

**Tree Survey, Categorisation, Constraints
Plan & Arboricultural Method Statement**

in accordance with
BS: 5837 2005

At

HEOL GLYNDWR, COEDPOETH
WREXHAM

Dated November 2009

For

soltysbrewster
CONSULTING



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1.0. Executive Summary

1.1. An arboricultural method statement is required to discharge Planning Condition 17 of the planning approval for the construction of 6no. dwellings at Heol Glyndwr, Coedpoeth, Wrexham. This report fulfils the requirements of Condition 17 in terms of compliance with BS 5837:2005.

1.2. The report assesses the health, condition and amenity value of the trees generally within and adjacent to the proposed site and provides a root protection area for each tree, which is in effect a construction exclusion zone and a constraint to the development for those trees should they be retained. It allows for their consideration throughout the design phase, ensuring their basic needs and requirements are identified. The Root Protection Area provided takes account of the physical and structural requirements for each tree and provides a method for protecting them during the construction phase. This involves the erection of robust barrier fencing to exclude the root protection area from construction activities.

1.4. Any tree considered unsuitable for retention within the proposed development is recommended for felling. If a tree may be retained although requires remedial works this will be highlighted under the column headed recommended action.



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2.0. Introduction, Qualifications and Experience

2.1. I, Stephen James Ambler, a Professional Arboriculturalist, hold the following relevant qualifications: -

- a) Lantra Award, Ref: HO00074336 85978 for undertaking the training course "Bats and Arboriculture - A Guide for Practitioners" developed by The Bat Conservation Trust
- b) Certificate in Arboriculture (Royal Forestry Society)
- c) Professional Technicians Certificate in Arboriculture (Arboricultural Association)
- d) Professional Diploma in Arboriculture (Royal Forestry Society)
- e) Associate Member of the Institute of Chartered Foresters
- f) I am a Fellow Member of the Arboricultural Association.

2.2. I have 29 years experience working within the arboricultural industry with 19 years of that in Local Government as Principal Arboricultural and Woodlands Officer. My Consultancy Practice was established during 1999 and was expanded in 2006 where my Sons became involved in the launch of a specialist 'Tree Management Unit'. This addition has increased the level of service offered under the revised name of Steve Ambler Arboricultural Consultancy and Sons Tree Specialists.

2.3. I carried out a tree inspection from ground level on the 5th of November 2009. This inspection proceeds in line with the basic recommendations described within the British Standard 'Guide for Trees in Relation to Construction Recommendations' (BS 5837: 2005) under the heading; Tree Survey, Tree Categorisation and Tree Constraints Plan. This information is required from the outset in the development planning process. (See appendices Planning Flowchart)

2.4. The boundary surrounding the proposed development site and identified by plan attached hereto, in which the trees are contained and form the contents of this report, is hereafter referred to as 'the site'.



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2.5. The survey involved a visual inspection or landscape assessment of trees with a stem diameter of above 75-mm when measured at a height of 1.5-m above ground level. The visual inspection consisted of viewing each tree from close quarters and from a distance where possible. The inspection is carried out from ground level and the trees were not climbed.

3.0. The Background, Scope and Purpose of this Report

3.1. The purpose of this report is to consider the trees on this site, their overall perceived importance within the landscape based on their size and position, and to assess their condition, identifying those suitable for retention. The layout of this report encompasses the recommendations of the revised 'British Standard Guide for Trees in Relation to Construction Recommendations' (BS 5837: 2005) whereby it recommends; ***"the land survey should include all existing trees on the site and adjacent to the site within a distance equal to 12 times their stem diameter from the boundary. The trees shall be categorised for their importance and offered as a constraint to the development"***. The suggested planning approach is relayed in the Flow Diagram Sequence, as Figure 1, in the Appendices. The constraints that any retained tree will pose to this development is either plotted on a Tree Constraints Plan, offered as a radial measurement as the Root Protection Area within the final column of the Tables headed as RPA (Item 8.0), or in tabular format on the site drawing.

3.2. Where any tree is retained, the RPA is essential and becomes, in effect, a construction exclusion zone (there are exceptions when working under an 'Approved' Arboricultural Method Statement (AMS)). An RPA should be respected during the initial design period and throughout the construction works until completion. The RPA represents a radial distance measured from the centre of the trunk (bole) of the tree. Whilst this is not a full condition survey, the tree survey may record details of each tree and may identify any immediately obvious works that may be considered appropriate to increase safety, where prudent to do so, through applying sound arboricultural management.

3.2. In considering the 'Planning Flow Chart' in the Appendices (text coloured blue), it becomes apparent the British Standard advocates further information will be necessary on a Tree Protection Plan (TPP), construction exclusion zones, protective barriers, ground protection, service position, special engineering requirements, pre construction tree works, approved tree removals, access facilitation pruning and landscaping. The above is usually presented as an Arboricultural Method Statement (AMS) which should be undertaken by an 'Arboriculturalist'



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and is usually a requirement of the LPA following their acceptance of the Phase One completion of the tree survey, categorisation and constraint plans.

3.3. The report sets out a way forward for the design element to proceed whilst considering the needs and requirements of those trees in adequate condition and with adequate landscape value.

4.0. Site Description

4.1. The site under investigation is at Heol Glyndwr, Coedpoeth in Wrexham accessed off Heol Maelor Road (A 525) turning into Heol Glyndwr. It is situated opposite what appears to be a newly constructed school and the site inspected is predominantly level and currently maintained as grass. It is presently an amenity area containing a scatter of low value, young and semi mature deciduous trees.

4.2. The eastern boundary of the site comprises an open grown Holly (*Ilex aquifolium*) hedge for some distance and is approximately 4 metres tall. After some distance, it changes to a close-boarded 1.7-m high fence contained with concrete posts. The southernmost boundary borders the rear gardens of residential properties along Heol Maelor Road and varies in its management as the entire boundary consists of informal and formal hedging of varying species and height. Leyland cypress (*x Cupressocyparis leylandii*), golden privet (*Ligustrum ovalifolium*), Holly (*Ilex aquifolium*) makes up the majority and it varies in height from perhaps 1.7 – 4.0 metres.

4.3. The western end of this boundary is outgrown for perhaps 10 metres or so and contains elderberry (*Sambucus nigra*) and Blackthorn (*Prunus spinosa*). This hedge and the presence of 2 trees within the gardens identified as T 1 & T 2 may provide a small constraint to the development. The northern boundary is open to the public footpath and highway of Heol Glyndwr.

5.0. Tree Survey, Tree Survey Plan

5.1. This tree survey is independent of any specific design for development and will include all trees including any that have been missed during the land survey including those outside of the site boundary where they are felt any development may affect them. The quality and value of each tree or group of trees is recorded and allocated to one of four



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categories each of which are explained under the heading 'Tree Categorisation', (see below Item 6.3).

5.2. Each tree or group of trees is identified on the attached plan. Large trees are sometimes identified on site using a metal numbered tag attached to the trunk of a tree at 1.5-2.0 metres above ground level. A tabular format later in the report (Item 8.0) records the details of each tree against the numbered tag.

5.3. Although this is not a condition survey, the general condition of the trees may be recorded and management recommendations may be made, particularly where safety issues may be blatantly obvious from this brief, ground level inspection. However this is not always the case and any observations made here result from a somewhat cursory inspection, and the findings are preliminary only. Tree/s should be subject to regular 'tree condition inspections' and appropriate management and a full tree condition inspection is strongly recommended and particularly on completion of any development.

5.4. The survey involved recording each tree or group within the site boundary with a stem diameter of above 75-mm when measured at a height of 1.5-m above ground level. In addition, trees over this size growing on land adjacent to the site, which are at or within a distance equal to 12 times their stem diameter from the boundary (or 10 times the stem diameter in the case of multi-stemmed trees). The visual assessment was somewhat cursory and the trees were not climbed during this ground level inspection.

6.0. Tree Categorisation

6.1. The trees within this report are categorised in a way that should help assist those concerned with tree and/or landscape management, within local government, to help form a balanced judgement. Where development is to occur and where trees occupy a site, it may help in the decision-making process as to which trees are appropriate for retention and which are not. The primary purpose of this report is to provide an assessment of the trees and to determine their suitability for retention in any proposed development. A subsequent report, see 'Planning Flow Chart' (Figure 1, Appendices), will provide advice on protecting those trees deemed suitable for retention, during the development phase.



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6.2. The Tree Categories used in evaluating the trees on this site are reproduced below. This categorisation is also included in the tree data schedules and by colour code on the attached plan.

6.3. Tree Categories

Category R (Coloured Dark Red on Plan)

Those in poor condition that any existing value would be lost in ten years and which should, in the current context, be removed for reasons of sound arboricultural management.

Criteria

- ⌚ Trees that have a serious irremediable structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other R Category trees.
- ⌚ Trees that are dead or otherwise showing signs of significant, immediate and irreversible overall decline.
- ⌚ Trees affected with pathogens of significance to health and/or safety of other nearby trees or very low quality trees suppressing adjacent trees of better quality

Note; a bat survey may be necessary on trees such as these and particularly where those trees exhibit signs of potential roost site habitat. A Bat survey and mitigation may be necessary (e.g., bat boxes)

Category A (Colour Green on Plan)

Those of high quality and value;

In such condition as to be able to make a substantial contribution (a minimum of 40 years is suggested)

- **Sub Category 1 Mainly Arboricultural Values**

Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)

- **Sub Category 2 Mainly Landscape Values**

Trees, groups or woodlands which 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 (e.g. avenues or other arboricultural features assessed as groups)

- **Sub Category 3 Mainly Cultural Values, including Conservation**

Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)

Category B (Colour mid-blue on Plan)

Those of moderate quality and value.

Those in such a conditions to make a significant contribution (a minimum of 20 years is suggested)

- **Sub Category 1 Mainly Arboricultural Values**

Trees that might be included in the high category, but are downgraded because of impaired condition (e.g. presence or remediable defects including unsympathetic past management and minor storm damage)



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- **Sub Category 2 Mainly Landscape Values**

Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi formal arboricultural features (e.g. trees of moderate quality within an avenue that includes better, A category specimens), or trees situated mainly internally to the site, therefore having little impact on the wider locality.

- **Sub Category 3 Mainly Cultural Values, including Conservation**

Trees with clearly identifiable conservation or other cultural benefits.

Category C (Coloured Grey on Plan)

Those of low quality and value.

Currently in adequate condition to remain until new planting could be established (a minimum of 10 years), or young trees with a stem diameter below 150-mm.

- **Sub Category 1 Mainly Arboricultural Values**

Trees not qualifying in higher categories

- **Sub Category 2 Mainly Landscape Values**

Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value and/or trees offering low or only temporary screening benefit.

- **Sub Category 3 Mainly Cultural Values, including Conservation**

Trees with very limited or other cultural benefits.

NOTE:

- (1) Category C trees will usually not be retained where they would impose significant constraints on development although young trees with a stem diameter below 150-mm should be considered for relocation.
- (2) Where remaining contributory years score is provided within the 'Findings', and where further investigative works are required, these scores are preliminary only and based on an incomplete inspection.

6.4. Additional Considerations

6.5. Particular care is needed when considering the quality and value category of young trees, especially where they occur as individual specimens. Where these are less than 150 mm stem diameter (at 1.5 m above adjacent ground level), it may be relatively straightforward to relocate them within the site (e.g. using a tree spade) or to replace them with similar replacement trees. Whilst the presence of young trees of good form and vitality is



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generally desirable (i.e. those trees which have the potential to develop into quality mature specimens), they should not be allowed to dominate site layout considerations. When evaluating the merits of retaining and/or relocating such trees, a comparison between the costs of the various options should be the main determining factor. However, they should be categorized as C grade trees.

7.0. Tree Constraints Plan

7.1. The constraints that trees of category A, B, or C pose on the development layout are plotted on the tree constraints plan as a '**Root Protection Area (RPA)**'. This protection area is calculated on the physical and structural needs of the tree/s and takes account of the requirements of the root system. Table 2 of the British Standard is used to achieve the required distances and is essentially a 12 x multiplier of the stem diameter when measured at a height of 1.5-metres above ground level or 10 x in the case of multi stemmed trees. The precise distances required by the RPA is either marked on the plan as a solid line or provided in a tabular format on the drawing which is provided in metres as a radial measurement when measured from the centre of the tree's trunk. Other considerations are provided below along with supporting comments.

7.2. Proposed new planting, if necessary, may be marked on the plan as a constraint and soil should be protected from compaction where this is to occur.

8.0 Schedule of Findings



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Tree Number	Species	Height	Branch Spread				Effective Diameter	Crown Clearance	Age class	Physiological	Structural Condition	Notes	Remaining Contribution Years	Category	Habitat Potential	Protection Radius in m
Hedge 1	Holly (Ilex aquifolium)	6	-	-	-	-	100	0.0	Y/EM	G	G	An informal and outgrown hedge which is attractive and serves as a landscape screen to an existing residential development. It sits at the eastern boundary.	10-20	B	L	1.20
T 1	Ash (Fraxinus excelsior)	4	0.5	0.5	1.0	0.5	20	2.0	Y	G	G	A recently planted young, small and insignificant tree.	20-40	C	L	1.00
942	Common Lime (Tilia x europaea)	4	2.5	2	4	1	200	2	Y	P	P	A poor specimen with lesions on the main stem caused by strimmer damage and vandals stripping bark from the main stem	-	R	L	2.40
943	Norway maple (Acer platanoides)	7	3	4	5	4	300	2.5	EM	G	G	A young tree of reasonable form and condition	20-40	C	L	3.60
944	Wild cherry (Prunus avium)	8	4	5	6	5	400	3	EM	G	G	A reasonable tree	10-20	C	L	4.80
T 2	Chamaecyparis lawsoniana 'Robusta Glauca'	8	2	2	2	2	250 est	0.0	EM	G	G	This tree is situated within the rear garden of the neighbouring residence.	10-20	C	L	3.00



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Tree Number	Species	Height	Branch Spread				Effective Diameter	Crown Clearance	Age class	Physiological	Structural Condition	Notes	Remaining Contribution in Years	Category	Habitat Potential	Protection Radius in M
T 3	Leyland cypress (x Cupressocyparis leylandii)	8	2	2	2	2	250 est	0.0	EM	G	G	Also on neighbouring land	10-20	C	L	3.00
945	Prunus 'Amanogawa'	6	0.5	0.5	0.5	0.5	220	3.0	EM	F	F	Fastigiated tree with a narrow crown and little amenity value.	10	C	L	2.64
946	Prunus 'Amanogawa'	6	0.5	0.5	0.5	0.5	220	3.0	EM	F	F	Fastigiated tree with a narrow crown and little amenity value.	10	C	L	2.64
Hedge 2	Golden privet (Ligustrum ovalifolium), Holly (Ilex aquifolium) Golden Lawson Cypress (Chamaecyparis 'Winston)	1.5 - 4.0	-	-	-	-	150 est	0.0	EM	G	G	A hedge of varying proportions and quality forming the rear boundary to neighbouring properties.	10-20	C	L	1.80



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	Churchill'																
Tree Number	Species	Height	Branch Spread				Effective Diameter	Crown Clearance	Age class	Physiological	Structural Condition	Notes	Remaining Contribution	Category	Habitat Potential	Protection Radius in M	
Group 1	Holly (Ilex aquifolium), elderberry (Sambucus nigra), Blackthorn (Prunus spinosa)	6	-	-	-	-	200	0.0	EM	F	F	An outgrown portion of the hedge providing some screening to the neighbouring residential properties	10-20	C	L	2.40	



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9.0. Arboricultural Method Statement and Detail for No Dig Construction

9.1. Once the layout proposals have been finalised, the British Standard recommends a Tree Protection Plan (TPP) is prepared (see planning flow chart in the 'Appendices'). The tree or trees for retention are clearly marked on the accompanying plan with a solid line and identified on site by a metal numbered tag, attached to the trunk of the tree at a height of 1.5-2.0-metres above ground level; this number is also produced on the plan

9.2. If any Trees are to be removed

They are identified on the accompanying plan with a dashed outline. IN THIS INSTANCE, NO MATURE TREES ARE TO BE REMOVED TO SUPPORT THE CONSTRUCTION OF THIS DEVELOPMENT.

9.3. The Root Protection Area (RPA)

This is established using Table 2 from the standard which essentially is a 12 x multiplier of the stem diameter when measured at a height of 1.5-metres above ground level or 10 x in the case of multi stemmed trees. Why trees require protection is explained below (item 9.4). The precise distances required by each tree as a Root Protection Area is indicated either on the attached plan or within tables below. These distance essentially provide an Exclusion Zone, (there are exceptions). The erection of a substantial temporary barrier is required at these distances and the type of suitable fencing is indicated in Figure Two. These measurements or distances are provided in metres as a radial measurement, unless otherwise stated, which is taken from the centre of the trunk.

9.4. Why Trees Require Protection.

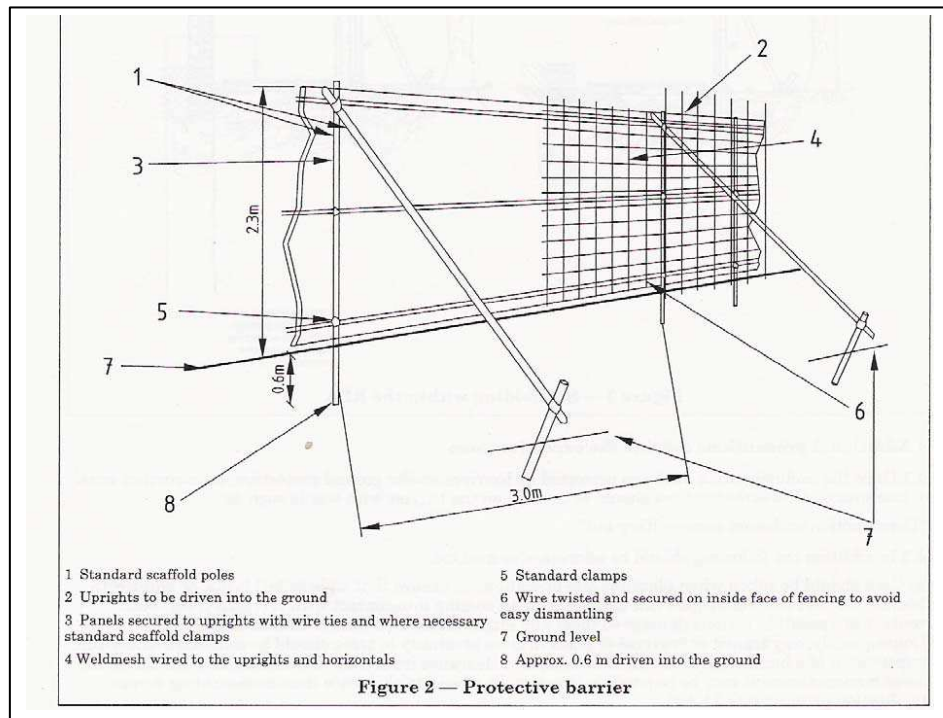
The part of the tree most susceptible to damage is the root system which, because it is not immediately visible, is frequently ignored, although the trunk and branches are also vulnerable. Damage or death of the root system will affect the health, growth, vigour, life expectancy and safety of the rest of the tree. This is because the majority of the tree's root system is found within the top 600-mm of the soil, extending radially for a distance frequently in excess of the tree's height. All the structural roots are found within the top 300-mm of the soil (Dobson M. *Tree Root Systems*).



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Figure Two



9.4. The parts of the root system which are active in water and nutrient uptake are very fine, typically less the 0.5 mm diameter. It is essential that conditions in the soil remain conducive to healthy growth of these fine roots so that water and nutrients necessary for healthy tree growth can be absorbed. In addition to water and nutrients, roots, in order to function, require oxygen from the soil for the purpose of respiration. Diffusion between the soil and the atmosphere is essential. Anything, which disturbs this balance, will affect the condition of the root system and in turn the health of the tree. Compaction of the soil within the rooting zone of a tree will create long term damage through preventing respiration and the percolation of water. Vehicles tracking over the soil are responsible for such damage and such action must be avoided.



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9.5. Once the RPA is established, a '**Protective Barrier**' is to be erected at the appropriate distances. Protective barriers to the specification set out in figure two shall be erected at the locations shown on the Tree Protection Plan, prior to development commencing and will only be dismantled with the written approval of the Local Planning Authority. Such fencing if robust and fit for purpose will offset injury or damage occurring to the critically functioning roots of the retained tree from construction injury. When considering the activities of a construction site it is necessary to use robust materials that can withstand the day to day working practices through the duration of the development. A suitable 'Protective Barrier' is recommended within BS; 5837 which is reproduced in below (Figure two). The barrier should consist of a scaffold framework comprising a vertical and horizontal framework, well braced to resist impact, with vertical tubes spaced at a maximum interval of 3-metres. Onto this, weld mesh panels should be securely fixed with wire or scaffold clamps. This type of fencing is preferred because it is readily available, resistant to impact, can be re-used and enables unhindered inspections of the protected area. (Weldmesh panels on rubber or concrete feet are not resistant to impact and must not be used).

9.6. Additional precautions outside the exclusion zone

9.6.1. Once the exclusion zone has been protected by barriers and/or ground protection, construction work can commence. All weather notices should be erected on the barrier with words such as: "Construction Exclusion Zone — Keep out". A qualified and experienced arboriculturist will visit the development site to check the tree protection barriers on a monthly basis until the protection fencing is removed. The results of these visits will be submitted in writing to the LPAs Arboricultural Officer.

9.6.2. In addition, the following should be addressed or avoided.

a) Care should be taken when planning site operations to ensure that wide or tall loads, or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. Such contact can result in serious damage to them and might make their safe retention impossible.

Consequently, any transit or traverse of plant in close proximity to trees should be conducted under the supervision of a Banksman to ensure that adequate clearance from trees is maintained at all times. In some circumstances it may be impossible to maintain adequate clearance thus necessitating access facilitation pruning.



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- b) Material which will contaminate the soil, e.g. concrete mixings, diesel oil and vehicle washings, should not be discharged within 10 m of the tree stem.
- c) Fires should not be lit in a position where their flames can extend to within 5 m of foliage, branches of trunk. This will depend on the size of the fire and the wind direction.
- d) Notice boards, telephone cables or other services should not be attached to any part of the tree.

9.7. Maintaining the Protective Barrier

Special attention should be given to maintaining the 'Protective Barrier' during the construction phase ensuring that it remains rigid and complete. In order to avoid disturbances to the Protective Barrier once it is installed, it should be inspected on a daily basis. Repairs shall be made immediately should it be damaged or not fit for the purpose intended.

9.8. Site Construction Access

Will be off Heol Glyndwr Road

9.9. The Intensity and Nature of the Construction Activity

The construction activity will be of low intensity due to the small number of houses proposed and the small scale of this scheme. All Construction Exclusions Zones must be fenced-off prior to commencement.

9.10. Contractors' Car parking Supervision by a qualified Arborist will continually monitor this.

9.11. Phasing of Construction Works

Unlikely to be phased due to the small scale of this proposal

9.12. The Space required for all Foundation Excavations and Construction Works.

There is sufficient space on this site, particularly to the north of the development footprint, to store excavated materials well outside the RPA of any retained tree should it be desired which can later be removed by mechanical means.

9.13. The Availability of Special Construction Techniques

There are no special construction techniques required for this development



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9.14. The Location needed for all Service Runs

As part of this development, it is anticipated at this stage that all service runs to include foul water and surface water drains, land drains, soakaways, gas, oil, water, electricity, telephone, television or other communication cables will be kept outside of all established RPA's of any 'retained trees'. It is anticipated that all service runs will enter from Heol Glyndwr Road. In any event, all service runs should be routed so to avoid the Root Protection Areas and in the unlikely event that this is not possible, work **should not commence** with any service installation until such time a 'Method Statement' is produced and agreed with the LPA offsetting the likelihood of damage occurring to major roots.

9.15 Changes in ground levels

There will be no ground level changes within any of the established RPA's. There is therefore no need to consider the matter further within this report.

9.16 Space for Cranes, Plant and Scaffolding

The limiting factors in terms of these considerations are the trees and the size and weight of the equipment. Often tall vehicles collide and cause collision injury to trees and compaction can occur to the soil which in turn damages the condition of the rooting environment and the tree's physiology. For this reason, care must be taken when operating cranes to avoid collision injury occurring. All plant must be tracked on, off and around the site avoiding the established RPAs. Where there is no alternative, and with the acceptance of a Method Statement by the LPA, tracking over root-plates may be possible, if load-bearing ground plates are used and sufficient to support the spread and load of the plant equipment. This may not be possible on sloping ground.

9.17 Space for Site Huts, Temporary Latrines and other Structures

Site huts and latrines are required for the duration of the construction. These will be stored at agreed locations on the site outside any RPA. Other temporary structures do not appear to be necessary but in the event they are, they will also be kept outside of the RPA's.

9.18 The Type and Extent of Landscaping Works required within Tree Protection Areas



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The author is not aware of the details of any landscape proposals for this development at this time. All landscape design should take account of the existing retained trees and planting within their RPA's should be avoided along with vegetation that may conflict with them and prevent the establishment of retained trees

9.19 Space for Storing Materials, Spoil and Fuel and for the Mixing of Cement and Concrete

Such activities can have implications on tree health if they occur within the established RPA or if they have the ability to run into a RPA. All such activities will be kept clear of such special areas. A 'Cement Washings Zone' should be created at least 15 metres away from any retained tree.

9.20 The Effects of Slope on the Movement of Potentially Harmful Liquid Spillages on or into Protected Areas

There is no danger of this occurring as the site is level.

9.21 Watching Brief

Successfully retaining trees on a development site depends on a number of controls being in place for example checking and maintaining the barrier fencing regularly but also the engagement of an Arborist to perform a Watching Brief is probably the most essential component. A watching brief involves regular drop in visits from an appointed Arborist to monitor protection measures and to be available to offer advice when needed. Such visits should be recorded and a report made available to the Local Planning Authority on a monthly basis where specifically requested. Such a brief would establish a level of communication between the client, site manager, Arborist and Local Authority Tree Officer or appointed staff which is usually fundamental in maintaining a level of care.



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10.0 General Comments and Observations

10.1 The trees on this site are generally immature and of low amenity value. Adjacent trees and hedgerows provide more amenity value and will require consideration during the planning process as their RPA's do extend onto the site marginally and thus offer some constraint to any development.

10.2 The younger trees, those with a stem diameter of below 150-mm, should not impose significant restraints on the development layout and could be considered for relocation using specialist techniques although in this instance it would probably be more prudent to replace any losses with the replanting of heavy semi-mature stock.



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11.0 Recommendations

- (1) Building design should take account of existing suitable trees and incorporate them within the design to maintain existing landscape value, where possible.
- (2) Tree work shall not commence until such time written approval or full planning approval is received from the Local Planning Authority following which, any necessary tree works should be completed before the site is occupied by construction workers and prior to any construction works.
- (3) The development of any site should not be complete until all retained trees have been re-examined by an arboricultural specialist.

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Arboricultural Consultancy and Sons Tree Specialists



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12.0 Limitations of this Report

12.1 It must be stressed that this report is a pre-development survey and not a risk assessment or a detailed report on the health and condition of the trees. Whilst any problems noted during a this ground level inspection are noted, general comments are taken based on a somewhat cursory, visual inspection

12.2 Every attempt has been made to provide a realistic and accurate assessment of trees and their condition at the time of this inspection. No responsibility can be accepted for damage or injury as a result of the failure of any tree or its parts due to faults not apparent upon a visual inspection carried out at this season, or for faults developing subsequent to the survey. Similarly, no liability can be accepted for the condition of the trees that are obscured in part or by whole (e.g. due to dense ivy or other foliage), nor for any that proved inaccessible to the inspector. Certain features which might provide evidence of ongoing decay or decline (Such as seasonal fruiting bodies, damage to foliage, insect emergence holes etc) may not be in evidence. Only those features present at the time of inspection could be assessed.

12.3 This report is based on the trees circumstances and condition at the time of the survey. It must be recognised that the circumstances may be altered radically over the course of any development process and that such changes cannot be accurately predicted. The report also does not provide any specific long-term management recommendations.

12.4 The effect this new development may have on localised wind turbulence has not been assessed during this inspection. As trees grow, they respond and mechanically adapt to their surroundings and exposure limits. With the erection of dwellings in close proximity to existing trees, new turbulence is created. The author accepts no liabilities to any failure subsequent upon such new imposed, artificial conditions.

12.5 Unless stated in writing, the inspection shall not include any underground parts of the tree. It does not consider **indirect** damage resulting from the extraction of moisture from shrinkable clay soils by tree roots causing **subsidence** or by **heave** occurring through soil rewetting following removal of trees on this site. Such problems are almost entirely restricted to areas of shrinkable clay soils and as I have **not** considered a soil analysis as part of my present brief, this aspect is **not** addressed at this time.



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12.6 Unless otherwise stated in writing and in the absence of altered circumstances, a report on the health and safety of a tree or trees cannot be relied on after a period of 12 months. Following such a period, a further inspection is required.

12.7 further and more general report limitations are set out in the authors Terms and Conditions. A copy is provided with this report and further copies are available upon request

13.0 Legal Constraints

13.1 The legal constraints with regards trees on any site should be considered in the early planning stage well before any work commences on site. The legal constraints referred to are general constraints that relate to arboriculture and do not cover any other legal matters that may be relevant on this site.

13.2 Tree Preservation Orders and Conservation Area Status

The law on TPOs is in **Part V111 of the Town and Country Planning Act 1990 Town and Country Planning (Trees) Regulations 1999**. When any tree/s are protected by a TPO or are situated within a Conservation Area, it is an offence (1) cut down (2) uproot (3) top (4) lop (5) wilfully damage or (6) wilfully destruct a tree without the express written permission from the Local Planning Authority (LPA), there are exceptions. A LPA may grant permission if considered reasonable following the submission of an application for consent to undertake the works or where in accordance with an Approved Planning Application or under the exemptions within the Town and Country Planning Act 1990 of dead, dying, or dangerous. It is advisable to consult the LPA and an Arborist prior to conducting any tree works under these exemptions.

13.3 The Wildlife and Countryside Act 1981 protects nesting birds and to disturb nesting birds can be a criminal offence. Therefore, caution must be aired if tree works are programmed during the nesting season, between March and August. Should nesting birds be present then all but essential works will be postponed. If in undertaking essential works a nest or nests are found to be present, then further advice will be sought from the Countryside Council for Wales.

13.4 (Wildlife and Countryside Act (as amended) Conservation (Natural Habitats) Regulations

1994) 5.1 In Britain, all bats and their roost sites are currently protected by law. The part of the law that protects them is found within the Wildlife and Countryside Act 1981 and as amended



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by schedule 12 of the Countryside and Rights of Way Act 2000 and by the Conservation Regulations 1994 under Section 39(1).

13.5 The legislation makes it an offence to intentionally or recklessly damage, destroy or obstruct access to a site used by bats whether bats are present at the time or not. This can include work on trees whether it is surgery, felling, the covering or filling of cavities or the installation of rod braces and flexible cable braces, where a bat roost is present.

13.6 There are some 16 species of bat native to the British Isles, all are insectivorous and depend to some extent on habitat in which trees are a significant element. Bats are a protected species and are in decline both globally and nationally. Therefore, they are to be fully considered before any tree work commences and particularly if the trees are mature. If a bat roost is known to be in any tree that is to be removed or worked on, a license must be obtained from the Welsh Assembly Government beforehand, there are exceptions.

13.7 Where there is a risk that bat roosts may be present, it is incumbent upon the owner to commission a specialist bat survey to identify bat roosts before instructing tree surgery to commence. Failure to do so and in the event of disturbing a roost site and upon conviction is an offence. Maximum penalties for committing offences relating to bats or their roosts can amount to imprisonment for a term not exceeding six months or to fines of up to Level 5 on the standard scale under the Criminal Justice Act 1982/ 1991 (i.e. £5000 in April 2001) per roost or bat disturbed or killed, or to both.

13.8 The tree forming the basis of this report has been assessed for potential bat roost. The inspection revealed no such obvious roosts and it is considered highly unlikely that this tree, or any of the others on site, is currently used by bats as a roost. This is due to the young age of the tree stock and absence in habitat features.

The probability of bats being in residence in any tree or that any of the trees are a roost site, has been scored according to the habitat potential each tree provides and is awarded a score in the column headed 'Habitat' within the Findings (Item 7.0). This reflects a potential score and not an actual score. The score ranges from Low through to High and details are provided below of this scoring system.



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Low Potential (L)

Trees within this category will generally be of a young age, below 30 years, and or with a distinct absence of features that are known to appeal to bats. It would consist of trees without wind damage or obvious cavities, having smooth bark, perhaps of a young age, with little or no ivy, splits or cracks and as such, offers no obvious bat habitat.

It is suggested that where trees have been awarded a low potential, felling or surgery works may proceed without restriction.

Medium Potential (M)

A medium potential score would reflect those trees which may have dense ivy, some cracks or splits and wind damage and perhaps some cavities that are small or situated not in an ideal position, perhaps low down on the tree or facing north and with a distinct absence of other indicative features. Such trees may provide emergency shelter to a transient male but where alternative and better quality sites are likely to be preferred.

In these instances where a medium potential is noted, a climbing inspection must be undertaken by a climber who is experienced in bat habitat recognition, prior to any works commencing. Once a climber is satisfied there are no potential habitat, works may proceed with vigilance and under the guidance of a method statement relating to bats and trees. In the event any indications of bats are present, then works will be suspended and a licensed bat worker will be engaged to assess the situation.

High Potential (H)

A tree with a high potential score would be a tree where potential habitat is immediately recognised. This may be large cavities facing south and above 6 meters above ground level (AGL) and where additional indications may be noted such as scratch marks, dark staining and or insect activity around cavity entrances, bat droppings or a tree that has a variety of potential such as splits, cracks, hazard beams, cavities, ivy and other rot holes.

Where trees receive a high potential score, they are recommended for a full and detailed examination by a licensed bat inspector.



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13.9 Statute and Common Law.

A landowner should be aware that both statute and common law dictates regular inspections of trees on land in their control are necessary where such trees could cause injury or damage in the event they should fall or shed any parts. A person suitably qualified in arboriculture should undertake such routine inspections and any remedial tree works recommended within the time constraints specified, to prevent injury or damage occurring. A landowner should retain records of all inspections and any remedial tree works that have resulted from such inspections. The **Arboricultural Association** at Ampfield House, Ampfield, near Romsey, Hampshire. Telephone 01794 368717 are able to provide advice on suitably qualified persons or indeed suitable qualifications a person should hold to undertake qualified inspections.



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14.0 Abbreviations

Number (No) The tree number provides reference to an individual tree either by way of T1, T2 (tree 1 or tree 2) and relates to an attached plan showing their approximate positions or through a series of numbers (00123) that relates to a tag on the tree and may also be indicated on an attached plan.

Species The species is the given name of the tree which is usually provided in both the common and scientific names.

Diameter (DBH) The diameter for each tree is in millimetres based on the diameter or circumference of the trunk measured at a height of approximately 1.5 metres above ground level, unless otherwise stated. All measurements are approximate.

Crown Spread The crown spread of the tree is measured as the radius (from the centre of the trunk) in meters and in most cases covering the four points of the compass.

Height The height of the tree is measured in metres and is usually approximate. If the abbreviation 'Clinom' appears after the given measurement, it indicates the tree has been measured with an optical measuring instrument, a Clinometer, and is accurate to within 5 metres.

Age The age of the tree is given based on its life expectancy. For example, an oak tree at an age of 100-years is perceived as early mature when a hawthorn at 100 years would be considered old. Age classes are given as follows: -

- Y. Young trees** (age less than 1/3 life expectancy)
- MA. Middle aged** (between 1/3 – 2/3 life expectancy, still growing vigorously but not as fast as a younger tree)
- M. Mature trees** (above 2/3 life expectancy. Growth rates beginning to slow down at this stage)
- OM. Over Mature trees** (growth rates slow and possibly beginning to display signs of decline)
- V. Veteran** (decline is well set-in but the tree **may** be of specific ecological value. The tree is likely to contain sufficient deadwood and decay that is a special habitat for many rare invertebrates that are considered to be at risk from extension)

Structural Condition column notes any defect, signs or symptoms of ill health, structural weaknesses or other problems that are easily and visibly recognised that may affect the physiology or structural integrity of the tree.

Recommendations The recommendations are provided giving the appropriate action required for the tree or groups of trees to fulfil the brief, which possibly include reducing foreseeable risk or improve the physiology of the tree.

Priority Coding is provided to relay the urgency in which any recommended work is required based on the health and safety of the site and the considered target occupancy. It may be helpful for budgeting purposes.

- Priority 1** Top priority; to be undertaken as soon as it is practicable for reasons of offsetting foreseeable risk, injury or damage and where the probability of such occurring is considered high.
- Priority 2** Medium priority; attention strongly advised at your earliest convenience to deal with a problem that whilst is not as serious as priority one, carries significant concern. In any event, works should be completed within 6 months.
- Priority 3** Low Priority; the work is advised but of a lower priority than above which should be carried out before a period of 12-months lapses.

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- Priority 4** Minor Problems representing no immediate hazard at the time of inspection although potential for harm or hazard to develop as the tree grows Or faults developing that may become significant at a later date if left to develop. Works without any immediate urgency, possibly to rectify a minor fault or to abate a nuisance present or developing.

Root Protection Area this is a protection area established for around the base of each tree to prevent physical, chemical or compaction damage occurring. This is usually achieved through the erection of fencing or other barrier.

Construction Exclusion Zone this is an area established where construction is not permitted and usually correlates to the Root Protection Area.

Special Precaution Area this is an area, usually within the root protection area, where construction or other activity may be permitted but only under the direction of a 'Arboricultural Method Statement' and the supervision of an Arborist.

- **All measurements given are approximate.**
- AGL an abbreviation for above ground level.

In some instances, a 'Target Status' is awarded to each tree based on the assumed target occupancy of the area around the tree, i.e. how probable is it that a target will be present should some form of failure occur, together with an estimate of the seriousness of the possible consequences of such a failure based on the size or weight of the part. Any substantial tree in proximity to a building with a high level of occupancy would have a high target status whilst a tree in the middle of an open pasture field away from footpaths would have a low target status. However, this parameter may increase with a young tree as it grows. It must be noted that this assessment is somewhat crude and based on the site usage at the time of the survey. It is a snapshot of time only and the client being more familiar with the site should assess the estimates made within this report and consider if they are a reasonable reflection of site usage. Where they are not, the client should make the author aware of the fact within 14 days of receipt of the report.

15.0 Glossary of Terms

Arboriculture: the culture and management of trees as groups and individuals, primarily for amenity and urban forestry excluding commercial forestry purposes.

Arboriculturalist; person who has, through relevant education, training and experience, gained recognised qualifications and expertise in the management of trees generally and in relation to construction.

Architecture: in a tree, a term describing the pattern of branching of the crown or root system.

Arboricultural Implication Assessment (AIA) study, undertaken by an arboriculturalist, to identify, evaluate and possibly mitigate the extent of direct and indirect impact on existing trees that may arise as a result of the implementation of the site layout.

Arboricultural Method Statement; methodology for the implementation of any aspects of development that has the potential to result in loss of or damage to a tree.



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Assessment: in relation to tree hazards, the process of estimating the risk which a tree or group of trees poses to persons or property (THIS INVOLVES A VISUAL INSPECTION FOR DEFECTS AND CONTRIBUTORY SITE FACTORS, AND SOMETIMES ALSO A DETAILED INVESTIGATION OF SUSPECTED DEFECTS)

Bole (trunk) the main stem of a tree below its first major branch

Branch: a limb extending from the main stem or parent branch of a tree

Canopy: the topmost layer of twigs and foliage in a woodland, tree or group of trees

Construction Exclusion Zone; area based on the RPA (meters as a radial measurement and sometimes a m²), identified by an Arboriculturalist, to be protected during development, including demolition and construction work, by use of barriers and/or ground protection fit for the purpose to ensure the successful long-term retention of a tree.

Crown: in arboriculture the main foliage-bearing portion of a tree containing the leaves and branches

Defect: in relation to tree hazards, any feature of a tree that detracts from the uniform distribution of mechanical stress, or which makes the tree mechanically unsuited to its environment.

Dysfunction: in woody tissues, the loss of physiological function, especially water conduction.

Failure: in connection with tree hazards, a partial or total fracture within woody tissues or loss of cohesion between roots and soil. (IN TOTAL FAILURE THE AFFECTED PART SNAPS OR TEARS AWAY COMPLETELY. IN PARTIAL FAILURE, THERE IS A CRACK OR DEFORMATION WHICH RESULTS IN AN ALTERED DISTRIBUTION OF MECHANICAL STRESS)

Group: the term 'group' is intended to identify trees that form cohesive arboricultural features either **aerodynamically** (e.g. trees that provide companion shelter), **visually** (e.g. avenues or screens) or **culturally** including for biodiversity (e.g. parkland or wood pasture).

Heave: in relation to a shrinkable clay soil, expansion due to re-wetting, sometimes after the felling or root severance of a tree which was previously extracting moisture from the deeper layers; also, in relation to root growth, the lifting of pavements and other structures by radial expansion; also, in relation to tree stability, the lifting of one side of a wind-rocked root plate.

Leader: in a tree, a topmost shoot that has apical dominance.

Preventive action: in a tree hazard management, action that helps to prevent injury to persons or damage to property.

Pruning: the removal or cutting back of twigs, branches or roots; in some contexts applying only to twigs or small branches only, but more often used to describe all kinds of work involving cutting.

Retained Tree a tree that has been considered suitable by an Arborist for retention and which during the design stage is selected for retention and incorporated within the development.

Risk: the likelihood of the potential harm from a particular hazard becoming actual harm.

Root Protection Area (RPA); layout design tool indicating the area surrounding a tree that contains sufficient rooting volume to ensure the survival of the tree, shown in plan form in m²

Soil heave: see **heave**

Subsidence: in relation to soil or structures resting in or on soil, a sinking due to shrinkage when clay soils dry out, sometimes due to extraction of moisture by tree roots.

Subsidence: in relation to branches of trees, a term that can be used to describe a progressive, downward bending, due to increasing weight.

Targets: in a tree hazard assessment (and with somewhat incorrect terminology), persons or property or other things of value, which might be harmed by mechanical failure of the tree or by objects falling from it.

Tree: a woody plant, which typically has a single main stem and, in maturity, attains a height of at least four metres and a stem diameter at breast height of at least 75-mm.

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Tree Constraint Plan (TCP): plan prepared by an Arboriculturalist for the purpose of layout design showing the RPA and representing the effect that the mature height and spread of retained trees will have on layouts through shade dominance, etc.

Tree Preservation Order: in Great Britain, an order made by a local authority, whereby the authority's consent is generally required for the cutting down, topping or lopping of specified trees.

Tree Protection Plan: scale drawing prepared by an arboriculturalist showing the final layout proposals, tree retention and tree and landscape protection measures detailed within the arboricultural method statement (AMS), which can be shown graphically.

Trunk: the single main stem of a tree.

Vigour: in tree assessment, an overall measure of the rate of shoot production, shoot extension or diameter growth (cf. **vitality**)

Visual Tree Assessment (VTA): in addition to the literal meaning, a system expounded by Mattheck & Breloer (1995) to aid the diagnosis of potential defects through visual signs and the application of mechanical criteria.

Wind exposure: the degree to which a tree or other object is exposed to wind, with regard both to duration and velocity.

Wind pressure: the force exerted by wind on a tree or other object.

Wind snap: the breaking of a tree stem by wind.

Windthrow: the blowing over of a tree at its roots.

16.0 References

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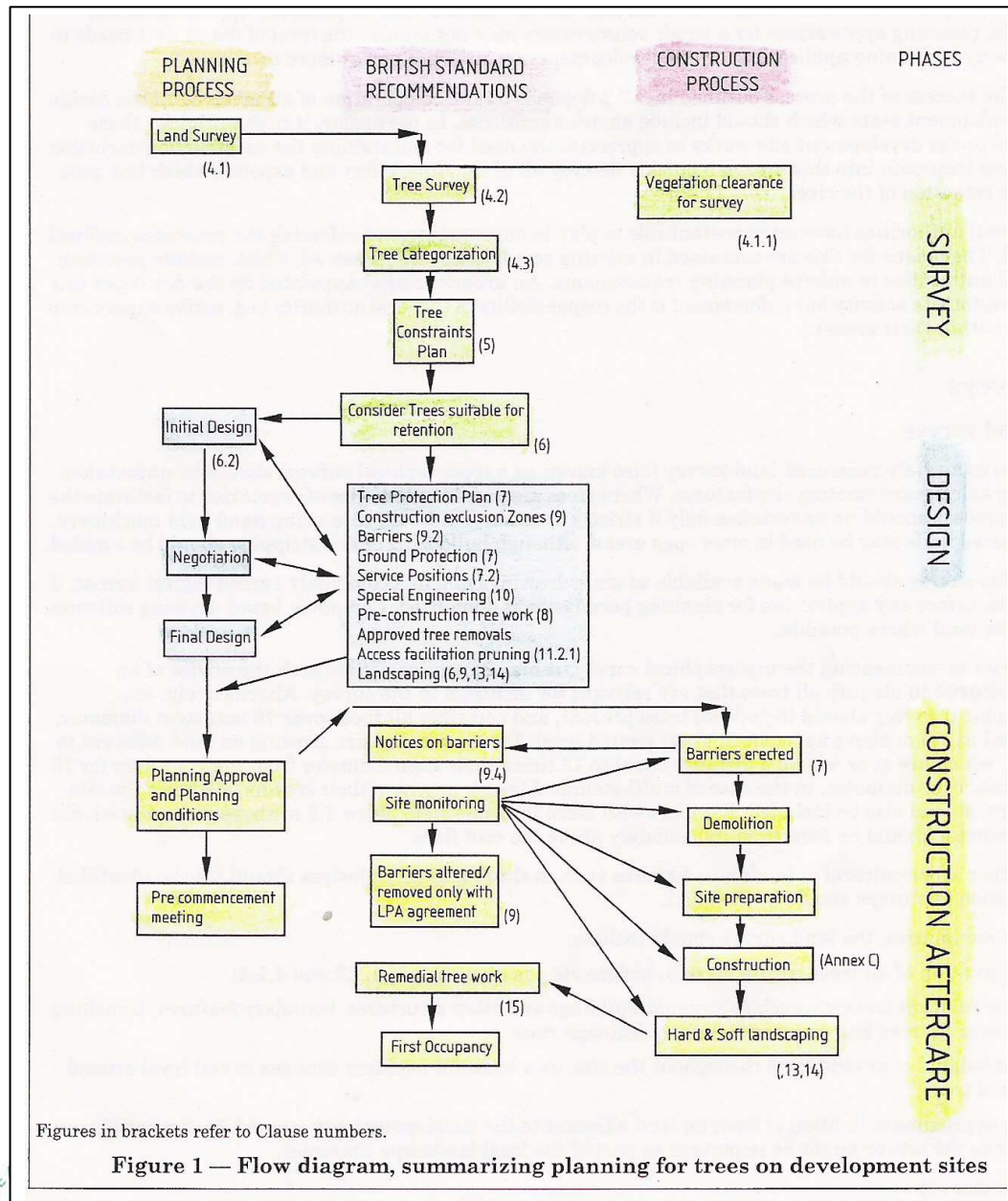
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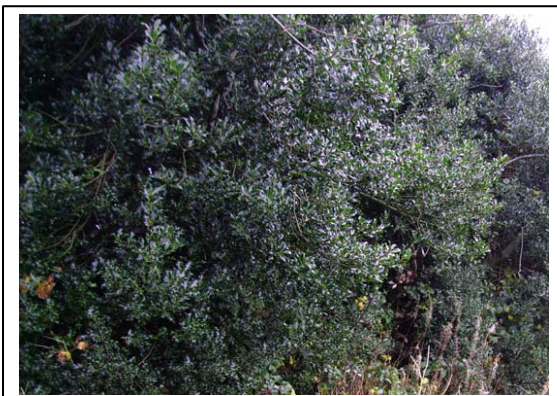
17.0 Appendices



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A view into the site from Heol
Glyndwr



The informal Holly hedge
(Hedge 1)



A view of the southern
boundary



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Conifer identified as T 1 on the attached plan, situated in a neighbouring garden.



Leylandii also in neighbouring garden (identified as T 2)



The semi mature Norway maple and wild cherry tree



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The mixed species of
Hedge 2 along the
southern boundary



The outgrown section
of the hedge referred
to as Group 1



A view from the west
into the site



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18.0 Site Plan



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