



Arboricultural Report

**Milking Parlour, Slurry Lagoon & Silage Area
Merehead
Hanmer
Whitchurch
SY13 3EJ**

Commissioned by:

Tom Hanmer
Merehead

Surveyed and reported on by:

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Survey date:

29th August 2019

Report date:

29th August 2019

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1.0 Summary

- 1.1 *It is proposed to build a milking parlour, slurry lagoon and silage storage area in an agricultural field at Merehead.*
- 1.2 *There are five category B and six category C trees on or adjacent to the site. One category B and one category C tree will need to be removed for the development to take place.*
- 1.3 *Small encroachments into the RPA of five trees will be compensated for by covering the rest of their RPAs with woodchip to aid root health and resource uptake.*
- 1.4 *Public amenity value provided by the trees will not be affected. Two new trees are to be planted to make up for the losses.*
- 1.5 *All retained trees will be effectively protected during development using standard tree protection measures.*
- 1.6 *The proposal is arboriculturally sound.*

2.0 Instructions

- 2.1 I am instructed by Tom Hanmer of Merehead to carry out a tree survey and produce a tree report to support a planning application at the site.
- 2.2 The proposal is to build a milking parlour, slurry lagoon and silage area on agricultural fields.
- 2.3 The site has a number of trees within it and on its boundary. These trees are to be evaluated to consider their value and whether they need to be retained. Consideration is to be made to ensure retained trees are not significantly damaged and add to the value of the site.
- 2.4 I am to produce a tree report to support the planning application.
- 2.5 The report is to be compliant with BS5837:2012 Trees in relation to design, demolition and construction: Recommendations.

3.0 Preliminary Matters

- 3.1 The survey and report cover only arboricultural matters relating to trees that will be affected by the proposal.
- 3.2 The report deals with identifying the benefits and constraints trees will impose on the development site, if trees will need to be removed to allow construction, how remaining specimens can be protected and how retained trees will affect the site.
- 3.3 Statutory protection of trees, either tree preservation orders, conservation area status or historical planning conditions have not been investigated.
- 3.4 Documents supplied to myself:
 - i) Proposed site block plan supplied by P&L Agri Consulting Ltd.Documents produced by myself to accompany this report:
 - i) Tree Constraints Plan PC19/333/TCP
 - ii) Tree Protection Plan PC19/333/TPP
- 3.5 Any engineering solutions referred to are done so on the understanding that specifications will be required from a suitably qualified professional. Reference is made to them purely to show an end result is possible using the method prescribed.

- 3.6 Where buildings are constructed close to trees, reference should be made to the National House-Builders Council Standards Plus 2018 chapter 4.2. www.nhbc.co.uk This document gives appropriate foundation depths for buildings close to trees. It is recommended that the soil's modified plasticity index is investigated to consider the likelihood of soil movement with moisture change. This may have an influence on the required foundation depth.
- 3.7 The data, views and opinions of this report relate to the survey undertaken on the date shown and does not take into account the effects of extreme weather conditions, vandalism or accidental damage. Neither can the effects of poorly executed tree surgery work, not complying to current good practice, be predicted. Old Oak Tree Care cannot accept liability in connection with these factors. This report requires renewal in two years from the date of survey, or as soon as site conditions, tree health or tree structural conditions alter significantly.

4.0 Method of Survey

- 4.1 The survey was undertaken on 29th August 2019.
- 4.2 Trees were surveyed to measure height, trunk diameter, crown spread and height, health, structural condition, estimated remaining life and overall quality.
- 4.3 Information was gathered to comply with section 4.4.2 of BS5837:2012.
- 4.4 Stem diameters were measured using a surveyors tape. Crown spreads and heights were estimated using a laser rangefinder. Heights were estimated using the height function of a laser rangefinder.

5.0 Site Details

- 5.1 The site is a large rural field used for grazing.
- 5.2 To the north and west is an area of mature woodland with some trees overhanging the site. To the north, an access track leads into the field. The field continues to the south and east for some distance. The track continues to the south.
- 5.3 The site has no footpaths or bridleways running through it. No viewpoint of the site can be publicly gained.
- 5.4 There are eleven large trees within the site, or on its boundary.

- 5.5 The profile of the site slopes in an undulating manner from north-east to south-west.
- 5.6 Viewing the Cranfield Soil and Agrifood Institute's Soils map www.landis.org.uk it appears that the soil is a slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soil. Soil of this kind provides a good medium for tree growth. The modified plasticity index of the soil is not known.

6.0 Extract Tree Schedule

- 6.1 All tree data is supplied in Appendix E. Table 1 and 2, below, gives a summary of information.
- 6.2 Table 1 gives a brief description and breakdown of tree categories for single trees, groups and hedges.

Category	Description of category	Number
A	High quality with an estimated remaining life span of at least 40 years. Particularly good examples of their species, especially if rare or unusual. They will be visually important and may have significant conservation or historical values.	0
B	Moderate quality and expected to remain between 20 to 40 years. Might have been included as a category A, but downgraded by impaired conditions. Possibly lacking special qualities to be regarded as Category A. Group which collectively increases its value from C to B or a particularly effective screen.	5
C	Low quality with an expected lifespan of 10 to 20 years or below 150mm in diameter. Unremarkable trees, either young, impaired or poor species. Unlikely to increase in quality as time goes by. No conservation or cultural value.	6
U	Those in such a condition that they cannot be realistically retained as living trees for longer than 10 years. Serious structural or physiological problems. Also dead trees.	0
Group	Trees of similar species, size or character which are grouped together. The number of the group is given together with the categorisation.	0
Hedge	Groups of trees planted in lines as a hedge. Trees originally planted as a hedge but have not been managed in some time, reverting back to a line of trees. The number of the hedge is given together with its categorisation.	0

Table 1: Number of categorised trees, groups and hedges. A brief description of categorisation together with colour coding. Appendix E gives full detail.

- 6.3 A brief description of trees and features are given in table 2. A key to the table is found below it.

No.	Species	Stem Dia.	Cat.	Comment
Sy1	Sycamore	450	C	Suppressed by Sp11. Tree in woodland
Sy2	Sycamore	300	C	In woodland
Sy3	Sycamore	425	C	In woodland
Ok4	Oak	400	C	In woodland
Sy5	Sycamore	400	C	In woodland
Sy6	Sycamore	700	B	In woodland
Sp7	Spruce	800	C	In woodland
ScP8	Scots Pine	675	B	
Ok9	Oak	1050	B	dysfunctional core. Sig decay in southern branch
Ok10	Oak	900	B	
Sp11	Spruce	575	B	In woodland

Table 2: Extract Tree Schedule (Key below)

No: Tree identifier using the letter to indicate species and a sequential number. G indicates a group, H indicates a hedge

Species: Tree species using the common name

Stem Dia: Stem diameter measured at 1.5 metres from the ground in millimetres

Cat: Category in relation to BS5837:2012. See 5.2 or Appendix C for details on categorisation. Note: Numbers for sub-categorisation are not used.

Comments: Comments, if necessary. 0 if none.

7.0 Arboricultural Impact Assessment

- 7.1 The site has no public access or is viewable from publicly accessed land. This indicates that issues relating to tree amenity are mainly irrelevant.
- 7.2 The broader look of the countryside and trees within them are of some importance. Its appearance is that of a classical grazing field. The owners of the land have sought to maintain it in its current form for the recent past. Individual tree planting has occurred within the field in recent years.
- 7.3 The large oak Ok10 will need to be removed to allow the silage storage area to be built. Sufficient room is not available to be able to retain the tree within the proposal without causing significant pressures upon its rooting area.
- 7.4 Removal of Ok10, a category B tree requires significant mitigation work to balance its loss with measures to increase tree presence and health. The owners of the site have made efforts to plant trees and this should be continued. An oak and a scots pine should be planted to replace this lost tree.

- 7.5 A separate ecology report deals with the wildlife value of this tree. Its benefit to the local natural environment could be maintained over the next 20 to 30 years by placing the trunk in a quiet part of the field where it will not be disturbed to allow natural colonisation and habitat for local indigenous species.
- 7.6 Sy1 is a category C sycamore which has grown underneath the canopy of Sp11, a larger category B spruce. The crown of Sy1 has spread from underneath Sp11 to the south above the field. A number of branches would have to be removed from Sy1 to allow HGVs to service the milking parlour. However, these would soon grow back as this would be the preferred direction of growth. Removal of Sy1 would be the preferred option as this would prevent any branches from catching on vehicles. Exposing the larger spruce behind would also provide better aesthetics to the area.
- 7.7 Small amounts of the root protection area (RPA) of Sp11, Sy2, Sy3 and Sp7 will be covered by groundworks to create access to the milking parlour and battering around the lagoon. The coverage of RPAs will vary from a 2% coverage to a 14% coverage. This is not expected to cause considerable harm to the trees as all rooting areas outside of the field will be untouched allowing resources to be gained from other directions.
- 7.8 To ensure additional health benefits are supplied to the trees, where parts of their RPA are covered, a woodchip mulch is to be placed on the RPA within the site which is not covered. This will add significant health benefits to the trees by reducing water loss from the soil, aiding good soil flora and fauna, preventing weeds from competing with the tree and providing it with additional nutrients.
- 7.9 Woodchip for mulching operations can be made by chipping smaller branches of Sy1 and Ok10 when they are felled. It would be beneficial to pile chippings in a large pile and allow it to compost for 2 to 3 months until the heat has gone out of it. The woodchip is to be spread no more than 100mm deep.
- 7.10 Ok9 is the largest tree on site, in the most prominent position. It appears to have a dysfunctional core, like many large oaks, but this does not appear to impact on its health. The lowest branch to the south has a lot of historic decay within it and is likely to fail in the near future. This branch should be carefully removed in as large a piece as practically possible and left at the base of the tree to provide essential habitat.
- 7.11 To aid tree health for this large and important tree, a woodchip mulch should be spread over its RPA which is not covered by the track. A very small part of the RPA will be unprotected on the other side of the track from it, but this will be also compensated for by use of the woodchip.
- 7.12 The track over the RPA is not to be altered or dug up and replaced. This will ensure roots below it are not affected by traffic over it.

7.13 Public amenity provided by trees to the area will be unchanged.

8.0 Tree Protection

- 8.1 Appendix A and B show the crown spread and root protection area (RPA) of each tree. The area covered by these items require careful consideration within the design and construction process as damage to the tree within these areas will be very harmful to it. These zones are primarily set aside for the tree.
- 8.2 RPAs do not show the total extent of the tree's roots. The RPA is likely to be just one-third of the tree's total root system. This design tool recommends an area of 12 times the diameter of the tree's trunk, or mathematical equivalent for multi-stemmed trees, to be set aside for the tree and protected. This will ensure that a core area of rooting can be protected from damage allowing the tree to be retained without significant damage or reduction in longevity.
- 8.3 It is recommended that RPAs are initially drawn as a circle around the tree. However, the presence of poor rooting areas such as under housing, roads, significant walls, water courses, historical damage or buried obstructions will alter this. In this case, the RPAs of all trees have been plotted as circles. Ok9's RPA will have been affected slightly by the track passing over it, but because the traffic is infrequent and the porosity of the track, sufficient, roots are likely to be found below the track.
- 8.4 The tree protection plan, Appendix B, shows how a protective fence, the design following that shown in BS5837:2012 Figures 2 and 3, Appendix D, will protect trees on the site. The fence is to be installed before any work begins on site including plant or material deliveries. It is to remain in place throughout construction and only be removed after all construction has finished. The fence could be linked to the security fence which will surround the site.
- 8.5 Protected RPAs are to be kept clear of refuse, materials, fuels and chemicals. These items should also be prevented from leaking into the RPAs. Protective fencing is to be robust and unbreachable, unless with the use of tools. Fencing should be attached to edges, or itself, to prevent it being circumvented. Should fencing be damaged it should be repaired immediately.
- 8.6 Underground services are not to enter RPAs. Should a service run be required within an RPA then a site-specific method statement is to be produced to show how this will not cause damage to the tree. The National Joint Utility Group guidance in Volume 4 gives essential guidance for installing utilities in proximity to trees (NJUG4).

9.0 Conclusion

- 9.1 The proposal is to build a milking parlour, slurry lagoon and silage area on part of an agricultural field.
- 9.2 There are five category B trees and six category C trees which will be near the development.
- 9.3 Ok10, a category B and Sy1, a category C tree will need to be removed to allow the proposal to take place. A decayed branch will need to be removed from Ok9.
- 9.4 The RPAs of Sy2, Sy3, Sp7 and Sp11 will have some soil battering placed upon them. This amount is small, never over 14% of the total RPA, and these trees will have a woodchip mulch placed on their remaining RPA in the field to add additional health benefits to the trees. Ok9 will have a small part of its RPA unprotected just beyond the track. The rest of the trees RPA will be covered in a woodchip mulch to aid its health. Significant damage to any tree is not expected.
- 9.5 There are no public views to the development, public amenity will be unaffected.
- 9.6 Two trees are to be planted and protected from livestock to the south of the silage storage area.
- 9.7 All retained trees can be effectively protected using standard tree protection measures. It is essential these measures are correctly put in place before any construction activities or deliveries are made. Fencing is to be robust, unmoveable and unbreachable without the use of tools.
- 9.8 The proposal is arboriculturally sound and complies with British Standard 5837:2012 Trees in relation to design, demolition and construction: Recommendations.



Appendix A

Land at Merehead, Hanmer, Whitchurch

Tree Constraints Plan with proposal shown
Showing all trees, crown dimensions, tree
categories and root protection areas (RPAs)

SCALE :
1 : 500

@ A3

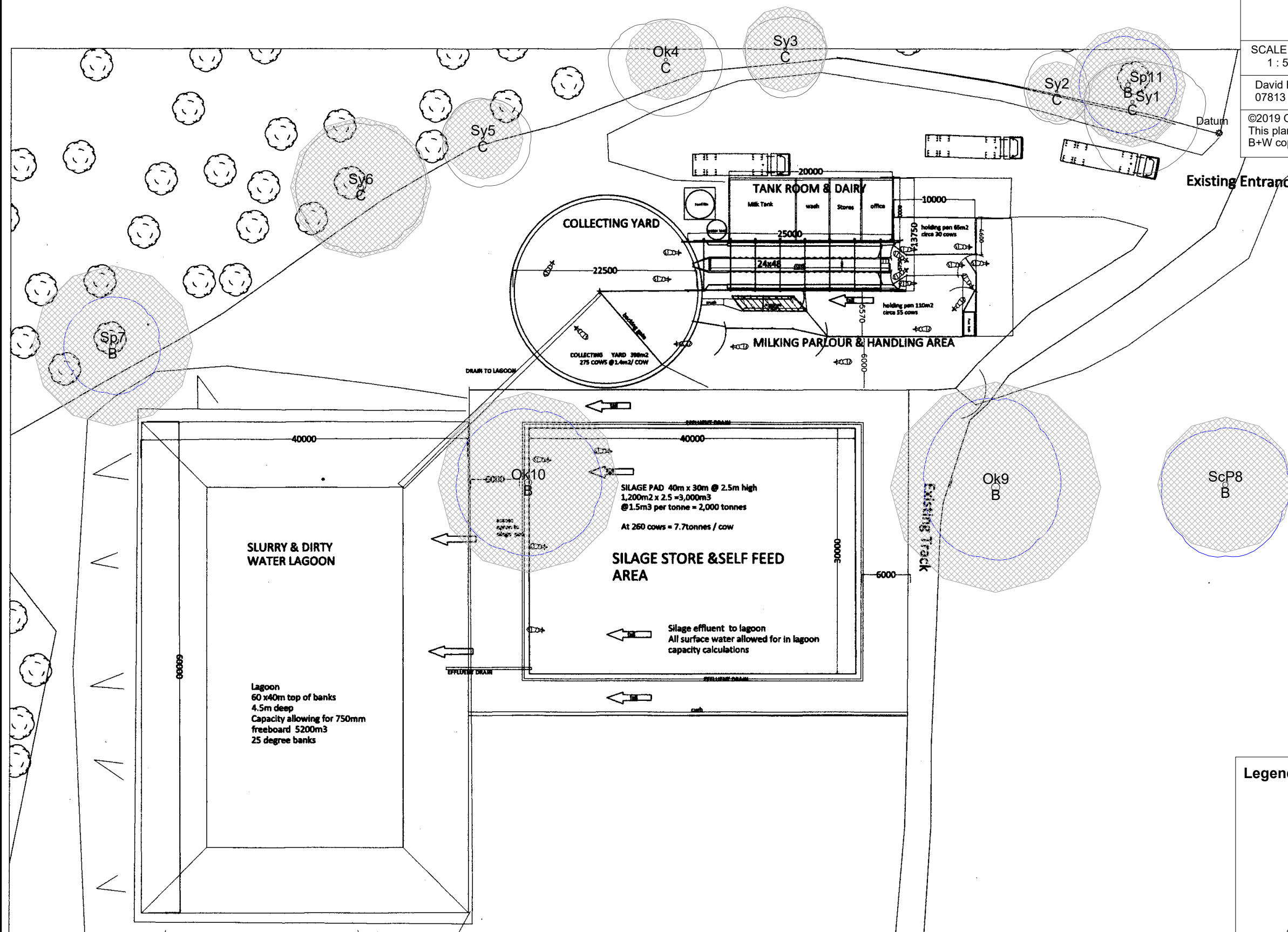
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01/09/2019



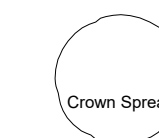
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Map reference:
PC19/333/TCP



Legend



Crown Spread



Root Protection Area



Category 'A'



Category 'B'



Category 'C'



Category 'U'

0

40m

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Milking Parlour, Slurry Lagoon
& Silage Area
Drawing 4
6/9/2019
Scale 1:200 e1

FLOORPLAN
Mr T. Hare
Merehead
Hanmer
Whitchurch
SY13 3AU



Appendix B

Land at Merehead, Hanmer, Whitchurch

Tree Protection Plan
Showing all retained trees, crown dimensions, tree categories, RPAs, fencing and woodchip provision

SCALE :
1 : 500 @ A3

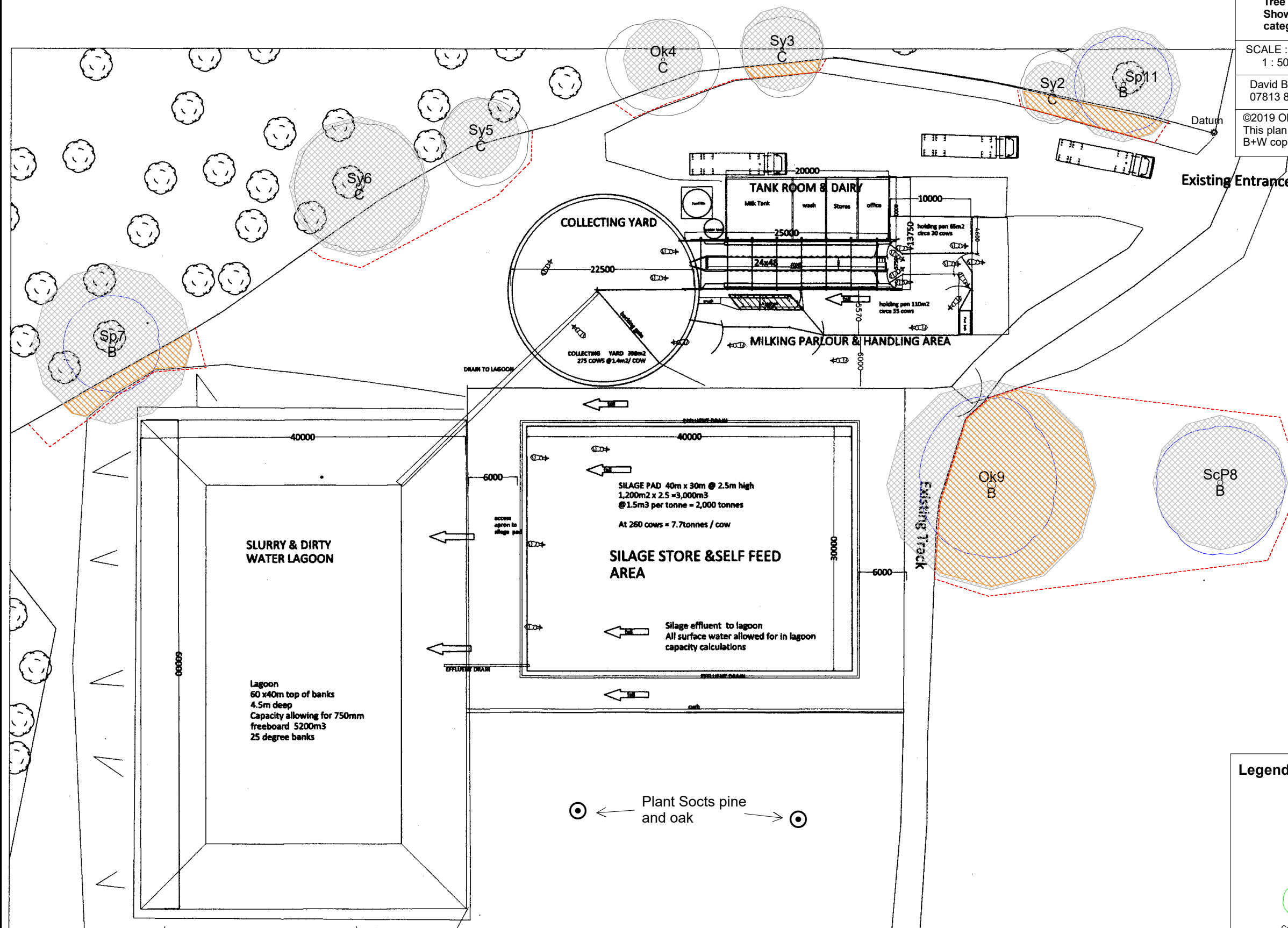
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01/09/2019



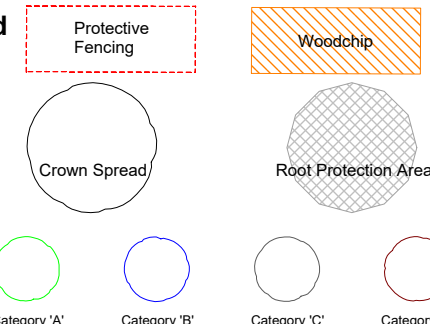
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Map reference:
PC19/333/TPP



Legend



0 40m

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Site: Merehead Farm, Shropshire
P&L AgriConsulting Ltd
Farm: Merehead Farm
Location: Shropshire, SY13 3JH
Drawn: 01/09/2019
Scale: 1:200 e1

FLOORPLAN
Mr T. H. H. H.
Merehead Farm
Whitchurch, Shropshire
SY13 3JH

Table 1 Cascade chart for tree quality assessment

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	- 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 <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see 4.5.7.</i>	See Table 2
Trees to be considered for retention		
1 Mainly arboricultural qualities 2 Mainly landscape qualities 3 Mainly cultural values, including conservation		
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 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 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 with no material conservation or other cultural value

Figure 2 Default specification for protective barrier

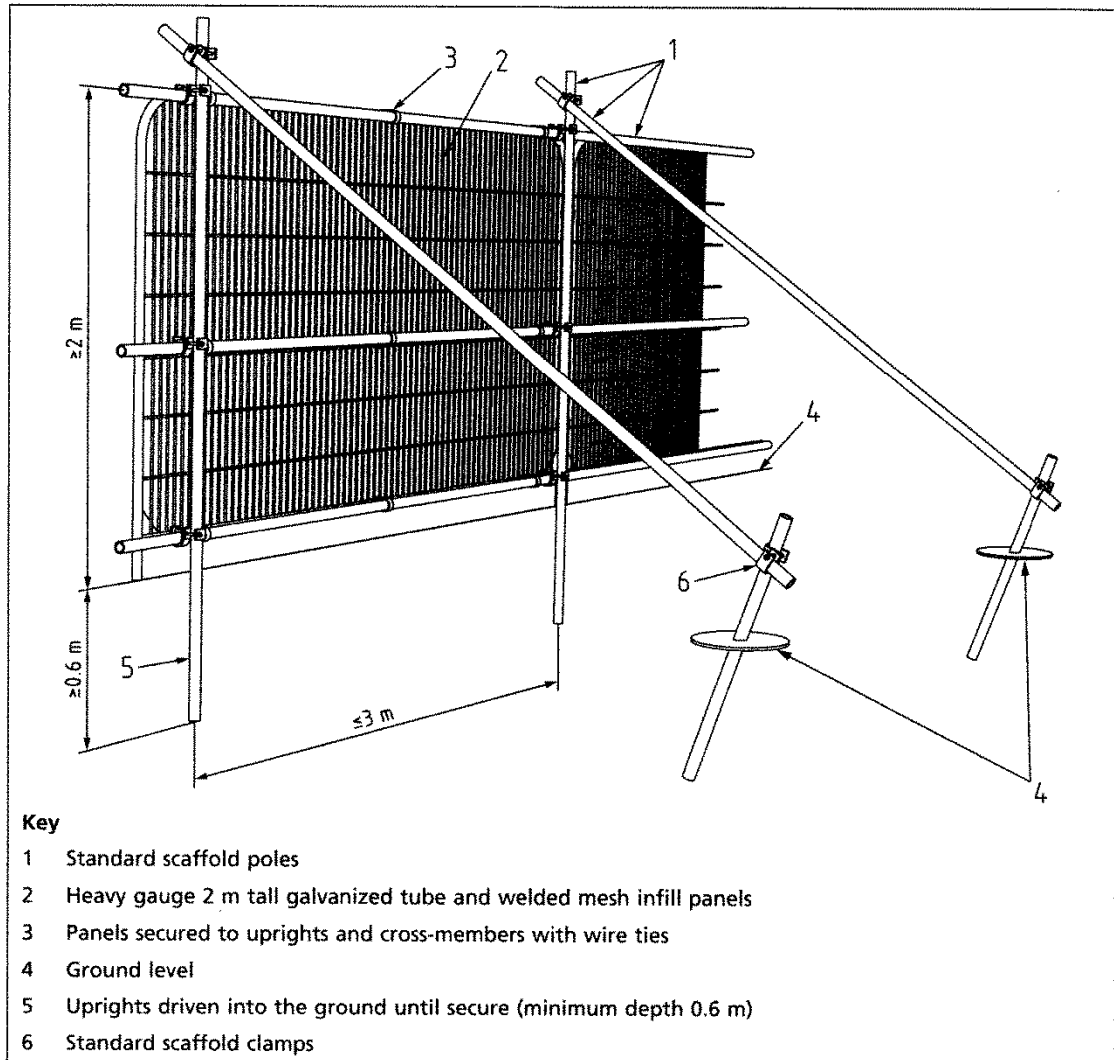
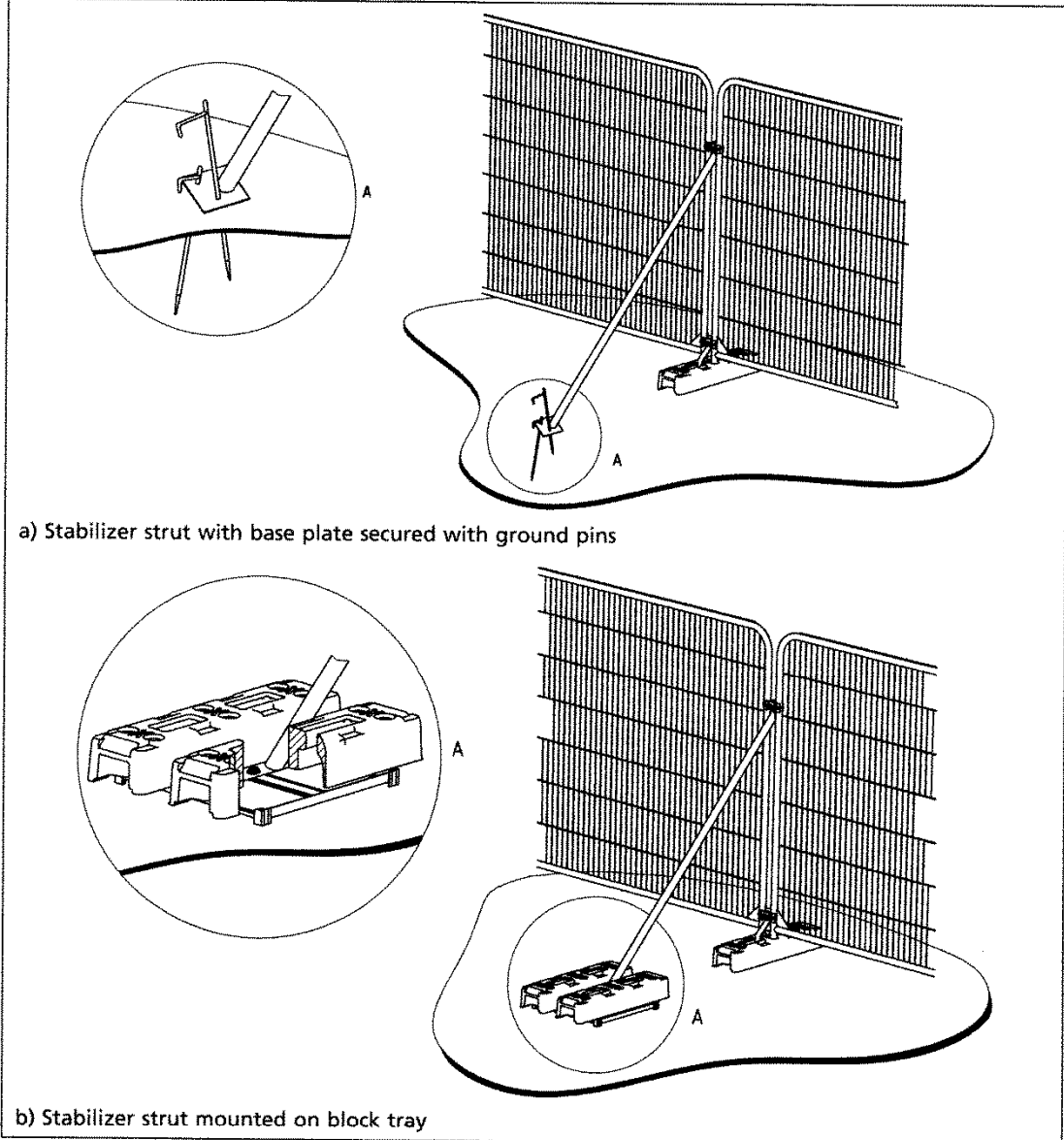


Figure 3 Examples of above-ground stabilizing systems



Appendix E Tree Schedule - Key

Where measurements are estimated due to lack of access or vegetation, a * denotes this.

Tree Number -	Identification for specific tree. Using a couple of letters to help with species identification together with a number. Groups or hedges will be identified as Gr.
Species-	Tree species, using common name.
Height-	Taken using angular triangulation function of a laser rangefinder.
Diameter-	Taken by measuring circumference with a tape measure and applying Pi equation or by measuring circumference by eye if entire circumference is not accessible (in this case denoted by *).
Crown spread-	Radius of crown at four cardinal points, north, east, south and west measured by laser rangefinder. (Estimates denoted with a *).
Crown height-	Height of lowest branch at each cardinal point. Measured by laser rangefinder. (Estimates denoted with a *).
Age bracket-	Estimated life stage of tree ranging from young, mid-aged, early-mature, mature and over-mature.
Physiological condition-	Assessment of health and vitality of the tree. Good, fair, poor or dead. Fair or poor will have more details attached.
Structural condition-	Assessment of physical structure of tree. Good, fair, poor or dead. Fair or poor will have more details attached.
Years remaining-	Estimate of likely useful life of tree taking into account age, species, character, situation and likely management requirements.
Quality assessment-	Subjective assessment. Either A- very good, B-good, C-reasonable or U- unsuitable for retention. See appendix C for more details.
RPA radius-	Positioning of root protection area (RPA) measured from centre of the tree to the radius. This is for circular RPAs. Where RPAs have been adjusted for site conditions and are no longer circular this value will not be correct. (Non-circular RPA will be denoted with a *).
RPA area-	Area of RPA irrespective of its shape.
Notes:	Any notable comments on group make up, physiological, structural condition or notable features.

Appendix E		Tree Schedule																	
Tree number	Species	Height (m)	Diameter (mm)	N Crown spread (m)	E	S	W	N Crown Height (m)	E	S	W	Age bracket	Physiological Condition	Structural Condition	Years remaining	Quality assessment	RPA radius(m)	RPA Area (m2)	Notes
Sy1	Sycamore	15	450	5	9	9	6	4	2	3	4	mature	good	good	20 to 40	C	5.4	92	Suppressed by Sp11
Sy2	Sycamore	12	300	5	4	4	4	3	3	3	3	early-mature	good	good	20 to 40	C	3.6	41	
Sy3	Sycamore	19	425	4	5	6	5	8	3	2	3	mature	good	good	20 to 40	C	5.1	82	
Ok4	Oak	15	400	5	7	7	7	5	2	2	2	early-mature	good	good	>40	C	4.8	73	
Sy5	Sycmore	18	400	5	6	6	5	5	2	2	5	mature	good	good	20 to 40	C	4.8	73	
Sy6	Sycamore	20	700	8	8	8	8	5	5	3	3	mature	good	good	20 to 40	B	8.4	222	
Sp7	Spruce	22	800	6	6	6	6	2	2	2	2	mature	good	good	20 to 40	C	9.6	290	
ScP8	Scots Pine	18	675	7	8	9	8	2	2	2	2	mature	good	good	20 to 40	B	8.1	206	
Ok9	Oak	19	1050	11	8	9	9	3	3	3	3	mature	good	good	>40	B	12.6	500	dysfunctional core. Sig decay in southern branch
Ok10	Oak	17	900	9	9	9	9	3	3	3	3	mature	good	good	>40	B	10.8	367	
Sp11	Spruce	20	575	6	6	6	6	8	8	8	8	mature	good	good	20 to 40	B	6.9	150	