

Arboricultural Impact Assessment (AIA)

For Glyn Llifon Sheep Center

Report prepared for Capita

Prepared by Simon Brain *Chartered arboriculturist*

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1.0 Introduction

1.1 Instruction, Scope, Methodology, Mitigation & Limitations

- 1.2 My name is Simon Brain, I am a chartered arboriculturist, with 25 years' experience holding the LANTRA Professional Tree Inspection certificate. I have been instructed by the client to prepare the following Arboricultural Impact Assessment For Glyn Llifon Sheep Center.
- 1.3 This Arboricultural Implications Assessment (AIA) is based on the proposed developments as shown on the Proposed Site as drawn by gl Hearn and incorporated into the Tree Protection Plans (TPP) in Appendix 1 of this report.
- 1.4 The assessment will be carried out in line with the recommendations in BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations* and will evaluate the direct and indirect impacts of the proposed design and where necessary recommend mitigation.
- 1.5 The AIA considers constraints posed above and below ground and where appropriate makes recommendations to mitigate impacts associated with development sites and retained trees.
- 1.6 Where specialist design, construction techniques or in areas where supervision of the works is required a Special Measure Area (SMA) has been shown on the TPP for the study areas.
- 1.7 Below ground constraints are influenced by the root protection area and are determined in line with the recommendations set out in BS 5837:2012. These recommendations quantify the root protection area based on a measured stem diameter in accordance with Annex C, and the root protection area determined from Annex D.
- 1.8 It is important to understand that when considering the Root Protection Area (RPA) with regards to the circular plot as delineated on the TPP

that a number of site factors can influence root morphology and disposition of tree roots.

- 1.9 Above ground constraints are considered above and below ground and in line with the recommendations in BS 5837:2012 to include; shade, dominance, current and future crown spread as well as the ultimate height of those retained trees.
- 1.10 Impacts associated with development sites and retained trees can be associated with single or multiple site operations that can subject trees to multiple impacts (*root severance, compaction, loss of photosynthetic material*), where this is applicable it will be highlighted in the AIA.
- 1.11 The mitigation measures proposed in this report are essential to ensure that trees marked for retention are adequately protected during the period of post/preconstruction.

2.0 Arboricultural Impact Assessment

2.1 Area for proposed development

2.2 The proposed development has been embedded within the Tree Constraints Plan which indicates the following developments associated with this site to have an arboricultural impact:

- Installation of proposed development infrastructure requiring tree removal

2.3 The arboricultural impacts of these items have been identified below.

2.3.1 Installation of proposed development access requires the removal of the following tree references:

- 3no. trees in G2

3.0 Tree Preservation Orders

3.1 I have not checked with the local Council over Conservation Area or Tree Preservation Order and if they apply to this site.

4.0 Trees to be removed and retained

4.1 The following trees have been identified for removal due to their condition (Category U): None

4.2 A total of 3no. trees are identified to be removed for the direct impact of development as listed in section 2.3.2.

4.3 The remaining trees are due to be retained and protected as outlined on the TPP by methodology needed in an AMS.

5.0 Root Protection Areas (RPA)-modifications

5.1 Root Protection Areas have been plotted in line with the guidance given in BS 5837: 2012 where ground constraints have had or are likely to effect the root morphology of trees e.g. where underground utilities or

building foundations have obstructed root growth this shall require formal confirmation by excavation to establish presence or absence of significant rooting material. No RPA modifications have been shown for this scheme.

6.0 Post construction considerations

6.1 Not applicable due to numerical tree loss on western boundary.

7.0 Tree pruning to facilitate development and future pruning

7.1 There are some requirements for minor levels of tree pruning to facilitate the proposed development.

8.0 New surfacing and ground level modifications

8.1 No new surfacing is required in RPA of retained trees.

9.0 Construction Exclusion Zones and Special Measure Areas

9.1 The Construction Exclusion Zone has been shown as a black fenced polyline on the TPP in Appendix 1 and shall be constructed using heras panels and rubber feet securely staked to the ground.

9.2 The CEZ is purposefully located within proposed new surfacing near TPO trees in order to prompt site supervision and wider protective measures when new surfacing is installed.

9.3 The CEZ must be installed as signed off as fit for purpose before any other works commence on site.

10.0 Site supervision and monitoring

10.1 Where a tree has been delineated on the TPP as requiring retention there will be a requirement to oversee construction operations in these areas in order to ensure that no damage occurs to the retained tree.

- 10.2 To ensure that there is an auditable system of site monitoring, reports will be compiled by an appointed arborist and following site visits they issued to the site manager and design team, copies of which will be available on site at all times for inspection by a Council planning/Tree officer.

11.0 Installation of below ground infrastructure

- 11.1 No detailed plans have been provided specifying the location of site utilities
- 11.2 Specialist advice with regards to the position of utilities will need to be sought from engineers and must be reviewed by the consulting arboriculturist prior to commencement on site.
- 11.3 The usual construction techniques for installing site utilities within an RPA will be unacceptable due to the level of root severance that would occur. The impact of root severance will have a detrimental effect on tree health as trees require a healthy root system in order to maintain water and mineral uptake from the soil. Trees need to maintain a balance between shoot and root growth to ensure that the resources supplied by each can meet the demand of the other. Severance of tree roots caused by trenching can lead to reduced water uptake which in turn impacts on the trees ability to supply water to the canopy, resulting in desiccation. A further complication associated with root severance can be problems associated with tree stability. The tree relies on an intact root system in order to maintain stability; this stability will be compromised by root severance.
- 11.4 The use of trenchless techniques can be acceptable provided the depth of service run that is excavated is below the anticipated root depth.

12.0 Design change requirements

- 12.1 Design change requirements have not been necessary.

13.0 Amenity Value

The retention of significant arboricultural assets has been achieved.

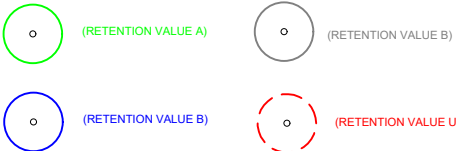
14.0 Concluding statement

- 14.1 The proposed scheme was assessed in line with guidance provided in BS 5837:2012 *Trees in relation to design demolition and construction – Recommendations* with the aim to achieve a harmonious relationship between trees and structures that can be sustained in the long term.
- 14.2 It is my professional opinion as an arboriculturist that such a balance has been achieved and no change in wider public amenity is anticipated as a result of the proposals.

Appendix 1 Tree Protection Plan

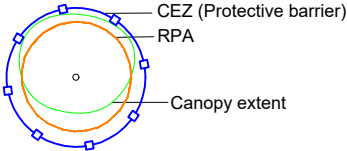
TREE PROTECTION PLAN

Retention value key



Root Protection Areas (RPA) & Construction Exclusion Zones (CEZ)

Root Protection Areas (RPA's) have been identified and are based on BS5837:2012. RPA's and Construction Exclusion Zones (CEZ) have been shown as detailed below. The CEZ shall act as the protective barrier for retained trees.



CEZ
The CEZ's will require installation as shown on the TPP.

Species Rich Gr

General (or equivalent approved)

SPECIES
Achillea millefolium
Vicia sativa
Iris pseudacorus
Medicago lupulina
Plantago lanceolata
Prunella vulgaris
Rhinanthus minor
Lathyrus pratensis
Trifolium pratense
Trifolium repens
Cerastium fontanum
Taraxacum officinale
Lotus corniculatus
Sanguisorba minor
Vicia cracca
Ranunculus acris
Centaurea scabiosa
Anthriscus sylvestris
Lolium perenne
Cynosurus cristatus
Festuca rubra litoralis
Poa pratensis
Trisetum flavescens
Holcus lanatus
Agrostis capillaris
Phleum bertolonii

Native Tree Planti

SPECIES
(Cb) Carpinus betulus
(Qc) Quercus petraea

Trees to be double-staked. Native tree

Native Hedgerow I

SPECIES
Acer campestre
Corylus avellana
Crataegus monogyna
Ilex aquifolium *
Rosa canina *
Viburnum opulus *

To be planted 600 per 10m in a double plus 600m 10m 120m 10m. To be planted

NOTES
This drawing shall not be reproduced in black and white.
This drawing is produced for Planning and Construction

Client:
Capita

Project:
Sheep Centre

Detail:
TREE PROTECTIONS PLAN - Overview

Drawn By: SB Date: 27.06.2022 Scale: 1:1250@A3

Drg No: TR-01 Revision: V1

Tree No.	Common Name	Age	Diameter(mm)	Stems	Height(m)	Crown Height(m)	North(m)	South(m)	East(m)	West(m)	Category	Life Exp	Comments	Recommendations following AIA	RPA-R
T1	Common Oak	M	500	1	10	0	6	6	6	6	A2	40+	Behind 3m wall.	Unaffected	6
T2	Ash	M	860	2	12	0	8	8	8	8	A2	40+	Behind 3m wall.	Unaffected	10.3
T3	English Elm	M	375	1	12	0	5	5	5	5	A2	40+	Behind 3m wall.	Unaffected	4.5
T4	Ash	M	600	1	12	0	7	7	7	7	A2	40+	Behind 3m wall.	Unaffected	7.2
G1	Goat Willow	SM	283	2	7	0	4	4	4	4	C2	40+		Unaffected	3.4
G2	Goat Willow	SM	377	3	7	0	4.5	4.5	4.5	4.5	C2	40+		3no. Trees lost, install CEZ for remaining trees	4.5

Appendix 3
Arboricultural Method Statement

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1.0 Introduction

- 1.1 The scope of this report is to provide an arboricultural method statement, specifically in relation to the construction of new surfacing within a tree rooting zone but also for the construction of a temporary access required for the demolition phases of development. To demonstrate the methods for working in or adjacent to root protection areas in order to avoid unacceptable impacts between the proposed design and retained trees and offer a level of protection for those trees that are to be retained on site.
- 1.2 It is important that the guidance in the method statement is followed and understood by all persons involved in the design and construction of the proposed scheme.

2.0 Communication Details, Monitoring and Compliance

- 2.1 It will be the responsibility of the site manager and appointed arboricultural consultant to brief all contractors on site as to the adherence to the arboricultural method statement. A copy of this method statement will be made available to site contractors at all times during the period of development.
- 2.2 A list of site contacts is available to the rear of this document.
- 2.3 All Special Measure Area works (no dig surfacing) shall be fully supervised on site by the arborist.
- 2.4 In order to outline working methods in relation to trees prior to any construction activity on site, a site meeting shall take place between the main contractor and arboricultural clerk of works. The organisations and individuals performing these roles shall be appointed prior to a pre start meeting. A record of the meeting will be taken and distributed to relevant parties and the meeting will confirm the duration of the works and any phasing implications or specific contractor related issues and how they are to be resolved.

The following will be explained at the pre start meeting:

- The central aspect of tree protection on this site is that the CEZ shall be installed prior to works.
- It is noted that arboricultural input is prior to construction (pre start) and whilst supervision is required throughout the build period all operations in the SMA

must be overseen by the arboricultural clerk of works and must be carried out prior to any other works on site unless otherwise agreed with the LPA.

3.0 Tree pruning

- 3.1 Only tree works permitted and agreed with the subsequent planning permission shall be permitted. Where tree pruning is required in addition to that already specified in the preliminary tree survey schedule, it will be agreed in writing with the LPA Tree Officer prior to commencement.
- 3.2 All arboricultural works shall conform to the recommendations of BS3998:2010 British Standard Recommendations for Tree Work unless otherwise specified.

4.0 Protective barrier

- 4.1 Before commencing any site works Construction Exclusion Zones (CEZ) will be constructed in line with the Tree Protection Plan (TPP) and specification for the CEZ contained within the plan.
- 4.2 The protective barriers will be constructed to the specification as detailed in BS 5837:2012 and consist of a 2m high steel mesh panels (Heras panels) secured to the ground via rubber feet and metal stakes. The fencing will be secured by uprights driven into the ground to a minimum depth of 0.4m. Please refer to Appendix 2 showing a detailed specification for the construction of the barrier fencing within the Tree Protection Plan.
- 4.3 All weather notices will be secured to the barriers showing the following wording: "CONSTRUCTION EXCLUSION ZONE – NO ACCESS".
- 4.4 Once installed all fencing will be inspected by the consulting arboriculturist and signed off as secure prior to any works.

5.0 Additional precautionary measures

- 5.1 Plant and materials will be stored in designated areas outside the CEZ.
- 5.2 Movement of cranes on site will be conducted under the supervision of a banks man to ensure that a suitable distance is maintained from trees on site.

5.3 Materials will be stored in such a way that if spillage did occur no chemicals would leach into the CEZ.

5.4 Wash points for tools and equipment will be placed outside of the CEZ. When determining the proposed location for wash point's consideration will be given to the design of the station to ensure that run off does leach into the RPA.

5.5 Fires on site will be no be permitted

6.0 Method for construction of new surfacing

6.1 Any new hard surfacing shall be outside the CEZ.

7.0 Edge supports

7.1 Not applicable.

8.0 Services within the RPA

8.1 At present there are no plans for services in the RPA of retained trees. Where there is a need to route services with an RPA technical design, plans will be produced in association with the arboriculturist to ensure that the least destructive path is identified. Specialist equipment (ground penetrating radar) may be required in order to accurately map the root system to ensure that the route of least impact is found. It is preferable that where the need to route services through a trees rooting zone, all apparatus will be located together in common ducts. Inspection chambers will be located outside of the RPA.

Note: The desired option will always be to route the proposed new services away from the RPA due to the high probability of significant damage occurring to tree roots.

9.2 The favoured method of insertion for services is a trenchless insertion method which differs on the requirement of the utility apparatus and includes micro-tunnelling, surface launched directional drilling, pipe ramming and impact moling. Where any of these methods is utilised then the entry and retrieval pits will be located outside of the RPA.

Ref: Volume 4: NJUG Guidelines For The Planning, Installation And Maintenance Of Utility Apparatus In Proximity To Trees (Issue 2) – Operatives Handbook

- 9.3 Any roots un-earthed during the excavation are to be pruned in accordance with British Standard BS5837:2012. Pruning of roots in excess of 25mm is to be agreed with the LPA's Tree Officer and pruning is to be carried out under supervision of the consultant arboriculturist. Exposed roots not to be pruned are to be covered immediately in order to prevent desiccation and to protect from rapid changes in temperature. All protective materials shall be removed prior to infilling with topsoil; care will be taken to ensure that no contaminated material is introduced into the excavation.

10.0 Contact details

- 10.1 The following list details key project consultants and officers who can provide appropriate advice on arboricultural matters relating to the above project.

Site manager:

Site supervisor:

Arboricultural consultant:

Amenity Tree Care Ltd
Burwardsley
Chester
Tel: 01829 770075

Tree officer:

Planning officer:

Please do not hesitate to contact me should you require further assistance.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Simon Brain', with a stylized flourish at the end.

Simon Brain *Ba. Tech Cert Arb. PG Cert (Bio Rec)*
Chartered arboriculturist. ecologist
Managing Director