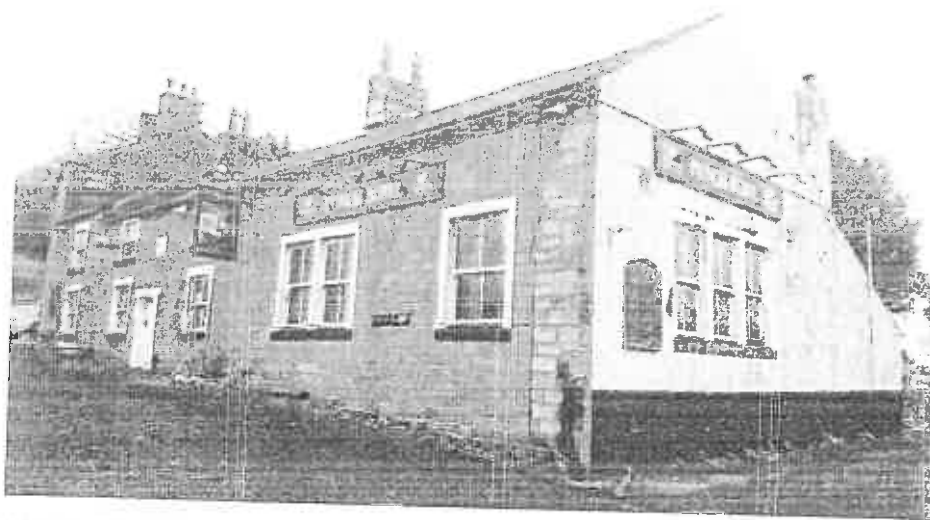


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STAGE 1
ARBORICULTURAL REPORT WITH
TREE CONSTRAINTS PLAN
&
ARBORICULTURAL IMPACT ASSESSMENT
TO AID IN THE
SITE DESIGN / LAYOUT



CONSULTING ARBORIST: **GARY MARSDEN**
FDSc Arb M.Arbor.A

ARBORICULTURAL REPORT PREPARED FOR: **Andrew Donelan**

SITE ADDRESS:
The Punchbowl Inn,
Longridge Road,
Hurst Green,
Clitheroe,
BB7 9QW



Licensed User



**SMARTER
PLANNING
CHAMPION**





Validation statement for council registration of this report

In accordance with the *Department for Communities and Local Government circular 02/2008* and its guidance document *Validation of Planning Applications*, this report fulfils the recommended national list criteria for tree survey/arboricultural information. More specifically, it contains the following:

- A full tree survey compliant to the requirements of ***BS5837; (2012) Trees in relation to design, demolition and construction - Recommendations*** undertaken by a qualified arboriculturist.
- A plan to a suitable scale with a north point and showing tree survey information, retention categorisation and root protection areas, tree height and ultimate tree height.
- An assessment of the arboricultural impacts of development detailing trees to be retained / removed and appropriate protection measures.



Summary

I have inspected all the relevant trees that could influence the development of this site and listed there details within this report, a minimum root protection zone is indicated around each tree, as no construction would be allowed within the area of any retained tree unless there are specifically approved construction methods to overcome such issues.

This information can now be used to assist the architect in producing there design while still protecting any retained trees in compliance with BS 5837:2012 *Trees in relation to design, demolition and construction - Recommendations*.

This proposal will result in the loss of some low category trees, these are not worthy of retention due to structural defects or poor form with limited potential for long term retention.

The construction activity and proposed changes may adversely affect further trees if appropriate protective measures are not taken. However, if adequate precautions to protect the retained trees are specified and implemented through an arboricultural method statement, the development proposal will have no adverse impact on the contribution of trees to local amenity or character.

Gary Marsden FDS Arb M.Arbor.A



1.0 Introduction

1.1 Instruction:

I am instructed by Andrew Donelan (referred to as the 'client' from here on) to inspect any significant trees that could have an effect on the development at The Punchbowl Inn, Longridge Road, Hurst Green, Clitheroe, BB7 9QW and to provide the following information to aid in the design of the site:

- A schedule of the relevant trees to include basic data and a condition assessment as per section 4.4.2.5 of BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations.
- A tree constraints map showing: root protection areas, above ground constraints, crown spreads, retention categories, tree height.

From this data I have also produced an Arboricultural Impact Assessment (AIA) based on the initial tree survey, any designs of the site by the architect.

1.2 Purpose of this report:

This reports primary purpose is to allow the architect to design relevant buildings / site layout while taking into account any impact this will have on the retained trees on site.

Within this planning process, this report will be available for inspection by people other than tree experts so the information is presented to be helpful to those without a detailed knowledge of the subject.

1.3 Qualifications and experience:

I have based this report on my site observations and any provided information and I have come to conclusions in the light of my experience. I have experience and qualifications in arboriculture, and include a summary in Appendix 'A'.

1.4 Documents and information provided:

My client or architect provided me with copies of the following documents or information:

- Their e-mail of instruction outlining the situation;
- Their email commissioning this report and agreeing to the T&C and cost.
- Drawings - SK.32.3E - Site plan as proposed and SK.32.2 - Site plan as existing

1.5 Relevant background information:

Prior to the site survey, my client advised me that:

- The council have requested a tree survey as part of the planning application to develop this site.
- The proposal is to install 20x holiday lodges on the site and retain the existing building as the proposed site drawing.

1.6 Scope of this report:

This report is only concerned with the prominent trees within or around the proximity of the site that could influence the development of this site. It takes no account of any trees outside this remit or any building structural issues. It includes a preliminary assessment based on the site visit and any documents provided, listed in 1.4 above.



The survey is based upon information that was available at the time of the inspection. Further inspections are necessary over time to give a fuller picture of the health of trees.

1.7 Mapping:

Site plans showing all tree locations and any relevant details can be found in Appendix 'D'

1.8 Justification of work:

Where management action / tree surgery are recommended, this is based on maximizing the tree's safe useful life expectancy (SULE), given its current situation or the safety of persons and surrounding targets.

2.0 Limitations

- 2.1 The inspection was carried out from ground level only and relates only to arboricultural aspects. All visual observations and recommendations, relate, to the condition of the trees on the day of the survey. The trees have been assessed with the aid of a Nylon mallet for the purpose of detecting changes in resonance which may indicate that further investigation is required. Any unusual weather conditions, changes in soil, soil levels and changes to surroundings may result in a dramatic change in the trees health.
- 2.2 Due to the changing nature of trees and other site circumstances, this report and any recommendations made are limited to a 12-month period. Any alteration to the site and any development proposals could change the current circumstances and may invalidate this report and any recommendations made.
- 2.3 Trees are dynamic structures that can never be guaranteed 100% safe: even in good condition they can suffer damage under average conditions. Regular inspections can help to identify potential problems before they become acute.
- 2.4 A lack of recommended work does not imply that a tree is safe and likewise it should not be implied that a tree would be made safe following the completion of any recommended work.
- 2.5 This report does not consider the structural condition of existing buildings, nor the impact of existing trees on their foundations. If there are concerns over such matters the advice of a structural engineer should be sought.

3.0 Site visit and observations.

3.1 Site visit:

- I carried out an unaccompanied site survey on 24th January 2016.
- All my observations were from ground level without detailed investigations and I measured all dimensions unless otherwise indicated.
- I did not have access to trees outside the client's boundaries and have confined any observations to what was visible from within the client's property, any dimensions have been estimated.
- The weather at the time of inspection was dull, still and drizzling with average visibility.

3.2 Brief site description:

- Longridge Road is located in the rural area of Hurst Green



- The Punchbowl Inn is on the southern side of the road and surrounded by rural farmland.
- The property consists of a large public house that is currently unoccupied and falling into a state of disrepair. The pub is set to the front of an expanse of land.
- The surrounding topography is relatively flat and the site is not particularly exposed
- Utility services were observed on site: these were, high voltage power lines running approximately north to south and a type of buried tank within the grounds towards the south of the boundary.
- There is a stream that runs to the west of the site that appears to be the site boundary line.
- No visual inspections of any services were made below ground level.
- There is no known history on this site either personal nor from a third party.
- When I arrived on site to carry out the survey there had previously been site activity in clearing / scraping the ground vegetation as there was only exposed soil with track and excavator marks in the ground. This work has been undertaken around and under the canopies of the trees and some damage has occurred to the top surface area of the rooting system of the trees.

3.3 Identification and location of the trees:

I have illustrated the locations of the significant trees on the digital maps included in Appendix 'D'. These plans are for illustrative purposes only and it should not be used for directly scaling measurements. All the relevant information on it is contained within this report and the provided documents.

3.4 Soil assessment

An assessment of the underlying bedrock profile has been undertaken using the British Geological Survey web site (<http://mapapps2.bgs.ac.uk/geoindex/home.html>) to determine as far as reasonably practicable the presence of any shrinkable clay soils and there possible implications on the design of the development.

The bedrock formation found on or around this site is:

- WARLEY WISE GRIT – SANDSTONE

The superficial deposits found on or around this site are:

- TILL, DEVENSIAN - DIAMICTON

From this data it has been determined that the soil is not shrinkable. If a more detailed analysis is required, then this must be undertaken by an expert in soil analysis with access to a specialist laboratory.

3.5 Restrictions:

The Arboricultural Officers details are listed below:

David Hewitt,
Arboricultural Planning and Tree Preservation Officer,
Ribble Valley Borough Council
Council Offices,
Church Walk,
Clitheroe,
Lancashire,
BB7 2RA



Tel: 01200 414505,

E-mail: david.hewitt@oblovalley.co.uk

Tree Preservation Orders (TPO)

A tree preservation order, referred to as a 'TPO', is an order made by a local planning authority ('LPA') in respect of trees or woodlands.

The principal effect of a TPO is to prohibit the: Cutting down, uprooting, topping, lopping, wilful damage, or wilful destruction of trees without the LPAs consent. The cutting of roots is potentially damaging and so, in the Secretary of State's view, requires the LPAs consent.

Anyone who, in contravention of a TPO, wilfully damages a tree in a way that is likely to destroy it is guilty of an offence. Anyone found guilty of this offence is liable, if convicted in the Magistrates Court, to a fine of up to £20,000. In serious cases a person may be committed for trial in the Crown Court and, if convicted, is liable to an unlimited fine.

Conservation Areas (CA)

Conservation Areas are areas of special architectural or historical interest with a character or appearance that is desirable to preserve or enhance. Trees may often contribute to the special character of the area.

All trees in a Conservation Area are subject to controls which enable the LPA to protect the special character of the area created by the trees. If trees have a specific Tree Preservation Order (TPO) on them, then the normal Tree Preservation Order controls apply.

You must give the LPA 6 weeks' notice, in writing, of your intention to do any work to trees in a Conservation Area. You must not carry out any work during the six week period, which starts from the date of receipt of your notification by the council, unless you receive written permission to do so.

Work which is not exempt and is carried out without formal notification or within the six week period without the written consent of the council is illegal. The LPA may prosecute offenders and fines of up to £20,000 for each tree may be imposed by the Magistrates Court in the event of offenders being convicted of an offence. If proceedings are instituted in the Crown Court fines are unlimited. There is a duty to replace any tree removed without permission.

It is strongly advised that prior to undertaking work to tree/s an up to date check is carried out to establish if a TPO / CA is in force on the tree/s.

The information in this report is correct at the time of writing but it is possible that conditions could have been applied to the tree/s after this report was written.

3.5 Collection of basic data:

I inspected each tree and have indicated the numbering on the site map enclosed in Appendix 'D'. I identified obvious hedges and groups where appropriate. For each individual tree, group or hedge, I collected information on species, height, diameter, maturity and potential for contribution to amenity in a development context. I have recorded this information in the tree schedule included as Appendix 'E'.



I stress that my inspection was of a preliminary nature and did not involve any climbing or detailed investigation beyond what was visible from accessible points at ground level. This data collection is fully compliant with the BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations* set out in subsection 4.4.2.5 of the standard.

4.0 Tree Categorisation

4.0 Guidance:

BS 5837:2012 is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 30 April 2012 and supersedes BS 5837:2005, which has been withdrawn.

BS 5837:2012 provides recommendations and guidance for arboriculturists, architects, builders, engineers, and landscape architects. It is also expected to be of interest to land managers, contractors, planners, statutory undertakers, surveyors, and all others interested in harmony between trees and development in its broadest sense.

The category for the tree is ascertained by following the guidelines in the BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations* "Cascade chart for tree quality assessment" included with the TCP tree schedule in Appendix 'F'. A brief summary of each category is outlined as follows:

4.1 Category 'A' trees:

This category signifies trees that are of a high quality and value with an estimated remaining life expectancy of at least 40 years. Occasionally a veteran tree, although not in the best condition may warrant this category because of its wildlife and cultural value.

It is essential to retain these trees. The design of the proposed development should take into account the retention of category 'A' trees. A design layout that suggests the removal of category 'A' trees has a high increased risk of planning refusal.

4.2 Category 'B' trees:

This category signifies trees that are of a moderate quality and value with an estimated remaining life expectancy of at least 20 years.

It is important to retain these trees. The design of the proposed development, where feasibly possible, should take into account the retention of category 'B' trees. A design layout that suggests the removal of category 'B' trees has an increased risk of planning refusal.

4.3 Category 'C' trees:

This category signifies trees that are of low quality and value with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150mm.

They are generally trees that could remain and are expected to have a safe useful life expectancy of between 10 and 20 years if no development were to occur. However, because of their generally low quality it would not be a great loss if they had to be removed if they were a significant constraint to the design or construction process of the proposed development. Particular attention is drawn to the phrase "significant constraint".



4.4 Category 'U' trees:

This category signifies trees that are in such a condition that they cannot be realistically be retained as living trees in the context of the current land use for longer than 10 years and which should, in the current context, be removed for reasons of sound arboricultural management.

5.0 Root Protection Areas (RPAs)

5.1 Why do we need root protection areas?

Approximately eighty percent of a tree's roots are in the top 600 mm of soil. Therefore any changes in this vital environment including: ground level, soil compaction, physical damage to roots, moisture or levels of contaminants can have a dramatic effect on the health of a tree. At deeper strata alterations in water table and routing of services can cause detrimental, long term, effects.

5.2 Method of calculations:

The area of roots that need to be protected around a tree to try and ensure that it does not suffer damage during the construction process is called the Root Protection Area (RPA).

The RPA is calculated using a formula based upon the diameter of the tree at 1.5 metres high for single stem trees and near ground level for multi-stem trees. At this stage it is generally represented by a circle centred on the trees stem. A small percentage lost from the outside of the circle may be tolerated by the tree or offset in another direction. However, where there are significant existing constraints additional root loss in close proximity near to a tree's stem is likely to have a detrimental effect on the trees health or even complete failure of the root plate.

5.3 How to use RPAs:

The RPAs for the trees in question are indicated in Appendix 'E'. At this point the RPA is only indicative and intended to assist in preparing the design layout.

5.4 Optimum RPA calculation:

If the site conditions prevail it is recommended to increase the size of the RPA to accommodate as much potential rooting area as possible, this it will reduce any conflict with the tree and minimise the chance of rejection / conflict with the planning application / Local Planning Authority.

6.0 Pre Development Appraisal

6.1 Category 'U' trees (Removal):

There are three groups and one single tree that are recommended for removal. The reasons for removal are due to poor form, suppression or dieback within the tree, details for each tree can be found in the survey data.

6.2 Category 'A' trees:

There is 1 tree that should be retained due to the physiological and structural strengths of the trees and the contribution to the amenity value that they make now and there potential in the future.



6.3 Category 'B' trees:

There are 3 trees that should be retained if feasibly possible in line with the proposed development. Each tree should be assessed as to the impact it has on the development and recommendations drawn from this as to whether removal is an option.

6.4 Category 'C' trees:

There are 2 trees that should be retained but removal is an option if the tree / trees impinge on the proposed development.

6.5 Groups:

There are no groups of trees that should be retained that are located on or bordering this site.

6.6 Conflict:

Looking at the proposed site layout in drawing SK.32.3E there are several potential issues with the layout and the location of the trees that should be retained on site, these issues are:

- The turnaround road to the north east of the site and cabin 15 is located within the root protection area of T001 Copper Beech, as there has already been damage to the trees rooting system further site activity in this area should be avoided. If cabin 15 was removed and the turnaround moved further south this would reduce any perceived conflict. If retained appropriate ground protection measures would need to be implemented to allow the road to be laid, e.g., anti-compaction cellular confinement system
- Cabins 7 – 8 – 9 are also located within the root protection areas of trees T004 and T005, again engineering solutions will be needed to allow the cabins to be located there, this should involve constriction above ground level without soil stripping or trenching.

6.7 Tree works:

The management options noted in the survey data should be followed so to keep a maintained tree stock on and around this development site, particularly giving clearance from properties and over any adopted roads or footpaths.

The following Arboricultural Implications assessment is based on the existing proposed site layout.



7.0 Arboricultural Implications Assessment

7.1 Summary of the impact on trees:

I have assessed the impact of the proposal on the trees / groups by the extent of disturbance in and around the RPAs and the current and future canopy height and spread. All the trees / groups that may be affected by the development proposal are listed in table 1.

Table 1: Summary of the trees / groups that may be affected by the development on this site if the current proposed plans are implemented.

Impact	Reason	Important trees		Unimportant trees	
		A	B	C	U
Trees / groups to be removed	Building construction, new surfacing, tree quality and / or, proximity	#	#	T002 T003	T006 Group 1a Group 1b Group 1c
Trees / groups that may be adversely effected by the tree canopy or through disturbance to RPAs	Removal of existing surfacing / structures / landscaping and or installation of new surfacing / structures / landscaping	T001	T004 T005	#	#
*note - Any trees / groups not mentioned above will be unaffected by this development proposal					

7.2 Category A and B trees to be removed:

There are no category 'A' trees located on or immediately adjacent to the site that are to be removed.

There are no category 'B' trees located on or immediately adjacent to the site that are to be removed.

7.3 Category A and B trees that may be adversely affected through RPA disturbance:

One category 'A' tree could be adversely affected by the installation of new road system and the construction of cabin 15

Two category 'B' trees could be adversely affected by the construction of the cabins 7 – 8 – 9.

These trees are considered important for retention and have potential to contribute to amenity, so any adverse impacts on them should be minimised. I have reviewed the situation carefully and my experience is that trees T004 and T005 could be successfully retained without any adverse effects if appropriate protective measures are properly specified and controlled through a detailed arboricultural method statement. If the design remains unchanged additional close monitoring will be required to ensure that no further damage is carried out to the mature copper beech T001, this will include arboricultural site management at all of the key stages of construction around this area in addition to a



method statement and protective ground measures.

7.4 Category C trees to be lost:

The two trees to be removed are category 'C' due to their poor form and considered to have limited potential for long term retention. As such it is considered to be unworthy of influencing any layout. I believe it is not important in the overall planning context and its loss should not influence the determination of this application.

7.5 Retained category C trees that may be adversely affected through RPA disturbance:

There are no category 'C' trees located on or immediately adjacent to the site that may be adversely affected through RPA disturbance.

7.6 Presence of Tree Preservation Orders (TPO) or Conservation Area Designation:

The presence of a Tree Preservation Order / CA / other constraints, has not been confirmed or denied regarding the trees within the proposed development site at the time of writing this report. It is recommended that this is checked before any tree works are undertaken to avoid any conflict with the local authority.

7.7 Effects of new buildings on amenity value on or near the site:

The effect of the new construction on this site have been assessed and have been found not to have any significant effect on the amenity value of the remaining trees on site

7.8 Below ground constraints:

No construction of foundations or the installations of services are to take place within any Root Protection Area (RPA).

The turnaround road near T001 is to be constructed without soil compaction or soil stripping and laid in accordance with an Arboricultural Method Statement.

Any holiday cabins that are within the RPA of the trees area to be constructed also without soil compaction or soil stripping and laid in accordance with an Arboricultural Method Statement, predominantly by using engineering solutions to overcome the issues of foundations.

7.9 Above ground constraints:

Pruning works, predominantly crown lifting of the canopy of T001 will be required to enable the construction of the turnaround and cabin 15. All tree surgery works will be undertaken prior to construction activity and in accordance with the Arboricultural Method Statement.

7.10 Construction processes of the proposed development:

Development processes that lead to soil compaction in tree rooting zones and physical damage to trees can adversely affect long-term tree health. This can lead to unnecessary tree loss if not controlled properly on site during the demolition of a building and then the construction phases that follow.

No access to the RPAs of any retained tree will be permitted before or during construction activity unless the RPA falls within an already existing tarmac road. Therefore there is no risk of machinery causing damage to roots, trunks and low branches. When the construction of the turnaround and cabin 15 are planned additional site monitoring and ground protection will be required. This work will be constructed



without soil compaction or soil stripping and laid in accordance with the Arboricultural Method Statement section.

The processes of construction are highly unlikely to have a detrimental effect upon the health of the retained trees assuming recommendations made in this report are adhered to at all times by the contractors e.g. the positioning of a stout fence between the retained trees construction activities is placed prior to commencement of works and remains intact and in position throughout the duration of the construction activities.

7.11 Modifications proposed to accommodate trees:

At present there are no modifications proposed.

7.12 Infrastructure requirements – highway visibility, lighting, CCTV, services etc:

The installation of services within the rooting zones of trees can have a large detrimental impact on the long-term survival of retained trees leading to their unnecessary loss or root failure in high winds.

No services are to be installed within any tree RPA.

The trees on site do not have any impact on highway visibility.

Undisclosed sighting of above ground services, CCTV cameras, electrical sub-stations, refuse stores, lighting and other infrastructure requirements can lead to unnecessary pruning of tree crowns or root loss during or post development. There are no such developments planned to take place adjacent or within the RPA of any retained trees.

7.13 Mitigating tree loss / new planting:

As yet there are no proposed replacement trees to be planted. If required as part of planing conditions there are areas of the site that can be planted with trees. Any replacement trees would be selected and located allowing development into a mature tree without the conflict between tree, building or surrounding features.

7.14 Proximity of trees to structures:

With the impact of trees on buildings, and vice versa, allowances for future growth have all been considered in the sighting of the new dwellings. Tree size, future growth, light / shading, leaf and fruit nuisance etc have received due attention and are not considered to be a significant issue.

8.0 Proposals to mitigate any impact

8.1 Protection of retained trees:

The successful retention of trees depends on the protection and the administrative procedures to ensure those protective measures remain in place whilst there is an unacceptable risk of damage. An effective means of doing this is through an arboricultural method statement that can be specifically referred to in a planning condition. An arboricultural method statement for this site can be written at an additional commission.



8.2 New planting:

No replanting will be required on this site at present.

8.3 Summary of the impact on local amenity:

This proposal will result in the loss of some low category trees, these are not worthy of retention due to structural defects or poor form with limited potential for long term retention.

The construction activity and proposed changes may adversely affect further trees if appropriate protective measures are not taken. However, if adequate precautions to protect the retained trees are specified and implemented through an arboricultural method statement, the development proposal will have no adverse impact on the contribution of trees to local amenity or character.

9.0 Other Considerations

9.1 Trees subject to statutory controls:

If any trees are covered by a tree preservation order or located in a conservation area, it will be necessary to consult the council before any pruning works other than certain exemptions can be carried out. The works specified above are necessary for reasonable management and should be acceptable to the council. However, tree owners should appreciate that they may take an alternative point of view and have the option to refuse consent.

9.2 Trees outside the property boundaries:

Any trees that are located in adjacent properties are effectively out of the control of the client / land owner. It will not be possible to easily carry out any recommended works without the full co-operation of the tree owners. The implications of non cooperation require legal interpretation and are beyond the scope of this report. By common law, branches from trees on adjacent properties extending over boundaries can be pruned back to the boundary line without the permission of the owners. However, the material belongs to the tree owner and the same guidance on statutory controls applies as discussed in 9.1 above.

9.3 Development within the rooting area:

The zone of influence has been determined using the calculation outlined in Table 2, of section 5.2.2 of *BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations*. This calculation utilises the diameter of the trunk, at a height of 1.5m from the surrounding ground level; and calculates the root protection area (RPA) by multiplying the diameter by a value of 12; the result is then used to calculate the total area (m²) of the RPA. The calculations are illustrated in the tree survey data in Appendix 'E'.

9.4 Construction Exclusion Zone:

The values indicate the area of soil around the base of the tree to be retained undisturbed. This area should be protected with vertical barriers and considered sacrosanct. Signs should be erected on the fencing to indicate that the area is a Construction Exclusion Zone (CEZ).

9.5 Arboricultural Method Statement:

A detailed Arboricultural Method Statement (AMS), outlining the different stages and progression of construction is available as a further commission. This process should be



undertaken once the final decision has been made on the proposed structure (if requested by the Local Planning Authority (LPA)).

9.6 Implementation of works:

All tree works should be carried out to BS 3998 *Recommendations for Tree Work* as modified by more recent research. It is advisable to select a contractor from the local authority list and preferably one approved by the Arboricultural Association. Their Register of Contractors is available free from:

Arboricultural Association
The Malthouse,
Stroud Green,
Standish,
Stonehouse,
Gloucestershire
GL10 3DL, UK
Tel: +44 (0)1242 522152
Email: admin@trees.org.uk
Website: www.trees.org.uk/contractors.htm
Fax: +44 (0)1242 57766

9.7 Local Arboricultural Contractors:

If requested I can provide a list of reputable arboricultural contractors that have carried out work on previous projects.

9.8 Safety:

Tree works can be a hazardous profession, so it is important that all operatives have the necessary and relevant training, health and safety policy and valid forms of insurance.

9.9 Statutory wildlife obligations:

The Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000, provide statutory protection to birds, bats and other species that inhabit trees. All tree work operations are covered by these provisions and advice from an ecologist must be obtained before undertaking any works that might constitute an offence.

9.10 Future considerations:

Any remaining trees should be inspected on a regular basis by a qualified arboricultural consultant.

9.11 Replanting:

Any trees on this site that are protected by a preservation order and are being recommended for removal, the appropriate replanting of replacement trees will be needed as a condition of the council granting permission for these trees being felled. This should be incorporated into the landscaping plans at the design stage and followed through after building work is completed.

10.0 Bibliography / References

BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations. – BSI Publication



BS 3998: 2010 Tree work – Recommendations – BSI Publication

[N1]NATIONAL JOINT UTILITIES GROUP (NJUG). *Guidelines for the planning, installation and maintenance of utility apparatus in proximity to trees.*

Volume 4, issue 2. London: NJUG, 2007.

Arboricultural Practice Note (APN) 12 – Through the trees to Development –
Derek Patch and Ben Holding – Arboricultural Advisory and Information Service

Principles of Tree Hazard Assessment and Management – David Lonsdale



APPENDIX 'A'

Brief qualifications and experience of Gary Marsden:

Qualifications:

- National Certificate in Arboriculture – August 1998
- The Leonard Cheshire Home Award, Practical Award – September 1998
- NVQ in Amenity Horticulture Level 1 – November 2003
- Foundation Degree in Science - Arboriculture - June 2005
- BTEC Higher National Diploma in Arboriculture – June 2005
- Certified Expert Witness by Cardiff Law School / Bond Solon – December 2011

Practical experience:

After qualifying at NC level in arboriculture I gained full time employment with Blackburn with Darwen Borough Council as an Arborist / Climber (September 1998) where I gained a wide range of practical Arboricultural experience ranging from pruning, dismantling and planting.

In January 2004 I was promoted to Team Leader Arborist where I developed my skills in Arboriculture, leadership, organisation and prioritising workloads.

In August 2005 I was promoted to 'Arboricultural Officer' this job involves:

- Health and Safety of all Arboricultural aspects
- Inspection and scheduling of tree complaints
- Tree surveys and report writing
- Staff management

In July 2008 I set up my own tree consultancy company – GM Tree Consultants – which I am constantly developing and evolving.

Continuing professional development:

As a conscious effort to stay in touch with the progression in modern techniques and practices in the arboricultural industry, I attend seminars, receive regular arboricultural literature and maintain membership of professional bodies, examples of which are listed below:

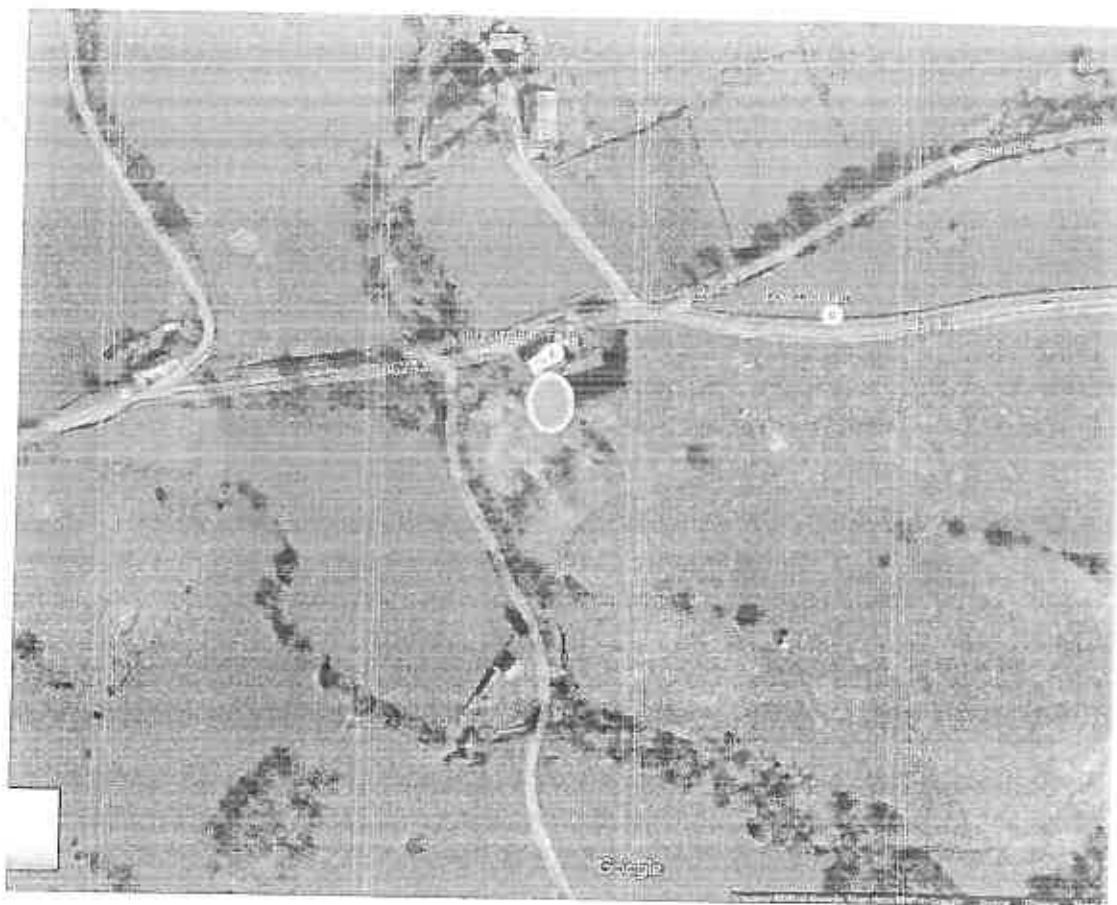
- Arboricultural Association Professional Member since November 2006
- Professional Member of the Consulting Arborist Society since May 2009
- Quantified Tree Risk Assessment licensed user since October 2008
- Attendance of Arboricultural Association annual conferences
- Attendance of specialist short courses in relation to specific fields in arboriculture including: Tree Preservation Orders, Subsidence and mortgage reports, Planning legislation and Tree inspection methods and skills.
- Accredited as an Expert Witness by Cardiff University Law School / Bond Solon since December 2011

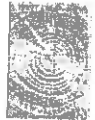
A detailed breakdown of qualifications and continued professional development training is available; please contact me directly for this information if requested.



APPENDIX 'B'

Site Location aerial photo:





APPENDIX 'C'

Tree survey Index

Tree Locations:

This has been measured using a laser distancing device with a digital compass and plotted on the site plan using tree management software. The accuracy given for the tree stem location is $\pm 1m$.

Tree Number:

Each surveyed feature is assigned an individual number:

e.g. – Tree A072014013 is made up of:

- 'A' – this represents the tablet pc that was used to record the data
- '07' – this is the month that the inspection was recorded
- '20' – the day of the month when the tree was recorded
- '14' – the hour in the day when the tree was recorded
- '013' – the tree number recorded in that hour of the day (when the hour changes this resets to 001)

Alternatively; each surveyed feature is assigned a number prefixed by a 'T' for individual trees, 'G' for groups of trees and 'H' for hedgerows. It is used to locate the tree in the data survey and the relevant position on the plan.

Species:

The species identification is based on visual observations and the common English name of what the tree appeared to be is listed first. In some instances, it may be difficult to quickly and accurately identify a particular tree without further detailed investigations. The botanical name is followed by the abbreviation sp if only the genus is known.

Measured (M) or Estimated (#)

Trees that have been accurately measured are indicated with an 'm'. Trees that are off site or otherwise inaccessible where accurate data cannot be recovered; these trees are indicated with '#'.

Number of stems:

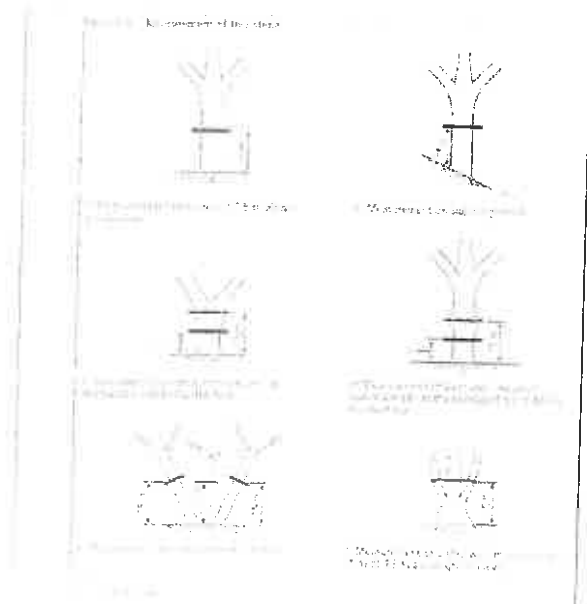
The number of main stems of each individual tree.

Stem Diameter:

These figures relate to stem diameter in millimetres at 1.5m above ground level. This is accurately measured using a girthing tape, unless access is restricted.

Diameters of single stem trees on level ground are measured in accordance with Figure C.1a).
Diameters of other commonly encountered tree stems are measured in accordance with Figures C.1b) to C.1f).

NOTE - The thick black line indicates where the measurement is taken.





Root Protection Area:

This is the minimum area in m² which should be left undisturbed around each retained tree.

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Annex D
(informative)

Root protection area

The RPA's given in Table D.1 should be used for single stem trees and the equivalent equivalent combined stem diameter for multi-stemmed trees.

Table D.1 Root protection area

Stem diameter (mm)	Radius of protection area (m)	Area (m ²)	Stem diameter (mm)	Radius of protection area (m)	Area (m ²)
75	0.75	1.77	225	2.25	15.9
100	1.00	3.14	250	2.50	19.6
125	1.25	4.91	275	2.75	23.8
150	1.50	7.07	300	3.00	28.3
175	1.75	9.62	325	3.25	33.2
200	2.00	12.57	350	3.50	38.5
225	2.25	15.9	375	3.75	44.2
250	2.50	19.6	400	4.00	50.3
275	2.75	23.8	425	4.25	56.8
300	3.00	28.3	450	4.50	63.6
325	3.25	33.2	475	4.75	70.7
350	3.50	38.5	500	5.00	78.5
375	3.75	44.2	525	5.25	86.6
400	4.00	50.3	550	5.50	95.0
425	4.25	56.8	575	5.75	103.7
450	4.50	63.6	600	6.00	113.1
475	4.75	70.7	625	6.25	122.7
500	5.00	78.5	650	6.50	132.7
525	5.25	86.6			
550	5.50	95.0			
575	5.75	103.7			
600	6.00	113.1			
625	6.25	122.7			
650	6.50	132.7			

NOTE: These figures are derived from the following formulae: $A = \pi R^2$

Height:

Overall height of tree recorded in meters. Height is recorded using a digital clinometer.

Potential Height of species:

The expected mature height of the tree as a 'species'.

Potential Spread of species:

The expected mature spread of the tree as a 'species'.

Height of first branch and direction:

Existing height in metres of the first significant branch above ground level and the direction of growth in relation to the 4 cardinal points (NSEW).

Height of canopy above ground level:

Existing height in meters of the canopy above ground level.

Branch Spread:

This is measured in meters taken at the four cardinal points (NSEW) to derive an accurate representation of the crown.

Life stages:

Described as young, semi mature, early mature, mature, over-mature / veteran.

Physiological Condition:

Described as good, fair, poor, dead and notes as needed.

Structural Condition:

Described as good, fair, poor, dead and notes as needed.



Preliminary management recommendations:

Practical arboricultural operations that are suggested and described as needed.

Remaining Contribution:

Estimated remaining contribution in years: e.g. <10, 10+, 20+, 30+, 40+. This is based upon Jeremy Barrels' system of SULE (Safe Useful Life Expectancy).

Tree Retention Category Grading:

U or A to C category grading as referenced from BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations. (see Table 1 in appendix 'F')



APPENDIX 'D'

Inserted site maps showing tree locations and all other relevant details:

Tree Constraints Plan

101.2m

A012414001 Copper Beech A1
Ht: 20 m Diam: 1,235 mm
RPA_Rad: 14.70 m

former punch bowl pub 1a U
Ht: 18 m Diam: 285 mm
RPA_Rad: 3.30 m

former punch bowl pub 1b U
Ht: 18 m Diam: 285 mm
RPA_Rad: 3.30 m

T003 Ash C1
Ht: 15 m Diam: 520 mm
RPA_Rad: 6.30 m

T002 Ash C1
Ht: 18 m Diam: 555 mm
RPA_Rad: 6.60 m

T004 Sycamore B1
Ht: 16 m Diam: 520 mm
RPA_Rad: 6.30 m

T005 Sycamore B1
Ht: 16 m Diam: 555 mm
RPA_Rad: 6.60 m

T007 Ash B1
Ht: 20 m Diam: 600 mm
RPA_Rad: 7.20 m

former punch bowl pub 1c U
Ht: 18 m Diam: 600 mm
RPA_Rad: 7.20 m

T006 Ash U
Ht: 14 m Diam: 515 mm
RPA_Rad: 6.30 m

Punch Bowl
(FH)

Pond

LB

BS5037 Tree Retention Values
1 - Mainly Arboricultural Value
2 - Mainly Landscaping Value
3 - Mainly Cultural Value
(Use conservation value)

BS5037 Tree Retention Category
Category A
Category B
Category C
Category U
Desirable to retain in long term
May be desirable to retain in medium term
Could retain in short term
Unsuitable for retention, Remove

Tree Key

Tree Label Key

Tree Protection Plan

101.2m

LB

Pond

T007 Ash B1
Ht: 20 m Diam: 600 mm
RPA_Rad: 7.20 m

former punch bowl pub 1c U
Ht: 18 m Diam: 600 mm
RPA_Rad: 7.20 m

T006 Ash U
Ht: 14 m Diam: 515 mm
RPA_Rad: 6.30 m

A012414001 Copper Beech A1
Ht: 20 m Diam: 1,235 mm
RPA_Rad: 14.70 m

former punch bowl pub 1a U
Ht: 18 m Diam: 285 mm
RPA_Rad: 3.30 m

former punch bowl pub 1b U
Ht: 18 m Diam: 285 mm
RPA_Rad: 3.30 m

T003 Ash C1
Ht: 15 m Diam: 520 mm
RPA_Rad: 6.30 m

T002 Ash C1
Ht: 16 m Diam: 555 mm
RPA_Rad: 6.60 m

T004 Sycamore B1
Ht: 16 m Diam: 520 mm
RPA_Rad: 6.30 m

T005 Sycamore B1
Ht: 16 m Diam: 555 mm
RPA_Rad: 6.60 m

Punch Bowl
(PH)

Site: Unpublished (local) Plant Germ. Collection
Site Ref: 070

Scale: 80% February 2016
Drawing: 10/01/2016

BS5837 Tree Retention Category

Category A: Desirable to retain in long term
Category B: May be desirable to retain in medium term
Category C: Could retain in short term
Category U: Unsuitable for retention, Remove

BS5837 Tree Retention Value

1 - Mainly Arboricultural Value
2 - Mainly Landscaping Value
3 - Mainly Cultural Value
(inc. conservation value)

Tree Retention Key

○ Trees to Retain
○ Trees to Remove

Tree Key

○ Root Protection Area
○ Tree Crown
○ Tree Trunk

Tree Label Key

Number, Name, Species, Height, Diameter, RPA Radius

Operational Key

1 - Retain, 2 - Remove, 3 - Prune, 4 - Felling

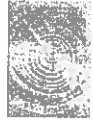


APPENDIX 'E'

Tree survey data inserted including the calculations for the root protection zones:

Job Ref: 0740		Survey Date: 24/01/2016	Site:	former Punch Bowl Pub	Surveyor: Gary Marsden	BS-5837 (2012) TREE SURVEY DATA		Tel: 077 6166 7384 www.gintreeconsultants.co.uk		GM TREE CONSULTANTS											
Tree Number	Species (common)	measured (m) or estimated (g)	Number of stems	Single Trunk dia. @ 1.3m (mm)	Second trunk	third trunk	fourth trunk	fifth trunk	multiple averages	calculated DBH (m)	calculated CPA (m)	Height (m)	Height of breast branch (m) & direction (N/E/W)	Height of canopy above GL (m)	Physiological Condition		Structural Condition	Prohibitory management recommendations to status RULE 16 at least 10 years	REMAINING CONTRIBUTION	TREE QUALITY ASSESSMENT	
															Abr.	comments (- and +)				CAT. 1-2-3	VALUE 1-2-3
1	copper beech	m	1	1235	#	#	#	#	#	1225	14.70	20	8e	2	good	the tree was not in leaf at the time of inspection - this is normal for this species - there was no visual indicators to suggest that the tree would not come into leaf in the coming growing season - a follow up assessment should be done at this time	fair	the upper canopy of the tree looks in very good condition - prior to this survey site activity has occurred that has stripped the top layer of soil away - this has exposed and damaged the trees rooting area with potential impact on the trees longterm health and stability.	40+	2	1
2	ash	m	1	565	#	#	#	#	#	550	6.60	18	2n	2	good	the tree was not in leaf at the time of inspection - this is normal for this species - there was no visual indicators to suggest that the tree would not come into leaf in the coming growing season - a follow up assessment should be done at this time	fair	suppressed canopy and a leaning stem to the south - minor form	20+	2	
3	ash	m	1	520	#	#	#	#	#	525	6.30	15	3s	3	good	the tree was not in leaf at the time of inspection - this is normal for this species - there was no visual indicators to suggest that the tree would not come into leaf in the coming growing season - a follow up assessment should be done at this time	fair	poor form with only a partial canopy	20+	2	
4	sycamore	m	1	520	#	#	#	#	#	525	6.30	16	4n	4	good	the tree was not in leaf at the time of inspection - this is normal for this species - there was no visual indicators to suggest that the tree would not come into leaf in the coming growing season - a follow up assessment should be done at this time	good	good form with no significant visual defects	40+	2	
5	sycamore	m	1	555	#	#	#	#	#	550	6.60	16	4n	4	good	the tree was not in leaf at the time of inspection - this is normal for this species - there was no visual indicators to suggest that the tree would not come into leaf in the coming growing season - a follow up assessment should be done at this time	good	good form with no significant visual defects	40+	2	
6	ash	m	1	615	#	#	#	#	#	625	6.30	14	4n	4	good	the tree was not in leaf at the time of inspection - this is normal for this species - there was no visual indicators to suggest that the tree would not come into leaf in the coming growing season - a follow up assessment should be done at this time	poor	damaged canopy and poor form	<10	#	
7	copper beech	#	1	600	#	#	#	#	#	600	7.20	20	8e	7	good	the tree was not in leaf at the time of inspection - this is normal for this species - there was no visual indicators to suggest that the tree would not come into leaf in the coming growing season - a follow up assessment should be done at this time	fair	this tree has a natural lean to the east and is suppressed	20+	1	

Job Ref: 0740		Survey Date: 24/01/2016	Site:	former Punch Bowl Pub	Surveyor: Gary Marsden	BS-5837 (2012) TREE SURVEY DATA		Tel: 077 6106 7334 www.gmtreeconsultants.co.uk		GM TREE CONSULTANTS																	
Tree number	Species (common)	measured (m) or estimated (s)	Number of stems	Single Trunk dia. @ 1.5m (mm)	second trunk	third trunk	fourth trunk	fifth trunk	multiple averages	calculated DBH (m)	calculated RPA (m)	Height (m)	Height of first branch (m) & direction (N/SEW)	Height of canopy above g.c. (m)	C/N NORTH (m)	C/N EAST (m)	C/N SOUTH (m)	C/N WEST (m)	Life Stage y - sm - em - m - v - cm	Abn.	Physiological Condition comments (s and s)	Abn.	Structural C-m 'Non comment' (s and s)	Preliminary management recommendations to ensure SILE is at least 10 years	REMAINING CONTRIBUTION 10 - 19 + 20 + 30 + 40 +	TREE QUALITY ASSESSMENT CAT. u - a - b - c VALUE 1 - 2 - 3	
g1a	conifer	m	25	285	#	#	#	#	#	275	3.30	18	3m	3	2	2	2	2	em	good	no significant visual issues	fair	the lower section of canopy has been removed leaving poor pruning wounds and an unbalanced crown - the trees now have poor form and limited merits for retention	remove	<10	u	#
g1b	conifer	m	25	285	#	#	#	#	#	275	3.30	18	3m	3	2	2	2	2	em	good	no significant visual issues	fair	the lower section of canopy has been removed leaving poor pruning wounds and an unbalanced crown - the trees now have poor form and limited merits for retention	remove	<10	u	#
g1c	mixed broadleaf	#	4	600	#	#	#	#	#	600	7.20	18	3m	2	5	5	5	5	sm	good	the tree was not in leaf at the time of inspection - this is normal for this species - there was no visual indicators to suggest that the tree would not come into leaf in the coming growing season - a follow up assessment should be done at this time	poor	this group of trees have grown on the edge of the overhanging - the trees all have varying degrees of decay / dysfunction that warrant their removal - there is a foreseeable risk of failure as whole trees	remove	<10	u	#



APPENDIX 'F'

Cascade chart showing tree retention categories exerted from:
BS 5837:2012 Trees in relation to design, demolition and construction - Recommendations.

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BS 5837:2012

Table 1 Cascade chart for tree quality assessment

Criteria (including subcategories where appropriate)	
Trees unsuitable for retention (see Page 6)	
Category U Trees in situ in a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	- Trees that have a serious, irreparable structural defect, such that their only long-term value is as a specimen tree. - including those that will become unstable after removal of other categories' trees from within their canopy. - Trees that are dead or are showing signs of significant, immediate, and irreversible decline. - Trees infected with pathogens of significance to the health and/or safety of other trees within a site boundary. - quality trees suppressing adjacent trees or being of better quality. NOTE: Category U trees can have existing or potential conservation value which may be retained in situ.
1 Mainly arboreal qualities	
2 Mainly landscape qualities	
3 Mainly cultural qualities	
Trees to be considered for retention	
Category A Trees of high quality with an estimated remaining life expectancy of at least 50 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 arboreal features (e.g. the dominant avenue principal trees within an avenue). Trees, groups or woodlands of particular visual importance as arboreal features in the landscape. Trees, groups or woodlands of particular cultural importance.
Category B Trees of moderate quality with an estimated remaining life expectancy of at least 20 years	Trees that might be included in Category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsymmetrical pest management and storm damage), such that they are unlikely to be suitable for retention for beyond 20 years, or trees lacking the special quality necessary to merit the Category A designation. Trees present in numbers, usually grouped as groups or woodlands, such that they attract a high or collective rating even though they are not individually or trees on their own as individuals but situated so as to make a visual contribution to the wider locality.
Category C Trees of low quality with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 110 mm	Unremarkable trees of very poor 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 a high quality of water collecting landscape value, and/or trees offering low or only temporary transient landscape benefits.



I hope that this report provides all the necessary information, but should any further advice be needed please do not hesitate to contact me.

Signed

Gary Marsden FDS Arb M.Arbor.A
Professional Member - Arboricultural Association (AA)
Professional Member - Consulting Arborist Society (CAS)

For and on behalf of **GM TREE CONSULTANTS**

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