1	1	4	5
G27	C2	1	1.8	10.2	5	2	2	2	2
T28	U	1	4.8	72.4	14	5	7	6	5
H29	B2	1	1.8	10.2	3	1	1	1	1
W30	B2	1	2.4	18.1	9	5	5	5	5
H31	B2	1	1.8	10.2	4	2	2	2	2
H32	B2	1	1.8	10.2	3	1	1	1	1
H33	C2	1	1.8	10.2	1	1	1	1	1
H34	B1	1	1.8	10.2	4	2	2	2	1

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- Category A: Trees of high quality and value
- Category B: Trees of moderate quality and value
- Category C: Trees of low quality and value
- Category U: Trees of poor quality and value



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client

Edenstone Homes

project title


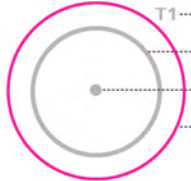




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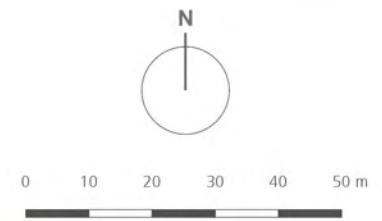
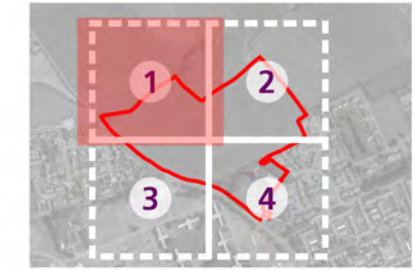
drawing title

**Plan EDP 1: Tree Constraints Plan
 Overview**

date	30 AUGUST 2016	drawn by	JTF
drawing number	EDP3504/01	checked	LT
scale	1:2,250 at A3	QA	TB



-  Site Boundary
- 
 - T1 Tree/Group Number
 - Tree/Group Canopy
 - Tree Stem
 - Root Protection Area
-  Category A: Trees of high quality and value
-  Category B: Trees of moderate quality and value
-  Category C: Trees of low quality and value
-  Category U: Trees of poor quality and value



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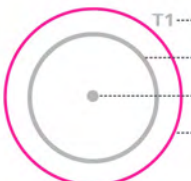




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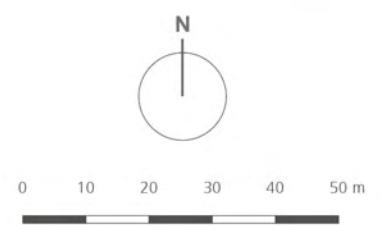
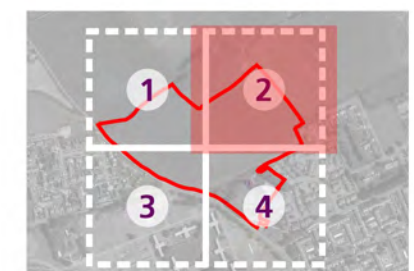
project title
**Land off Cowbridge Road, St Athan,
 Vale of Glamorgan**

drawing title
**Plan EDP 1: Tree Constraints Plan
 (Sheet 1 of 4)**

date	30 AUGUST 2016	drawn by	JTF
drawing number	EDP3504/01	checked	LT
scale	1:1,200 at A3	QA	TB



-  Site Boundary
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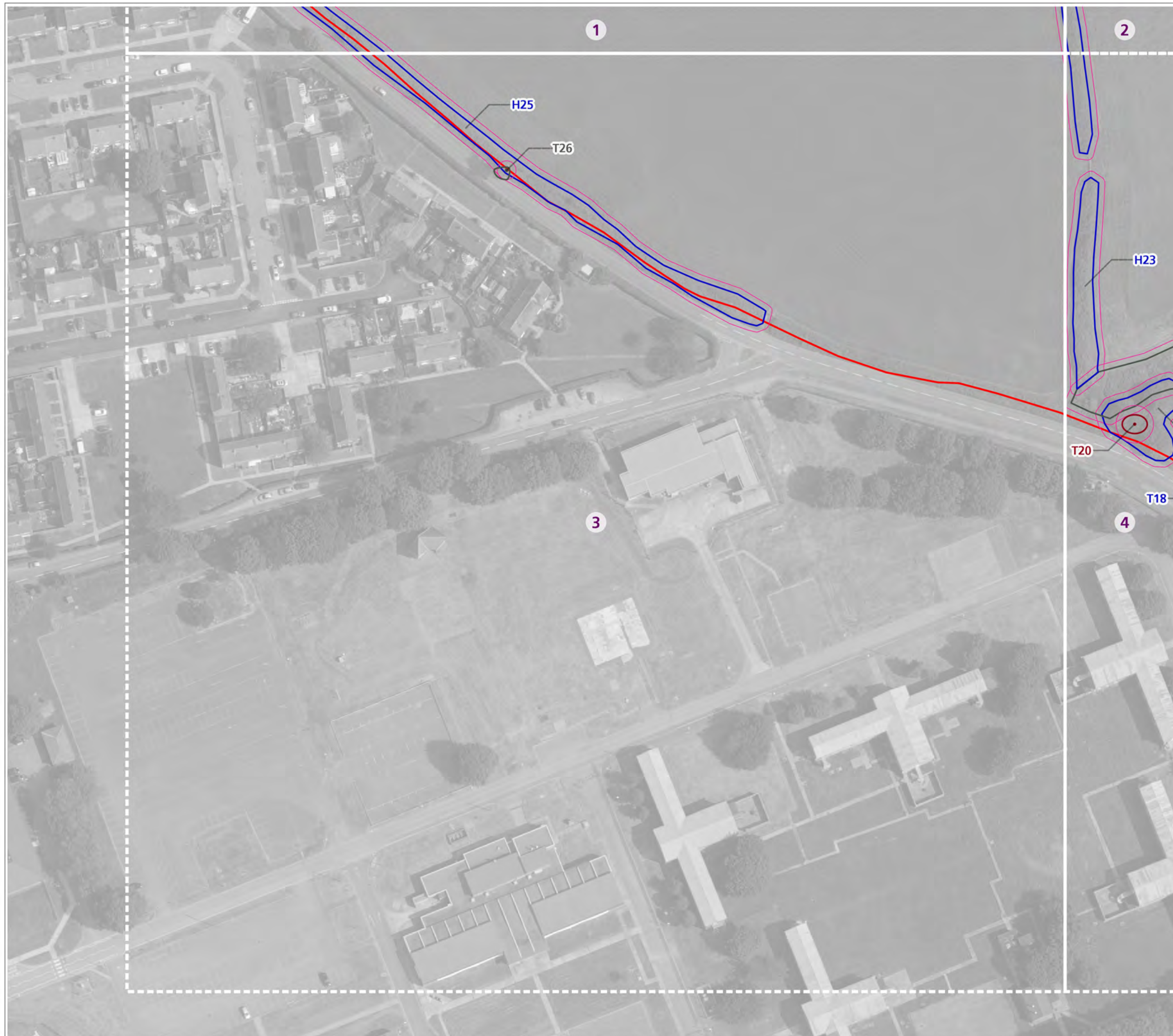
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**Land off Cowbridge Road, St Athan,
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**Plan EDP 1: Tree Constraints Plan
 (Sheet 2 of 4)**

date	30 AUGUST 2016	drawn by	JTF
drawing number	EDP3504/01	checked	LT
scale	1:1,200 at A3	QA	TB



Site Boundary

Tree/Group Number
Tree/Group Canopy
Tree Stem
Root Protection Area

Category A: Trees of high quality and value

Category B: Trees of moderate quality and value

Category C: Trees of low quality and value

Category U: Trees of poor quality and value

N

0 10 20 30 40 50 m

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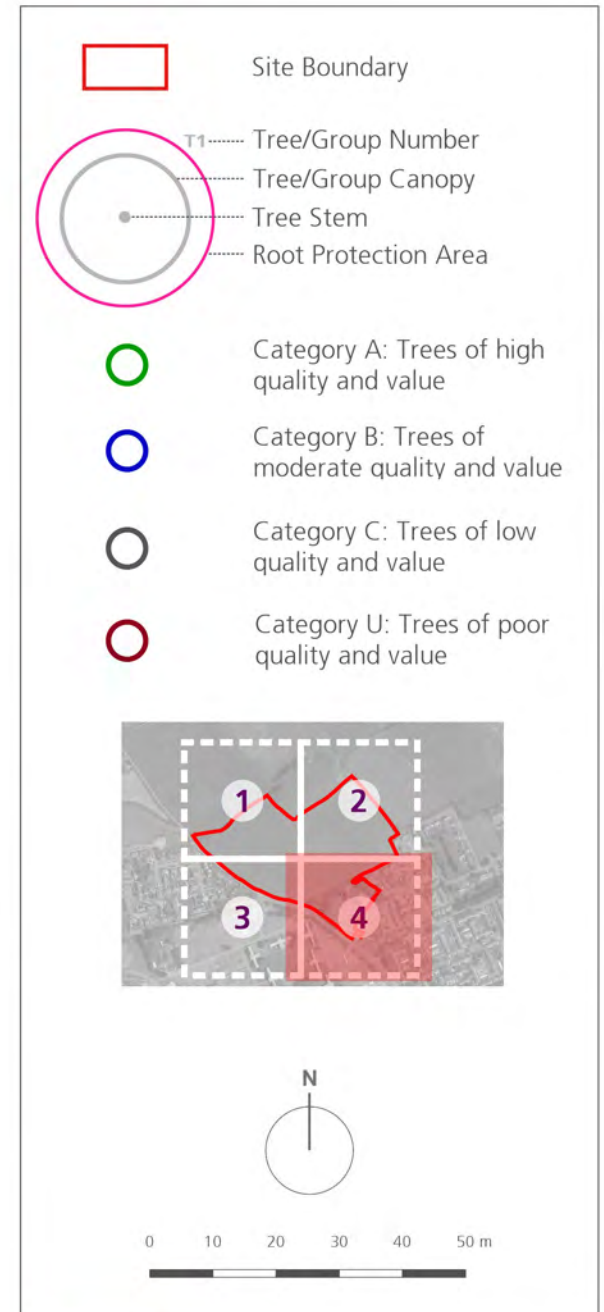
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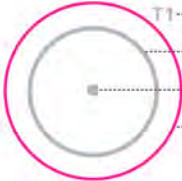






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**Plan EDP 1: Tree Constraints Plan
 (Sheet 3 of 4)**

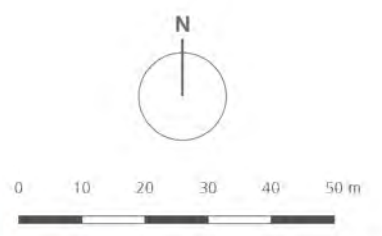
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drawing number	EDP3504/01	checked	LT
scale	1:1,200 at A3	QA	TB



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client	Edenstone Homes		
project title	Land off Cowbridge Road, St Athan, Vale of Glamorgan		
drawing title	Plan EDP 1: Tree Constraints Plan (Sheet 4 of 4)		
date	30 AUGUST 2016	drawn by	JTF
drawing number	EDP3504/01	checked	LT
scale	1:1,200 at A3	QA	TB



-  Site Boundary
-  Tree/Group Number
Tree/Group Canopy
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Root Protection Area
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-  Category U: Trees of poor quality and value
-  Trees to be Removed
-  Protective Fencing in accordance with BS 5837:2012



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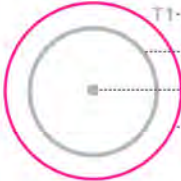






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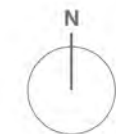
project title
Land off Cowbridge Road, St Athan, Vale of Glamorgan

drawing title
Plan EDP 2: Tree Protection Plan (Sheet 1 of 4)

date	24 NOVEMBER 2016	drawn by	TC
drawing number	EDP3504/10a	checked	LJ
scale	1:1,200 at A3	QA	iff



-  Site Boundary
-  Tree/Group Number
Tree/Group Canopy
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0 10 20 30 40 50 m



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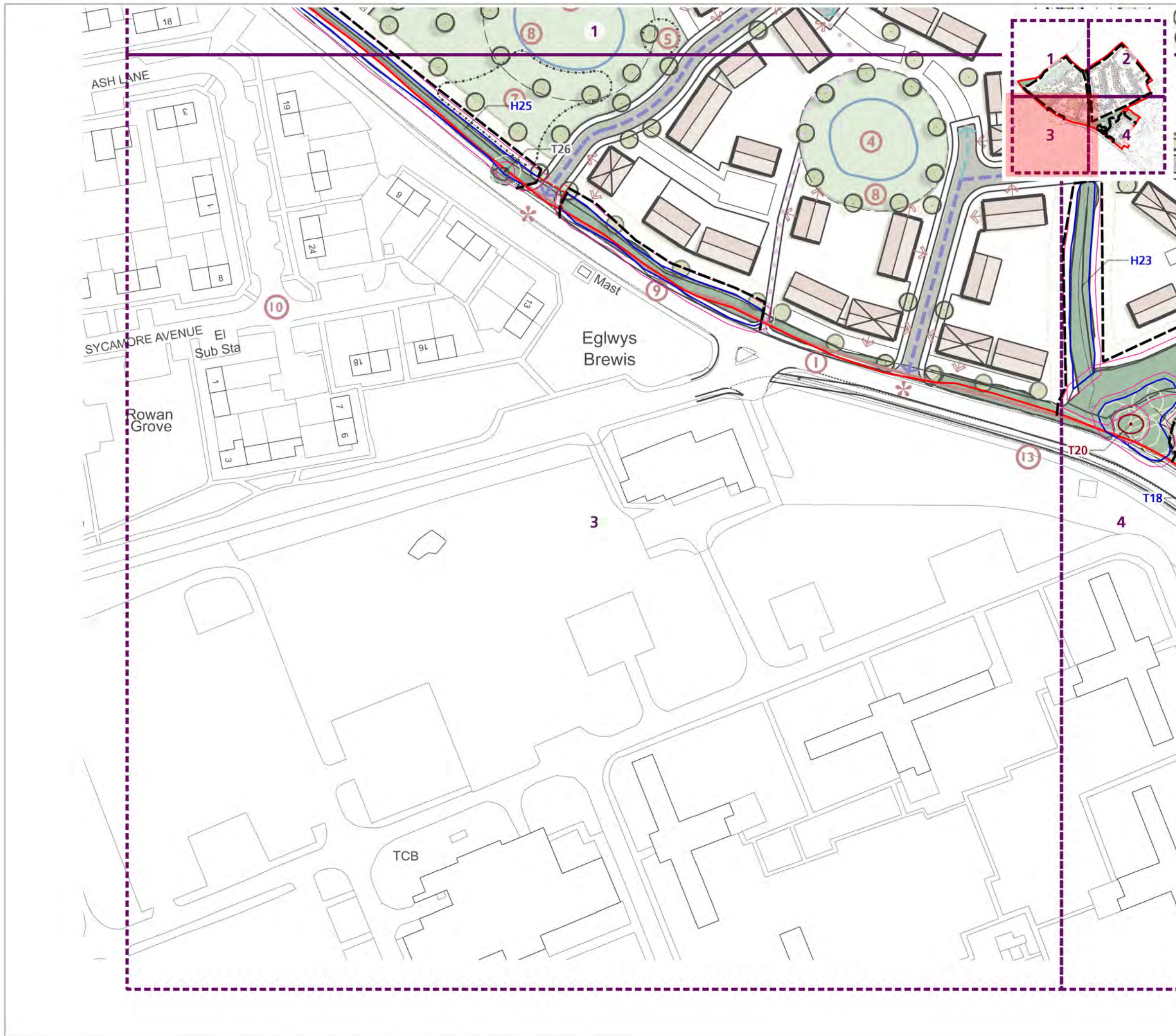
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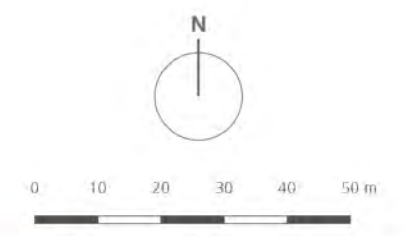
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**Plan EDP 2: Tree Protection Plan
 (Sheet 2 of 4)**

date	24 NOVEMBER 2016	drawn by	TC
drawing number	EDP3504/10a	checked	LJ
scale	1:1,200 at A3	QA	iff



- Site Boundary
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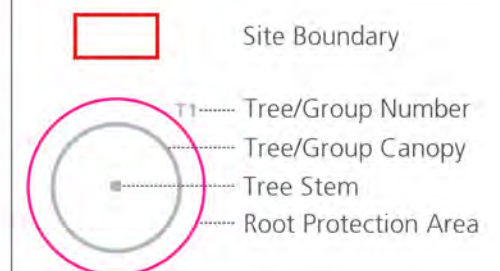
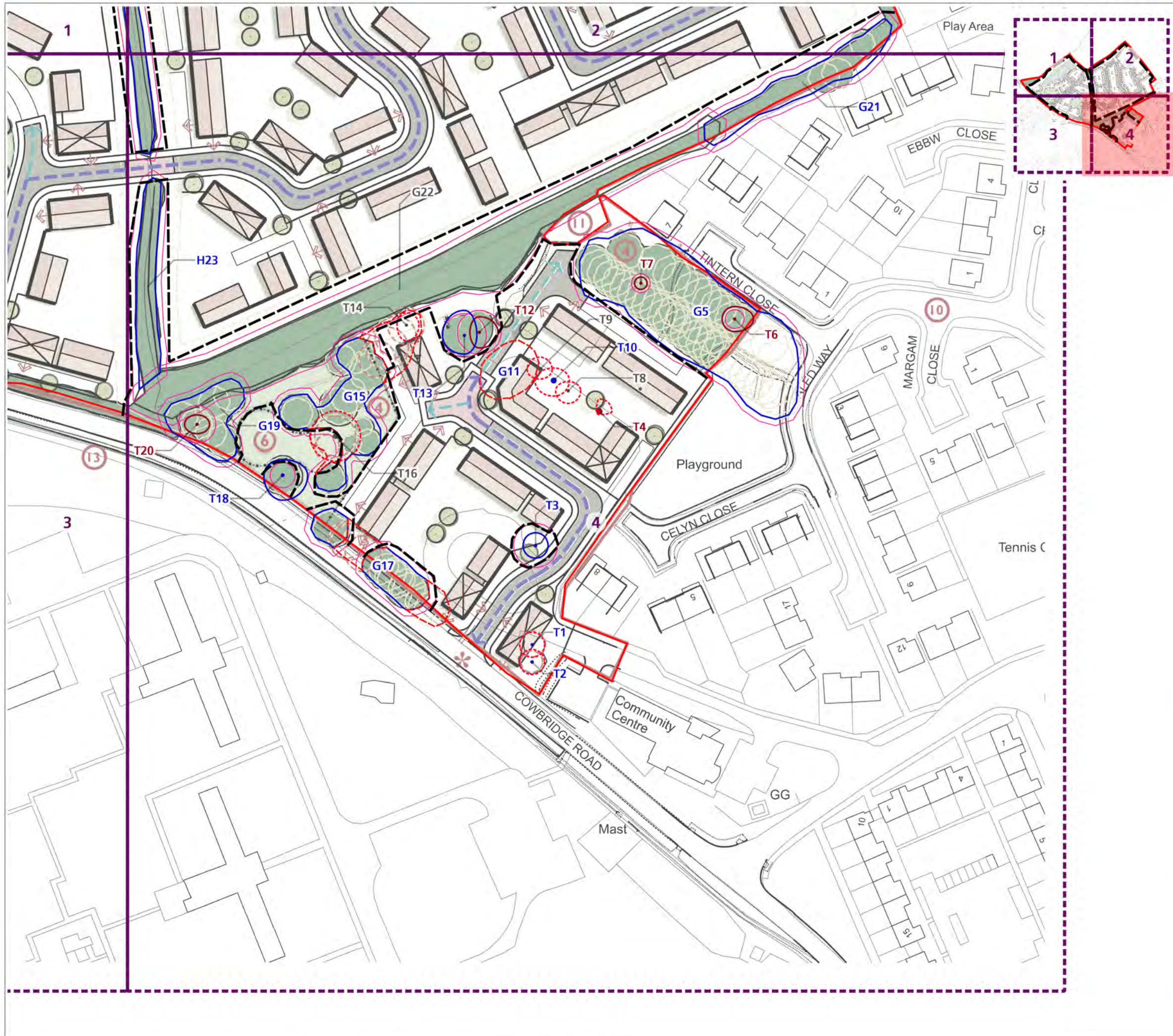
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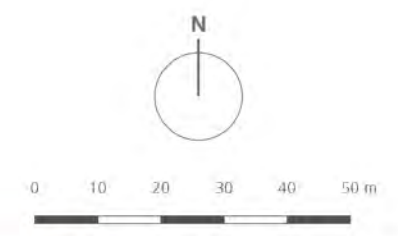
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**Plan EDP 2: Tree Protection Plan
 (Sheet 3 of 4)**

date	24 NOVEMBER 2016	drawn by	TC
drawing number	EDP3504/T03	checked	LT
scale	1:1,200 at A3	QA	TF



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**Plan EDP 2: Tree Protection Plan
 (Sheet 4 of 4)**

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