Arboricultural Report

BS. 5837/2012.

Trees in relation to design, demolition and construction-

Recommendations

Miller Field Project

Miller Road

Brymbo

LL11 5FH

Report Prepared By:

M J Boardman BSc (Hons) MSc MICFor

Sherratts Group

Pinfold Lane

Alltami

Mold

CH7 6NZ

T: 01352 780580

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TREE REPORT

1.0 Introduction:

1.1 Sherratts Group have been instructed by Mr Gareth Venn of Brymbo Heritage Trust to attend site at Miller Field, Brymbo, LL11 5FH and carry out a survey of all trees and vegetation that may be affected by the proposed siting of two shipping containers on the site.

1.2 The Tree Impact Assessment has been carried out in relation to BS.5837:2012, Trees in relation to design, demolition and construction - Recommendations.

2.0 **Tree Survey**

2.1 The trees were inspected on Friday January 31st 2025 by Martin Boardman, Chartered Forester & Consultant Arborist, the weather was cold and dry, all trees were not in leaf.

2.2 The survey is attached and consists of a visual tree assessment inspection from ground level only. Detailed examinations, such as climbing inspections and decay detection equipment were not used. No samples were taken away for analysis. Measurements were taken using specialist tapes, laser and GPS devices. Where, this was not possible (areas of dense vegetation or canopy cover) the measurements were estimated.

2.3 This report should be read in conjunction with the attached tree schedule and site plans.

3.0 Landscape

3.1 The site forms part of the former Brymbo steel works which has been developed for housing and recreation.

4.0 Soil

4.1 No analysis of the soil on the site was carried out. Information from https://www.landis.org.uk/soilscapes/ details the area as slowly permeable seasonally wet acid loamy and clayey soils.

5.0 Conservation Areas, Tree Preservation Orders, Felling Licences

5.1 Permission from the Local Planning Authority is required should the trees be subject to a Tree Preservation Order (TPO) or if the site is within a conservation area.

5.2 At the time of this report there were no individual or group tree preservation orders on the site, the site is not situated within a conservation area.

5.3 Felling Licences

A felling licence is required for the felling of growing trees with a number of exceptions, including:

- trees with diameter less than 8cm (10cm for thinning's, 15cm for coppice)
- cases where the quantity of timber felled is under 5 cubic metres, of which no more than 2 cubic metres are sold in any quarter
- felling to prevent danger
- where felling is required as part of an approved planning application.
- fruit trees or trees standing in an orchard, garden, churchyard or public open space
- felling by various utilities e.g. electricity and water companies in exercise of their functions.

6.0 Wildlife and Timing of Operations

6.1 Bats

Under current legislation it is an offence to intentionally or recklessly disturb a bat or damage, destroy or block access to the resting place of any bat. For further details consultation must be made with the Statutory Nature Conservancy Organisation. Where relevant any current ecological surveys for the site will take precedence in this matter.

6.2 Birds

It is an offence to kill, injure or take any wild bird; or take, damage, or destroy the nest of any wild bird while it is in use or being built. Therefore, work likely to disturb nesting birds shall be avoided within the bird nesting season from February until August. When tree or vegetation clearance work must be undertaken during the nesting season, a pre works survey needs to be carried out by a suitably competent person

6.3 Badgers

Badgers are protected under the Protection of badgers Act 1992. It is an offence damage or obstruct a badger sett which shows signs of current use by badgers, or to disturb a badger within a sett. A 20m protection zone should be established around each sett entrance to prevent damage by forestry operations or machinery. Forestry Operations should be avoided during the breeding season, December to June. The Statutory Nature Conservancy Organisation will provide further guidance if required.

7.0 Tree Root Systems

7.1 A tree root system has three main functions;

- To form structural support for the tree trunk and crown
- To serve as a store for carbohydrates
- To absorb water and nutrients from the soil

7.2 Most tree roots occur in the top 600mm of the soil, the distribution can be unpredictable as root growth is dependent on where the soil environment can sustain it. The presence of underground barriers, poor soils conditions or lack of moisture can prevent or reduce root growth.

7.3 The root system can extend radially in all directions in some circumstanced up to in excess of the height of the tree and beyond the branch tips.

7.4 Most damage to the root system and the subsequent future stability and vigour of a tree can therefore occur during the construction phase to include, but not restricted to :
soil stripping, foundation excavation, site compaction, changing soil levels, covering of root systems with impervious surfaces, changing water table levels.

7.5 Mature trees can survive serious damage for up to five years before they may suddenly decline resulting in usually wind-throw or death.

7.6 Severing roots greater than 200mm within 2-3m of the tree trunk may seriously affect the stability of the tree causing it to become dangerous.

7.7 It is bad practice to cut any root larger than 25mm in diameter, should roots smaller than 25mm require cutting this should be carried out by a trained arborist using sharp tools making a clean cut and leaving as small a wound as possible.

7.8 Simple wounding to the bark or branches by insensitive construction operators can result in sources of infection and later decline. Dead or dying trees may also reduce the amenity of the site.

7.9 Careful construction techniques must be adhered to lessen future impacts that may result in higher maintenance costs at a later date.

7.10 No excavation or construction work should be carried out until a construction exclusion zone has been identified and protective fencing erected.





Examples of tree root spread (NJUG Vol 4 2007)

8.0 The Trees

8.1 A total of one tree and two tree groups were surveyed recording their dimensions in accordance BS5837:2010. These details are recorded in the accompanying tree schedule. The trees were not tagged for the purposes of this report as due to the low number of trees and clear site layout they can be readily identified on the accompanying Tree Constraints Map. (Appendix 4)

8.2 The trees are in generally good condition for their age and location. Work recommended within the tree schedule is considered good arboricultural practice and should be carried out irrespective of the proposed development. At the time of survey there was no visible signs of fungal fruiting bodies, structural deformity, or root plate movement.

8.3 All tree work should be carried out by a suitably qualified and insured contractor, and all should be carried in accordance with BS3998:2010 Tree Work - Recommendations.

8.4 In summary the quality and value of each tree or group of trees surveyed can be classified into one of the following four categories; A,B, C or U (highest to lowest quality respectively). The categories are differentiated on the tree survey plan by colour, or by suffixing the category adjacent to the tree identification number on the tree constraints plan.

8.5 For clarity, the grading system is summarised as follows**:**

U grade – trees for removal, effective for less than 10 years

A grade – trees of high quality and value, effective for more than 40years

B grade – trees of moderate quality and value, effective for more than 20 years

C grade – trees of low quality and value, effective for 10 years

The grading system can be further sub divided into the following subcategories:

1- Mainly arboricultural qualities
2- Mainly Landscape Qualities
3- Mainly cultural values, including conservation

8.6 The trees on this site have been graded into the following classifications:

U - 0 trees

A - 0 trees /groups

B – 0 trees / groups

C – 3 trees/ groups (T1,G1,G2)

8.7 BS5837:2012 Cascade chart for tree quality assessment

BS5837:2012 Trees in relation to design, demolition and construction – Recommendations

Table 1 Cascade chart for tree quality assessment

Category and definition	Criteria (including subcategories when 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 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 *NOTE Category U trees can have existing or potential conservation value which might be desirable to preserve; see 4.5.7.*			Dark red
	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 dominate 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)	Light green
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 remedial defects, including unsympathetic management and storm damage), such that they are unlikely to be suitable for retention of 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	Mid blue
Category C **Trees of low quality** with an estimated remaining expectancy of at least 10 years, or young trees with a stem diameter below 150mm	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 value	Trees with no material conservation or other cultural value	Grey

9.0 General Constraints Data

9.1 The constraints arising from retention of trees is classified as the Construction Exclusion Zone (CEZ) and (Root Protection Area - RPA) as illustrated on the Tree Constraints Plan.

9.2 The Root Protection Area is calculated in m^2 and must be protected during and preserved intact after construction, in order to facilitate the healthy retention of the trees concerned by adequately protecting functioning tree roots. This area is based on a radial measure from the centre of the stem of the tree, which is found by multiplying the stem diameter of the tree concerned, by a factor of twelve (or by a factor of ten when measuring basal diameter immediately above the root flare for multi-stemmed trees).

9.3 The CEZ includes all area up to and including the RPA (Root Protection Area) from the protective fencing.

9.4 During this Arboricultural Impact Assessment, the derived radial measure has been converted into the actual area to be protected, having due regard to prevailing site conditions and how these may have affected the trees, particularly in relation to factors affecting their likely rooting disposition. The means of protecting the RPA will include the installation of tree protection fencing prior to the start of work on site, including all demolition.

9.5 Various activities within the RPA are prohibited (e.g. mechanical excavation, soil stripping, fire lighting, materials storage, lowering levels and creating excessive sealed surfacing), and may include the use of temporary ground protection and/or special engineering solutions where construction is proposed near to retention trees or within the RPA. This is the area above ground occupied by the crown of the tree, along with allowances for working space and if appropriate, for future growth.

9.6 Tree Constraints Plan.

The Tree Root Protection Area for each tree is shown as red line so it cannot become confused with the true crown spread. The crown spread is shown as either red, green blue or grey according to their quality categorization.

10.0 Tree Schedule

This report details all the trees on the site which will be affected by the development. The trees outlined for retention should be protected throughout the entire construction process to include tree protective fencing and Construction Exclusion Zones. (CEZ)

Where possible the bio-diversity of the area should be enhanced with additional small scale planting to provide long term screening.

Tree No	Species	DBH (cm)	Height (m)	Age Class	Crown spread (m) NESW	Overall Condition	Recommendations	SULE	BS5837 Cat	RPA radius (m)	RPA (m2)	Work Priority
T1	Willow	10	3	Y	11111	Good	Monitor annually	10-30	C	1.2	4.52	NWR
G1	Willow x 3	10	3	Y	1111	Good	Monitor annually	10-30	C	1.2	4.52	NWR
G2	Silver birch,x6 alder x 1	15	5	Y	1111	Good	Monitor annually	10-30	C	1.8	10.19	NWR

11.0 Arboricultural Impact Assessment

11.1 The development layout plan (Appendix 5) details the location of the trees in relation to the development.

11.2 The following trees will not be affected by the development

Tree No	Species	Development type	Tree removal Required?	Comments
T1	Willow	Siting container	N	Protective fencing to be erected during siting of containers
G1	Willow x 3	Siting container	N	Protective fencing to be erected during siting of containers
G2	Silver birch,x6 alder x 1	Siting container	N	Protective fencing to be erected during siting of containers

12.0 Discussion

12.1 The tree and two tree groups highlighted within this report are poor quality and self-seeded pioneer species.

12.2 The tree and two tree groups highlighted within this report, will not be affected by the siting of the two shipping containers.

12.3 The tree and two tree groups highlighted are of low landscape and ecological value.

13. Arboricultural Method Statement.

After a site consultation between site engineers and the arborist, the following may be carried out:

a) Carry out any necessary Arboricultural pre-construction works as detailed in the tree work schedule, removal of hard surfaces and demolition of existing structures.

b) Erect protective fencing and site notice (Appendix 3), root barriers and ground protection as per BS: 5837/2012

c) Carry out any development in accordance with the Tree Impact Assessment. Any amendments must be agreed in accordance supervising arborist.

d) Removal fencing and ground protection.

e) Final landscaping and any remedial tree surgery that may be required.

13.1 Schedule of works, Arboricultural monitoring and supervision**.**

The schedule below may be subject to change and determined by operational constraints, any amendments must be agreed between the client and the supervisory arborist.

13.2 Pre-Development Stage

1. Carry out an on-site meeting including the Arboricultural consultant, client and Project manager.
2. Agree on all access to the site.
3. Discuss and agree on site compound burning and mixing areas.
4. Carry out any pruning works needed for access and agree.
5. Carry out and demolition work on site
6. Carry out any works to trees that are directly affected by the development.
7. Carry out any trees works on trees that are indirectly affected by the development.
8. Install all identified tree protection measures including protective fencing as detailed in Tree protection plan (Appendix 6)

9. Carry out a site inspection by the Arboricultural consultant.
10. Record site visit on Site Visit Report (Appendix 2)

13.3 The Development Stage

1. Ensure that the site is accessible for all construction traffic
2. All construction staff to be briefed (tool box talk) by the arboricultural consultant, as per method statement.
3. Any ground works within the RPA to be supervised by the arboricultural consultant.
4. To carry out regular site monitoring during this stage. Timing to be discussed in with contractor.

1 3.4 Completion.

Arboricultural consultant to carry out a site inspection.

13.5 Post Development Stage

1. To remove all protective fencing
2. All landscaping staff to be briefed by the arboricultural consultant.
3. To carry out all Landscaping

Site monitoring is in place to make sure that tree protection measures stipulated within the report are adhered to, and any amendments or issues are carried out with the correct process and ensuring notification to the client.

Supervision within the RPA and CEZ is to ensure there is no undue damage caused to the affected tree.

All tree works and clearance of scrub must be carried out in advance of the erection of the protective fencing.

All tree protection fencing must remain in situ throughout the duration of the construction work up until completion. The fencing can only be removed after a final site inspection.

13.6 Arborist.

All tree contractors working near to trees must have access on site at all times to all relevant sections referred to in this report.

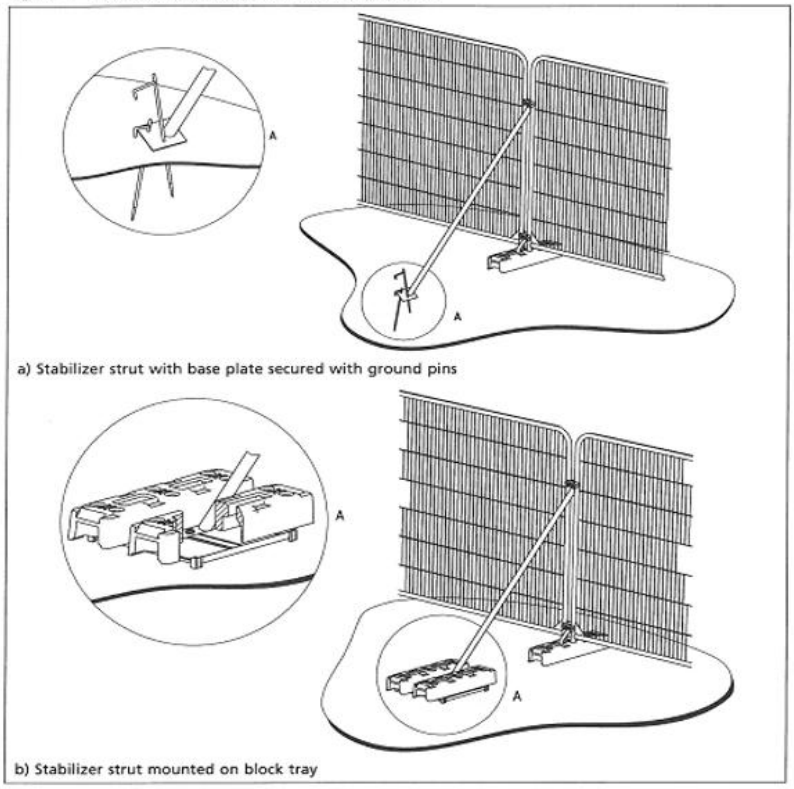
•BS5837:2005 ‘Trees In Relation To Construction’.

•NJUG Guidelines for the planning, installation and maintenance of utility apparatus in close proximity to trees (Volume 4) Issue 2 July 2007.

14.0 Protective Fencing

14.1 Tree protective fencing should be constructed in accordance with BS5837:2012 as shown below.

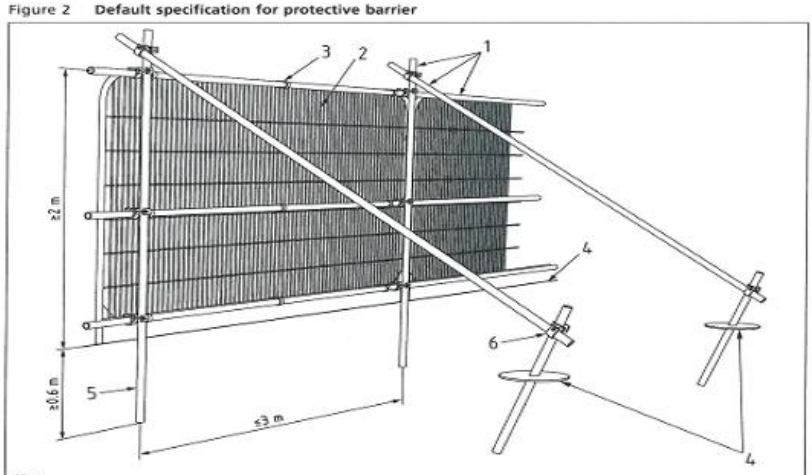
Figure 3 **Examples of above-ground stabilizing systems**



a) Stabilizer strut with base plate secured with ground pins

b) Stabilizer strut mounted on block tray

Figure 2 **Default specification for protective barrier**



Key
1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

15.0 Conclusion

15.1 The trees highlighted within this report will not be affected by the development.

15.6 It is anticipated that the effect will be minimal if the measures detailed within this report are adhered to.

15.7 The area should be enhanced by additional tree planting of trees of local provenance.

16.0 References

• BS 5837/2012 'Trees in Relation to Construction - Recommendations' British Standards Institute, London.

• BS 3998/2010 'Recommendations for Tree Work' British Standards Institute, London.

• 'Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees' 1995 National Joint Utilities Group (NJUG) Publication No. 10.

• Tree Roots in the Built Environment 2006 - Dept. for Communities & Local Government (DCLG)



Mr Martin Boardman, BSc(Hons), PG Dip,MSc, MICFor,

Disclaimer

The tree(s) referred to in this report are living entities and are therefore subject to natural processes. They will also be subject to changes to their environment caused by human's activities and to exceptional weather conditions. The inspection undertaken by our qualified staff relies on visual attributes of tree health and structure which can be assessed from a ground based inspection. Hidden defects which are not readily visible may not be detected. We therefore cannot wholly guarantee the condition and safety of the trees inspected beyond what can be reasonably assessed from the procedure used. We would recommend that the trees are regularly inspected and our staff will advise on the suitable frequency of these inspections.

Appendix 1 Glossary.

Tree Number

Refers to the tree as numerical identified on the site plan.

Species

Common and vernacular name of the tree – Vernacular- Latin names displayed in small italics.

DBH

Diameter at Breast Height (1.5m) in metres.

Height

Approximate height of the tree from base to the tips of the crown.

Age

The appearance of at what stage of life the tree may be in:

Young (Y) Out-planted trees that have not yet established.
Semi-Mature (SM) Established trees up to 1/3 of expected height and crown.
Early Mature (EM) Between 1/3 and 2/3 of expected height and crown.
Mature (M) Between 2/3 and full expected height and crown.
Fully Mature (FM) Full expected height and crown.
Over Mature (OM) Crown beginning to break-up and decrease in size.
Senescent (S) Crown in advanced stage of break-up.

Crown Spread

Measurement in metres of the extent of the tree crown on four cardinal points

General Condition

Consider structural condition in relation to vitality, including pest and diseases.

Tree Condition	
Excellent	**Tree in excellent condition with good vitality and no defects present**
Good	**Tree in displaying good vigour, vitality, only very minor defects**
Fair	**Tree showing some signs of stress, minor defects present**
Poor	**Tree showing signs of major die back, major defects – intervention needed**
Dead	**Tree no longer alive**

Comments / Recommendations

Recommend tree work to reduce risks to an acceptable level during a pre-determined inspection period. Such recommendations will be made to procure a trees vitality and longevity as well as future safety.

SULE

In years, a subjective estimate of **S**afe **U**seful **L**ife **E**xpectancy of the tree.

BS 5837 Retention Category

Retention value based on Table 1 BS 5837(2012)

BS:5837 RPA Radius:

Radius from stem to the line of the tree protection.

BS:5837 Root Protection Area (square metres)

Area around base of tree to ensure adequate root protection

Work Priority

Trees given a priority should have the recommendations carried out within the time-scales assigned. Denoted by the attached key.

Work Priority	
Very High	**Urgent – Works required within 7 days**
High	**Works required within 3 months**
Moderate	**Work required within 6 months – 1 year**
Low	**Works required within 1 -3years**
Very low	**Low priority – within 3 + years**
None	**No target**

Appendix 2 Tree Work Site Visit Report

MBA Trees Site Visit Report (SVR) **QF 01**

Project/Contract		
Location:		
Name		Company
Observations/discussions/actions arising:		Action by
Team Vehicle(S) Registration No.		
Recorded by (print)	Martin Boardman	Date
Signature		

UNCONTROLLED WHEN PRINTED

Appendix 3 Site Notice For Protective Fencing



TREE PROTECTION AREA
KEEP OUT!

TREES ENCLOSED BY THIS FENCE ARE PROTECTED BY PLANNING CONDITIONS AND ARE SUBJECTS OF A TREE PRESERVATION ORDER
(TOWN & COUNTRY PLANNING ACT 1990)

CONTRAVENTION OF TREE PRESERVATION ORDER MAY LEAD TO **CRIMINAL PROSECUTION**

THE FOLLOWING **MUST** BE OBSERVED BY ALL PERSONS:-

- THE PROTECTIVE FENCING MUST NOT BE REMOVED
- NO PERSON SHALL ENTER THE PROTECTED AREA
- NO MACHINE OR PLANT SHALL ENTER THE PROTECTED AREA
- NO MATERIALS SHALL BE STORED IN THE PROTECTED AREA
- NO SPOIL SHALL BE DEPOSITED IN THE PROTECTED AREA
- NO EXCAVATION SHALL OCCUR IN THE PROTECTED AREA

ANY INCURSION INTO THE PROTECTED AREA MUST BE WITH THE WRITTEN PERMISSION OF THE LOCAL PLANNING AUTHORITY

Appendix 4 Tree Constraints Plan



Appendix 5 Tree Protection Plan

