

Arboricultural Impact Assessment & Arboricultural Method Statement

Land at
The Elms
Wrexham

Ref:
AIA/TEW/07/19

Date:
27th July 2019

Commissioned by:
Mr K. Alderman
on behalf of
TACP Architects LTD

Prepared by
S. Shields

Arboricultural Impact Assessment

The Elms

Wrexham

This Arboricultural Impact Assessment has been prepared in accordance with the protocols, standards and procedures set out in BS 5837: 2012 'Trees in relation to design, demolition and construction'.

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Instruction

- 1.1 Shields Arboricultural Consultancy received instructions from Mr K. Alderman on behalf of TACP Architects Ltd, to undertake an Arboricultural Impact Assessment at the above location. The client or their agents may copy and distribute this report as required for the purpose of applying for planning permission for or preparing any documents or plans for this or future applications at this site.
- 1.2 Planning permission is being sought to resurface the existing car park using block pavements. A site plan ref: 16001 ST-03 has been provided and is considered in this report.

Scope & Limitations

- 2.1 The purpose of the report is to assess the environmental and amenity values of all trees on or adjacent to the area affected by the proposed development. The report will assess the long-term contribution that the trees can make to the area and the arboricultural implications of retaining them and seek to find a satisfactory juxtaposition between the trees and the new development. The report will assess the potential impact that may arise as a result of the proposed construction works and make recommendations for protecting trees, hedges and shrubs where appropriate
- 2.2 The report is prepared in accordance with the recommendations of the British Standard Document BS 5837: 2012 'Trees in Relation to Construction'.
- 2.3 This report is not an ecological assessment and does not identify habitats or constitute a protected species survey.

Statutory Controls & Obligations

- 3.1 Forestry Act; the felling of trees is controlled by the Forestry Act, which requires that a felling licence is obtained prior to cutting down any trees. The Forestry Act does not apply to the felling of trees growing within an orchard, private garden, churchyard or public open space. The Forestry Commission has the responsibility for enforcing the Forestry Act.
- 3.2 Tree Preservation Orders & Conservation Areas; Local Authorities have specific powers under the Town & Country Planning Act 1990 as amended, to protect trees through the use of Tree Preservation Orders. Where trees are protected under such orders it is a criminal offence (subject to any exemptions for which provision may be made by the act or order) to undertake, cause or permit the cutting down, topping, lopping, uprooting, wilful damage or wilful destruction of trees except with the consent of the local planning authority. Similar controls apply to all trees growing within a designated Conservation Area.
- 3.3 Bats, wild birds and other protected species; The Wildlife & Countryside Act & the Conservation (Natural Habitats & C.) Regulations make it an offence to disturb or destroy bats and bat roosts and wild birds and their nests. Other species of plant and

animal are also protected. These creatures often inhabit trees and sufficient care must be taken to ensure they are not affected during forestry and arboricultural works.

Site description

- 4.1 The Elms is a period building situated off Rhosddu Road near to the town centre of Wrexham. The site is currently used as a health care building and has an area of car parking to the south.
- 4.2 There are a number of trees on the site, including a large mature beech, situated in the car park to the south of the building.



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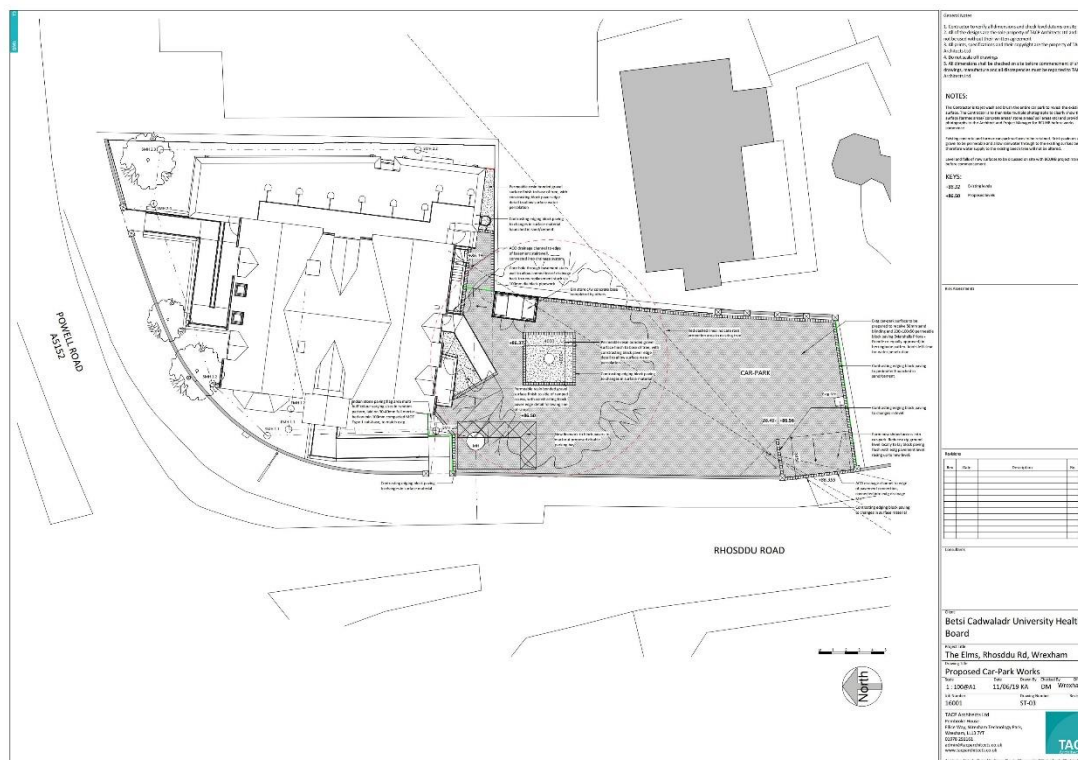
Soils

- 4.3 Most the site is occupied by the existing building or is under hard standing. Where soft landscape is present, soils appear to be free draining. Geological maps indicate a glaciofluvial drift over coal measures.

*NB. This soil assessment is undertaken in situ using visual and manual techniques and is **only** for the purpose of establishing the influence of site soils on tree growth. The assessment **must not** be relied upon to inform any engineering decisions.*

Development Proposal

- 5.1 The existing building has recently been refurbished and extended and it is now proposed to resurface the car parking area to the south using block pavements set in sand.



Tree Survey Methodology

- 6.1 All trees within and adjacent to the site have been assessed where they are within 15 m of any area that may be disturbed as a result of the proposed development and have a stem diameter over 75mm at 1.5 metres. Measurements have been taken in accordance with the procedures and protocols set out in BS 5837: 2012 and the Forest Mensuration Handbook. Height measurements are approximate unless otherwise stated. Trees have been assessed as individuals, groups or woodlands as appropriate. Where access to trees has been restricted, either as a result of their situation on private land or where vegetation or ground conditions are unfavourable, an estimation of trunk diameter has been made. This entails using a set of callipers to approximate the measurement. Estimates are rounded up to provide a margin. This technique has only been used where there is a sufficient buffer between the RPAs and any area disturbed by development. Where trees are in woodlands or groups only the outside edge trees are assessed unless there are larger trees with RPAs or crowns that would overlap the edge trees.
- 6.2 BS 5837: 2012 provides the framework through which tree can be categorised in terms of their health, amenity value and long-term viability for retention on a development site. There are four categories, A,B,C & U.

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

- 1 Trees that are particularly good examples of their species, or essential components of groups or formal arboricultural features.
- 2 Trees, groups or woodlands that provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance.
- 3 Trees, groups or woodlands of significant conservation, historical, commemorative or other value.

Category B: Trees of moderate quality and value in such a condition to make a significant contribution (a minimum of 20 years)

- 1 Trees that might be included in a higher category but are downgraded because of impaired condition.
- 2 Trees present in numbers, usually as groups of woodlands that form distinctive landscape features.
- 3 Trees with clearly identifiable conservation or other cultural benefits.

Category C: Trees of low quality and value currently in adequate condition to remain until new planting could be established. Trees in this category would not usually be retained if they would pose a significant constraint to development.

Category U: Trees in such a condition that their existing value would be lost within 10 years and which should, in the current context be removed for arboricultural reasons.

The most significant or valuable trees are placed in the categories, A & B. Site design should make provision to retain trees in these categories and most Local Planning Authorities will insist upon this (or in exceptional circumstances will require that significant compensation planting is incorporated into the design), whilst trees that should not be a constraint to development are recorded with a C category. Trees categorised as U are in a poor condition and should be removed prior to the commencement of work.

- 6.3 Where trees are to be retained, it is necessary to ensure that they are suitably protected to avoid damage during the construction phase of the development. It is also important to consider any long term implications; such as issues with shading or leaf litter that may arise as a result of tree retention.
- 6.4 To ensure that trees are not adversely affected by the construction works it is necessary to:
 - a. The avoidance of physical damage to the aerial parts of the trees (i.e. Impact and other damage to trunk and branches)
 - b. The avoidance of damage to retained trees as a result of the severance or other physical damage to their roots

- c. Preserve of the character of the soil, through the avoidance of any activity that would cause it to become compacted or otherwise disturbed or disrupted, and to avoid contamination by potentially harmful substances
- d. To ensure free gaseous exchange is permitted between the upper layers of soil and the atmosphere
- e. To ensure adequate (but not excessive) water supply to the soil and hence to tree roots

This would normally be achieved by establishing an area, known as a construction exclusion zone (CEZ) around each tree. The CEZ is derived from the root protection area (RPA) and the crown spread of the tree. The RPA represents the area occupied by the tree's root system and is calculated for each tree based on its stem diameter and the ground conditions present taking account of and any impediment to rooting. The RPA should represent the most probable position of the tree's root system.

The CEZ must be considered sacrosanct and be maintained completely undisturbed. No construction should take place within this area and it should not be used for storage of materials or fuels. Access for vehicles machinery or personnel is prohibited and to ensure that it is not damaged by construction activity it must be suitably protected during the construction phase, using robust fencing or alternative ground protection methods, to prevent disturbance and damage occurring.

- 6.5 In addition to the implications that a new development may have for existing trees it is also important to assess any long term issues or concerns that may arise as a result of retaining trees close to a new dwelling or structure. This can include problems associated with leaf litter and other debris that may fall from trees, the potential that a tree has to cause damage to a structure in the future, any on-going maintenance requirements that may arise and the level of shade that the tree may cast, it is particularly important to consider the effects of shading where trees are to the south of houses and gardens. Trees can also cause feelings of apprehension to the occupiers of nearby buildings and can have an over bearing impact on a property if adequate space is not provided.
- 6.6 The report assesses all trees with regard to their size, position and natural characteristics, and taking into account of their future growth makes provides recommendations as to their long term suitability for retention.

Arboricultural Assessment

- 7.1 Full details of the tree surveyed are provided in appendix A. and their relative positions, crown spreads, root protection areas are indicated on the attached plans.
- 7.2 No checks have been undertaken to establish the status of the trees with regards to Tree Preservation Orders or Conservation Areas, however all the trees will be subject to the Forestry Act (see section 3.1) and all hedges subject to the Hedgerow regulations (see section 3.3). No trees or hedges should be felled, lopped, topped or in otherwise removed or damaged without prior permission from the relevant authority.
- 7.3 The survey recorded 1 individual tree which is categorised as follows:

Category	Quantity
Category A: Trees of high quality and value in such a condition as to be able to make a substantial contribution (a minimum of 40 years)	1
Category B: Trees of moderate quality and value in such a condition to make a significant contribution (a minimum of 20 years)	0
Category C: Trees of low quality and value currently in adequate condition to remain until new planting could be established. Trees in this category would not usually be retained if they would pose a significant constraint to development.	0
Category U: Trees in such a condition that their existing value would be lost within 10 years and which should, in the current context be removed for arboricultural reasons.	0

Arboricultural merits and the significance of the trees in the landscape

- 7.4 The most significant tree on the site is the large beech (T1) situated in the car park area to the south of the building. The tree is in a prominent position in a busy part of the town and is a key feature of the local landscape and makes a significant contribution to the amenity of the area. There are a number of other trees on the site, including a small area of planting to the north of the building. These trees are in a reasonably prominent location, but are relatively small in size and have less significance in the landscape than T1. There are no veteran trees or areas of ancient woodland or ancient woodland sites within 500m of the site.

Arboricultural Impact of the Development

- 7.5 Following the recent refurbishment and redevelopment of the building and site, it is proposed to resurface the existing car park area using block pavements. The existing car park has a mixture of hard surfaces that have become damaged and degraded over time, and the underlying subbase is highly compacted. As the current car park extends around T1, some of the resurfacing work will take place within its RPA of T1. To ensure that the tree can be retained and will not be

detrimentally impacted, the resurfacing will be undertaken in a manner that reduces the risk of damage to the root system of the tree and will meet the design specification in the section 9 and follow the detailed method statement in section 10.

- 7.6 Providing the above specifications are followed, there is no significant risk to the tree.

Arboricultural Operations

Permission to remove any tree must be obtained from the Local Planning Authority and must not be undertaken until all pre-commencement conditions have been discharged.

- 8.1 No arboricultural works are required to implement the proposed resurfacing work.

Construction Performance Specifications

Resurfacing Specification – General Car Park

- 9.1 The new surface must be constructed over the top of the existing surface, without any deep excavation or additional compaction of the underlying sub-base and sub-soil. The existing surface can be planed down to provide a level and even surface using a light-weight road planer or other suitable machine working off the existing hard standing. Maximum depth of reduction to remove the surface must not exceed 100mm and must be carried out under arboricultural supervision. Any alterations to levels to allow the new surface to marry up with existing surfaces and the highway must be undertaken outside the Precautionary Zone Two as indicated on the Tree Protection Plan (TPP/TEW/07/19).
- 9.2 The new surface must be porous to allow the passage of water and oxygen into the underlying soil but also constructed in a way that would reduce the risk of contamination of the underlying soil in the advent of a large oil or fuel spill. To achieve this a geo-textile membrane such as Treetex® (Geosynthetics Limited, Fleming Road, Harrowbrook Ind Est, Hinckley, Leicestershire, LE10 3DU. Tel: 01455 617139) that acts as a barrier to prevent the migration of fine materials from the base layer and traps oil is to be laid over the prepared surface prior to the installation of the porous block paviour finished surface.

Area Around Tree Base

- 9.3 To improve growing conditions of the tree and for aesthetic purposes, an area of de-compacted and improved soil capped with porous resin bonded gravel, approximately 16m² (4000mm x 4000mm) is to be established around the base of the tree.
- 9.4 All current surface materials are to be removed from this area and the underlying soil de-compacted using an airspade, prior to the finishing with a layer of Treetex® and resin bonded gravel. The edge of this area is to be contained and demarcated using block paviour edging. A gap of 75mm is to be left between the stem of the tree and the resin

bonded gravel finish. This may require the use of a custom made steel retaining ring to hold the surface edge at this point. Any ring must be free standing and not fixed to the tree in anyway.

Arboricultural Method Statement

- 10.1 This arboricultural method statement (AMS) sets out the details of tree protection measures afforded to the retained trees on and adjacent to the site.
- 10.2 This AMS should be read in conjunction with the Tree Protection Plan (TEW/TPP/10/15). The TPP indicates the precautionary area on the site.
- 10.3 Copies of the TPP & the AMS must be available on site and all tree protection requirements explained to all persons undertaking activities on the site during the site induction process.
- 10.4 All general tree protection measures must be installed and inspected prior to bringing onto the site any plant, materials or equipment or undertaking any construction works or demolition or any arboricultural works. The LPA must be informed in writing once the tree protection measures are installed.
- 10.5 The site is to be inspected by the consulting arboriculturalist in accordance with the schedule of inspections (see 10).
- 10.6 All measurements are given in metric using standard abbreviations.

Fencing and Ground Protection

- 10.7 No fencing or ground protection is specified for this site, however it will be necessary to temporarily demarcate Precautionary Zone 3.

General Precautions

- 10.8 No materials that are likely to have an adverse effect on tree health such as oil, bitumen or cement will be stored or discharged within 10m of the trunk of a tree that is to be retained or within any part of the CEZ. Spills kits, suitable for the type fluids, fuels and chemicals stored on site must be available on site and site operatives must have training in their use.
- 10.9 No fires will be lit within 20m of the trunk of any tree that is to be retained.
- 10.10 Storage and mixing areas, contactor parking and all site huts must be off site.
- 10.11 Access to the work area is via the main site entrance.

Precautions when working within RPA

- 10.12 This section sets out the specific requirements when working within the RPA of T1 and should be read in conjunction with Tree Protection Plan Detail ref: TEW/TPP/07/19. This plan identifies 3 Precaution Zones within and adjacent to the RPA of T1 and provides specifications for

operations within each zone. A pre-commencement meeting is to take place between site operatives and an arboriculturist from Shields Arboricultural Consultancy. This meeting will discuss the tree protection requirements.

Precaution Zones 1 & 2 – Car Park

- 10.13 The existing surface is to be planed down using a lightweight road planer or other suitable machine to provide a level sub-surface to work off. This must be undertaken under full arboricultural supervision. The maximum depth of material removed is not to exceed 75mm. Once a surface has been established, a layer of Treetex® geo-textile is to be installed and secured over the surface, in accordance with the manufactures instructions. On to this a base layer of sand is to be spread on to which the pavements are to be set. All work is to be undertaken using hand tools or light weight machinery.
- 10.14 Pavements can be held in place using pinned steel edging or haunched with mortar set on top of Treetex® geo-textile. Any changes in levels required to marry the new surface to the existing is to be undertaken in only in Precautionary Zone 1.

Precautionary Zone 3 – Area Around Tree Base

- 10.15 The existing hard surface within zone 3 is to be broken up and removed using hand tools under full arboricultural supervision. It is important that not roots or other parts of the tree are damaged. If any roots are exposed, they are to be wrapped in damp Hessian sacking and kept damp until being recovered with soil in the next stage.
- 10.16 Once all the existing hard surface materials and other contaminants have been removed from the area, the underlying soils are to be de-compacted and lightly cultivated using an airspade. As part of this process soil improvement is to be undertaken by the addition of Carbon Gold Soil Improver® www.carbongold.com/product-category/tree-care to the root zone. The CGSI should be spread over the root zone of the trees at a rate of approximately 1000 grams per m², a total product requirement of 16kg. This is to be lightly mixed with the soil using the airspade. Any exposed roots are to be unwrapped and covered with soil. The area is then to be lightly tamped down using a hand tamper before a layer of Treetex® is installed over the area.
- 10.17 The final step is to lay the resin bonded gravel in accordance with the manufactures instructions.
- 10.18 To ensure that all tree protection measures undertaken the site shall be monitored by Shields Arboricultural Consultancy to the following schedule. Details of the findings and photographic evidence of the site inspection visits will be reported to the LPA by email within 24 hrs of the visit.

Schedule of Inspection

1. Pre-commencement site meeting
 2. During removal of existing surface
 3. During airspace de-compaction
 4. On completion of project
- 10.19 Prior to the commencement on site of any work, a competent person is to be appointed to monitor the day to day activities on site. In the case of a tree being damaged or where an unexpected event arises it will be for this person to contact Shields Arboricultural Consultancy to seek advice on contingency measures.

Conclusion

- 11.1 The recommendations in this report are made to reduce the risk of damage to the tree on the site to an acceptable and tolerable level. It should be noted that there is always some risk of harm occurring when construction activities are undertaken within the RPAs of established trees. Key to the success of this project is that adequate supervision is provided in accordance with the schedule set out in section 10.

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Chartered Forester

27th July 2019

Arboricultural Assessment

Ref. No.	Species	Top Height	Stem Dia mm	N	E	S	W	CC (FSB)	Age	Rem Cont.	Cat.	RPA m ²	Notes	AIA
T1	Fagus sylvatica (Beech)	17	770	7.1	7.4	8.1	7.2	2.5 (S)	OM	20+	A2	268	Condition: Good Notes: Mature to late mature specimen, appears to have been managed as a pollard at some point in the past but has now re-developed a full crown. Situated in hard standing in car park area. Crown encroaching on building to the north.	Very significant tree with a high amenity value. Works to re-surface car park within the RPA are subject to a method statement.

Ultimate Heights of Main Species

Beech 18

Notes

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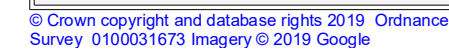
Category U: Trees in such a condition that their existing value would be lost within 10 years and which should, in the current context be removed for arboricultural reasons.

Bat potential has been assessed in accordance with the guidance provided in BS 8596:2015 and is at the level of a non-specialist scoping survey. This assessment is for preliminary advice and does not negate the requirement for a specialist ecological survey

Key

Tag No	Identification number for tree	Species	Species of tree
Top Height	Estimated height of tree	Stem Dia.	Diameter of stem at 1.5 metres
Stems	Number of stems	N, E, S, W	Crown spread at compass points
CC	Crown Clearance	FSB	Direction of first significant branch
Rem. Cont	Remaining safe life expectancy in years	RPA	Root protection area in m ²

Cat.	BS Category (see above)	AIA	Arboricultural Implication Assessment
Age	Y - Young Trees SM Semi Mature EM Early Mature M Mature LM Late Mature exceeds normal life expectancy for species VET Veteran Tree		
Condition	Good Relatively free from defects and / or major pests and diseases Fair Some defects, which could be addressed through tree surgery or minor pests or early symptoms of diseases Poor Substantial defects or terminal decline Dead Dead		



Tree & Woodland Management Solutions

Wrexham

11/11/2019

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Canopy Spread

Precautionary Area One

Precautionary Area Two

Precautionary Area Three

Precautionary Area Three

Do not scale from this drawing all dimensions to be checked on site
Drawing is colour coded and a monochrome copy should not be relied upon

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