Treestyle
CONSULTANCY

BS 5837:2012
Arboricultural Impact Assessment
Arboricultural Method Statement
and
Tree Protection Plan

Date of the Inspection
7th September 2020

Site
Land at Cottam Cottage Farm
Written Stone Lane
Longridge
PR3 2ZN

Description
Holiday let and its associated parking

Instructed By
PGB Architectural Services

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Executive Summary

Treestyle Consultancy was commissioned to complete a survey to specifications set out in British Standard 5837:2012 *Trees in relation to design, demolition & construction - Recommendations.* This document is an Arboricultural Impact Assessment (AIA) which explains the Arboricultural Method Statement (AMS) and Tree Protection Plan (TPP). The proposal is for the development of a holiday let on an unused area of land.

The Tree Survey recorded a total of seven trees, three hedges and five groups of trees for the purpose of this report. The green infrastructure comprises of four mature trees on opposite side of the lane from the proposed area of land, these were recorded as three of them are ash and have various stages of ash dieback (ADB) infection. Hedging can be seen bordering part of the boundaries with an orchard of trees to the east. A group of dead holly trees and a mature sycamore are also within influencing distance of the proposed development.

The Proposed Development

- The development of a wooden holiday and its associated parking area.

The Arboricultural Impact Assessment (AIA)

- The removal of a group of damson trees and two small trees of low quality.
- The creation of the entrance and parking are close to the boundary hedging which has the potential to cause indirect damage from building materials that will require access near to the trees.
- There are ash trees along the northern boundaries with various stages of ADB.

Tree Protection Plan (TPP)

- The Root Protection Areas (RPA's) of the trees to the east is a Construction Exclusion Zone (CEZ) and will be protected with Heras fencing.
- The prevention of storm water damage or spillages from building materials into the soil profile poses the greatest threat of soil contamination.
- The two hedges lining the northern boundary will be protected from the entrance and parking development, however, a small section is required for removal to widen the driveway entrance.

The Arboricultural Method Statement (AMS)

- Will require approval by the Local Planning Authority (LPA).
- See the recommended tree work carried out in accordance to Appendix A - Tree Schedule.
- Instalment of the tree protection measures.
- Pre commencement meeting to confirm all recommended protection is adequate.
- Construction of the developments.
- Removal of the tree protection.

It is important that the caveats and limitations of this report are understood, these can be read in Section 11.0 of this document.

1.0 Introductions

1.1 Under instruction from PGB Architectural Services Ltd an arboricultural report has been prepared to accompany a planning application for development of a holiday let with the associated areas for parking. This report details the arboricultural impact on the site, subsequent mitigation recommendations and protective measures. The latter part of the report explains how the construction of the new surface will take place with regards to the protection of the trees to be retained.

1.2 The assessment was carried out in 16th September 2020 by Andrew Mcloughlin of Treestyle Consultancy. This assessment was carried out from the ground in accordance with BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*. The categorisation method identifies the quality and value of the existing green infrastructure.

1.3 Drawings of the existing and the proposed developments has been supplied, this information has been included when mapping the existing tree population. An appropriate Tree Protection Plan (TPP) has been drafted and revised as necessary from this Arboricultural Impact Assessment (AIA).

1.4 It should be noted that neither soil samples or soil maps have been used to make decisions on this report. Therefore there is the possibility of minor soil movement due to tree root activity. Prior to the undertaking of foundation depths calculations of any estimated tree locations should be resolved. If there are any discrepancies with trees locations or queries relating to their location or species within the group, then Treestyle Consultancy should be contacted prior to planning submission.

1.5 A total of seven trees, three hedges and five groups of trees for the purpose of this report. These can be viewed in Appendix A – Tree Schedule and Drawings 1, Tree Numbering & Categorisation, Drawing 2 - The Proposed Development, Tree Removal, Root Protection Areas and Protective Fencing.

1.6 This report provides the results of the survey and includes the following;

- A schedule of all tree and hedges located on or within influencing distance of the proposed development site (Appendix A – Tree Schedule).
- An assessment based on BS 5837:2012 of trees in terms of their potential value within any future development. On the basis of this assessment trees have been categorised into one of four categories: High, medium, low or not worthy of retention (A, B, C or U). See Appendix D - BS 5837:2012 Cascade Chart for Tree Quality Assessment.
- Advice on removal, retention and management of these trees and hedges can be read in Sections 5 & 7 of this report.
- A Tree Constraints Plan detailing tree quality categories, canopy spread (N, E, S & W), Root Protection Areas (RPA's), life span, Diameter at Breast Height (DBH), RPA m2, tree height and condition for all of the trees surveyed.
- A Tree Removal and Protection Plan detailing the development proposals alongside trees to be retained and removed and any temporary protection measures.

2.0 Site and Surroundings

The Grounds

2.1 The land to be utilised for the holiday let is basically an extension of a garden previously used as an orchard. This is predominately overgrown with low quality trees and several hedges with potential.

Surrounding land

2.2 Cottam Cottage Farm is located at the end of Writtenstone Lane near Longridge. The surrounding land is predominately countryside with open fields with the exception of the neighbouring farm and residential property.

Topography

2.3 The topography of the land is relevant being located on the side of a hill as access is ascends a narrow farm track. The land within also has a couple of levels with the lowest to the west and is where the parking and entrance is proposed, the holiday let stretches east up along the increased topography.

3.0 Statutory Protection and Guidance

Tree Preservation Orders & Conservation Area Designations

3.1 Local authorities reserve the right to create Tree Preservation Orders (TPO) to protect the amenity value conferred to a location by a tree or group of trees. Where a TPO is in place the lopping, topping, felling, uprooting or wilful damage is prohibited. Failure to comply may lead to prosecution or large fines. Work on a TPO'd tree requires permission from the local authority.

3.2 On this site there are no ancient woodland or veteran trees.

3.3 It is not uncommon for a mature tree with cavities or hollows to be a habitat for roosting bats. Bats are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), as well as under Schedule 2 of the Conservation of Species and Habitats Regulations 2010 and it is therefore an offence to cause damage to a bat roost.

Bats as a Protected Species

3.4 It is not uncommon for a mature tree with cavities or hollows to be a habitat for roosting bats. Bats are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), as well as under Schedule 2 of the Conservation of Species and Habitats Regulations 2010 and it is therefore an offence to cause damage to a bat roost.

3.5 A preliminary ground level appraisal of the wildlife habitat value of each tree was undertaken as part of the arboricultural survey and no trees were observed as having feature to support roosting bats.

3.6 Should the presence of a bat roost be suspected whilst undertaking works on site then all operations must cease until a licensed bat handler or ecologist can provide advice.

Birds as a Protected Species

3.7 Nesting birds frequently use trees for nesting. They are protected under the Wildlife and Countryside act 1981 (as amended). This makes it an offence to intentionally or recklessly damage or destroy an active birds nest.

3.8 It is recommended that all tree work is carried out outside the bird nesting season which is March to August. If this is not possible then a detailed inspection of each tree should be undertaken by a suitably qualified ecologist prior to any tree work. Should an active nest be found then any work likely to affect the nest must be halted until the nest becomes inactive.

4.0 Tree Population

4.1 The tree and hedge population varies in this category recognition under BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations*. The below chart does not allow for a true representation of the tree population. This is because much of this data has been collected from small to large sized trees with a hedge lining the northern boundary, four large trees make up a great percentage of the upper canopy area.

Figure 1. Breakdown of BS5837 categorisation of all trees surveyed.Category

4.2 The boundary hedging and a couple of sycamore trees have been categorised as medium quality. The greatest number of trees make up the orchard to the east. The breakdown of quantities for each retention category are also shown below in Figure 1. A cascade chart explaining the process used to reach these categorisations can be found in Appendix C – Tree Categorisation Chart.

4.4 A summary of the trees in each of the four categories is given below in **Table 1**, for ease of reference.

Tree Category	Trees Numbers
A	-
B	T2, H5, T11, H15
C	T1, T3, T4, T6, H7, G9, G10, T12, G13, T14
U	G8, S16, S17, S18

5.0 Impacts of the Proposed Development

5.1 The creation of the holiday let and the associated car parking along a section of the northern boundary have below ground constraints. A section of the hawthorn hedge to the north may be partially removed to widen the existing entrance, the levelling of the car park may come close the the RPA of the hedge.

The tree work as recommended in Appendix A – Tree Schedule would see the removal of several trees from the southern boundary as they have a limited longevity due to their mechanically weak structures. 5.2 Table 1 shows the effects of the proposal on the trees of the BS 5837 quality categorisation.

Table 1. Summary of trees to be retained and removed.

Tree Category	Trees to be retained	Trees to be removed
A	-	-
B	T2, H5, T11, H15	H7 (Partial)
C	T1, T3, H7, G9, G10, T14	T4, T6, T12, G13
U	-	G8, S16, S17, S18

6.0 Tree Protection Requirements

6.1 The following information sets out the primary consideration for determining the requirement for tree protective measures and with the assessment impact of the development. The excavation for the resurfacing of the car park is close to H7, hand tools only can be used to create a level surface. Then the exposed soil profile should be protected with a permeable membrane or hessian cloth. The trees and hedges highlighted for retention will require protection by Heras fencing. However, additional safety measures to prevent indirect damage from building materials is required as they are the greatest threat to the green infrastructure with solid contamination from storm water.

Root Protection Areas

6.2 The BS5837:2012 RPA is calculated using the trees Diameter at Breast Height (DBH) at 1.5m and represents the minimum area around each tree that must be left undisturbed to ensure its longevity. Tree roots can be found twice the width of the crown and beyond depending on the tree species and its environment. Most tree roots are found in the top 600mm of soil and most fine roots that absorb water and nutrients are located at the top horizon of soil profile. These near surface tree roots allow the tree to breath and oxygenate. The tree roots can extend well beyond the recommend distances within BS5837:2012 and they may not follow the typical circular area centred from the trees stem.

Ground Contamination

6.3 Storage areas for liquids such as fuels, oil or paint should not be located within 10m of any tree due to the risk of soil contamination caused by accidental spillages and storm water.

Underground Utilities

6.4 Detailed drawings have been provided and therefore the position of tree roots can be gauged,

however no information on the location of new services has been provided. Where the installation of services within the RPA of retained trees is unavoidable, appropriate methods will be required to ensure the safe long term longevity of the trees. This process will require additional consultation with a suitably qualified and experienced Arboricultural Consultant

Ground Level Changes

6.5 Any changes to the landscape and its levels can have major implication on the longevity and health of a tree. It is essential the trees are allowed to have a breathable surface allowing for the continuous gaseous exchange of the trees root system.

6.6 **Drainage & Storm Water Run-off Issues**

Drainage and storm water run-off requires addressing to prevent excessive and/or polluted run-off into the rooting area of trees to be retained. The installation of sandbags can greatly reduce any storm water from washing away building materials onto the permeable surface of the tree roots.

Soil Compaction

6.7 It is imperative the surface of the soil be protected from compaction from plant machinery and/ or machinery. This can create a capping effect on the surface which can stop the tree root from oxygenating and preventing any precipitation.

7.0 Recommendations

7.1 The proposed development of the holiday let will take place within the existing residential garden. The garden comprises of predominately fruit trees which makes up an orchard within the proposed area with a few other small trees located within. Whilst they provide partial screening from the neighbouring residential building they are generally of low quality due to their individual poor form. Most of these are retainable and should be able to coexist with the proposed development, however, they need to be pruned to maintain shape and form. Some of the other individual trees providing some greening, however, it is recommended that the area be landscaped with trees and shrubs with longevity.

7.2 Whilst a neighbouring large mature ash was observed as having large amounts deadwood and crown decline there is a high possibility this and the other are infected, it is important all ash trees are monitored for ADB infection. Once identified then they cannot realistically be retained and it is recommended that they be removed before their vascular system completely shuts down resulting in very dangerous brittle trees. Several issues arise from this with the first being the risk and danger of failure due to the brittle nature of the tree. This leads to other issues such as increased costs for removal and making these trees safe, also the increased danger and the high demand for qualified, insured and experienced tree surgeons. It is however, essential that the identification of the infection of the disease has been made by a suitably qualified and experience arboricultural consultant before any ash are removed. It is anticipated that a small percentage of ash trees will be resistant to the disease and they will be needed in order to help re-establish the species back into the British Isles. All tree work must adhere to BS3998 2010 Tree Work - Recommendations. This must be carried out by qualified, experienced and insured Arborists.

8.0 Tree Protection Plan

8.1 The crossover between the parking area the hedges RPA needs to be protected from damage. Firstly, H7's RPA is a Construction Exclusion Zone (CEZ) where hand tools only will be allow to excavate the existing surfaces to allow the installation of a permeable surface protecting the roots and soil profile from desiccation and being washed away. The distance of protection required from the stem of H7 is 1.2m, which is where the fencing is to be installed. Due to the remaining RPA being so close it is recommended that a specialised temporary surface be laid beneath the Heras fencing preventing contamination of the soil profile. The excavation of the RPA of H5 and H7 can be carried out with hand tools only. The mapping and distances can be seen in Drawing 2 - The Proposed Development, Tree Removal, Root Protection Areas and Protective Fencing.

8.2 The protection from building materials and specifically cement is critical. This can occur from storm water washing building materials from the existing tarmac onto the exposed permeable surface and leaching through the soil profile potentially contaminating the growing medium for existing, future plantings and pollution of the waterways. The trees and hedges to be retained will require protection, this will require the storage of cement and other such pollutants off site and away from the permeable soil profile. If pesticides are to be used in the clearing of vegetation from the soil profile, then these must be species specific so as not to damage the trees and hedges to be retained.

8.3 If pesticides are to be used in the clearing of vegetation from the soil profile, then these must be species specific so as not to damage the trees and hedges to be retained. This may help to highlight the RPA's of the trees (Drip line) so that they maybe marked out prior to the commencement of th construction and machinery work.

9.0 Tree Constraints

9.1 Hedges along the northern boundary are close to the development of the driveway/parking spaces which have potential below ground constraints. The permeable sloping terrain ascends towards the hedge and the eastern boundaries, it is in these areas where the RPA of the hedge and other trees maybe found.

9.2 Several trees along the southern boundary have above and below ground constraints due to their RPA's close proximity or their canopies are leaning towards the proposed development. These are generally of low quality and their removal would eradicate any constraints.

- The roots of trees and hedges to be retained are a no dig CEZ and cannot be excavated.
- Protection from building materials leaching into the soil area all along the boundaries must be carried out prior to any construction.

9.2 The current site has ample room to the west to house construction materials and could be used for storage. This is the greatest threat to the remaining trees and hedges through the leaching of building material such as cement. Normally a minimum of 10m distance from vegetation is required and will increase if on an upper surface such as this.

9.3 No underground services can pass through the RPA of trees or hedges to be retained.

10.0 Arboricultural Method Statement (AMS)

10.1 The AMS has been written as guidance on how the construction has to be carried out with regards to the protection of the green infrastructure. It is imperative that this is carried out correctly.

An overview of Sequence of Operations

10.2 In overview, it is necessary to undertake the following sequence of operations in relation to arboricultural input for development operations.

1. Method Statement approved by the LPA.
2. Undertake tree works as recommended in Appendix A - Tree Schedule.
3. Instalment of the tree protection measures involving the installation of sandbags along the northern boundary.
4. Pre commencement meeting confirming the fencing to specification.
5. Demolition and construction of the development.
6. Removal of tree protection.

Specific Sequence of Operations

10.3 The following timeline table informs the key principles for development operations proceeding in relation to arboricultural requirements conditioned as part of this method statement. The action and timescales within this table must be adhered to in oder to discharge the arboricultural method statement planning condition for this site.

The soil profile of the retained trees and hedges are a no dig CEZ and cannot be excavated into with the exception of 50mm to allow for the installation of the Cellular Confinement System and with hand tools only. There is a 8.7m RPA around T3 ash and a 6m RPA around T7 cherry and T11 alder, these have the greatest below ground constraints.

The precise time and order of some of the development operations may need to be changed due to site specific operational requirements, yet any operations that may affect the trees on the site must be done so under arboricultural supervision by a suitably qualified and experience arboricultural consultant.

10.4 This should be read in conjunction with the Arboricultural Implications Assessment (AIS) and the Tree Protection Plan.

Please refer to this link for guidance on any of the above;
https://www.barrelltreecare.co.uk/resources/technical-guidance/

Sequence of Operations		
Stages	**Action**	**Arboricultural Input**
1 Approval	This AMS is submitted to and approved in writing by the LPA	If necessary, liaise with contractor and LPA to discuss methodologies detailed
2 Tree Works	The tree removal should be carried out as the first operation on site and in accordance with Appendix A - Tree Schedule	Review the tree work requirements with the tree contractor. If necessary liaise with the contractor on site during tree work
3 Tree Protection	Installing the tree protective measures will take place prior to any storage of plant, materials and machinery	Protection is currently provided with the existing fencing, however, the prevention from soil contamination should be in the form of sand bags being placed along the northern boundary
4 Site Meeting	Following installation of tree protective measures, the LPA shall be invited to inspect the fencing and discuss any other site operations that have implication for the trees	Meeting with the representative of the LPA and the site manager. Alternatively, contractor can confirm the fencing and tree works are as specified by taking photographs of the tree protection measures
5 Construction	Undertake the construction of the new development	If necessary liaise with the local authority and the site foreman to ensure any issues are adequately resolved
6 Site Finishing	Removal of the tree protection measures must only be undertaken when all site traffic and machinery has left the site	If acceptable to the LPA the contractor can take photos of the site to give to the LPA to gain approval for the removal of protective fencing

11.0 Caveats and Limitations

11.1 This survey was carried out from ground level. No aerial inspection was undertaken and, as such, this report can only identify defects clearly visible from the ground. A VTA (Visual Tree Assessment) is a level two arboricultural tree survey. This normally involves a full 360 degree visual of the buttress, stem and crown of the tree. While every attempt has been made to provide a realistic and accurate assessment of the trees' condition at the time of inspection, it may have not been appropriate, or possible, to view all parts or all sides of every tree to fulfil the assessment criteria of a risk assessment.

11.2 No tree is entirely safe given the possibility that exceptionally strong winds could damage or uproot even a mechanically 'perfect' specimen. It is therefore usually accepted that hazards are only recognisable from distinct defects or from other failure-prone characteristics of the tree or the site.

11.3 Underground services were not confirmed around any of the trees surveyed. The potential influences of trees upon building or other structures resulting from the effects of trees upon shrinkable load-bearing soils or the effect of incremental root growth are specifically excluded from this report.

11.4 The report reflects the tree stock as found on the day surveyed. Change of ground levels, soil conditions, surrounding tree cover or land use, or any ground works within the root zone of any tree may invalidate the content of this report. No root zone excavation was undertaken.

11.5 Change of circumstance as a result of unusual weather conditions may invalidate the content of this report. It is recommended that trees should be reassessed after strong gale, 39 – 46 mph wind Beaufort scale 8.

11.6 The content of this report is valid for 12 months from the cover date. Any works recommended for beyond this time period are based on expectations rather than in response to currently identified defects. Trees should have their condition re-inspected by a qualified arboricultural consultant within three years of this report being written.