ANDERSON TREE CARE

Arboricultural Contractors and Consultants

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Tree Survey:	**Former Pheasant Inn site, 88-90 High Street, Dodworth, Barnsley.**
Client:	**Eldwick Estates Limited.**
Date of Survey:	**May 12th 2015.**
Weather at time of Survey:	**Fine and bright.**
File reference:	Pheasant Inn 01

Appendices: 1. Tree location plan.

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Checked by: R H Anderson. Dip Arb.(RFS)

Introduction.
This is a vacant site that appears to have been cleared for a number of years. At the time of my visit some preliminary excavations had taken place but no construction work had been started.

I have seen an e-mailfrom the Planning Officer wherein the trees are discussed. I shall consider these comments in my deliberations.

Tree Preservation Orders.
A Tree Preservation Order (TPO) protects all the trees on the site, and presumably some trees in the adjoining garden to the west. I have not seen the TPO.

British Standard 5837 2012 Trees in relation to design demolition and construction – Recommendations.

I have taken the above document as the basis for this report. The Standard has been recently revised and the 2005 version withdrawn. The Local Planning Authority should consider this Standard in its deliberations about this site. The Standard states its objectives of achieving “a harmonious and sustainable relationship between trees and structures.”

The preoccupation of this standard is the categorisation method and the Root Protection Area (RPA). The logic for this is that resources should not be wasted attempting to retain trees that do not justify retention, nor should a project set out to retain a tree only to ensure its rapid demise by failing to take account of its growing conditions.

While the Standard covers much more than these matters, at this stage in this project these are the major concerns. This survey is intended to supply the information necessary to ascertain which trees are suitable for inclusion in the project and how their retention will affect the manner in which the site is developed. BS5837 anticipates that an Arboricultural Impact Assessment (AIA) will be undertaken once the layout is finalised and that the planning application will be accompanied by a Tree Protection Plan (TPP).

The TPP is a drawing that shows which trees are to be retained and where the protection measures are to be installed. This should be accompanied by a “Method Statement” detailing the measures to protect the trees and when they can be removed. The AIA will contain details of tree work to be undertaken to facilitate the development and a summary of any tree planting.

BS5837; Tree Categorisation Method.
The categorisation method is summarised in BS5837 at section 4.5 where it emphasises the need for it to be undertaken by an Arboriculturist. Elsewhere the Standard tells us that an Arboriculturist should be a “person who has, through relevant education, training and experience, gained expertise in the field of trees in relation to construction.”

There are 4 retention categories; U, A, B & C. The criteria for inclusion in each category and subcategory are summarised in Table 1 “Cascade chart for tree quality assessment,” an interpretation of which follows:

Trees unsuitable for retention.			
Category and definition			
Category U: Those in such 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, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees. Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline. Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality. *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve.*		
Trees to be considered for retention.			
Category and definition	Subcategories		
	1. Mainly arboricultural qualities	**2. Mainly landscape qualities**	**3. Mainly cultural qualities**
Category A Trees of high quality with an estimated remaining life expectancy of at least 40 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 Arboricultural features (e.g. the dominant or principal trees within an avenue).	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features.	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture).
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 unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation.	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality.	Trees with material conservation or other cultural value.
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 150 mm.	Unremarkable trees of very limited 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 significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits.	Trees with no material conservation or other cultural value.

NB. This is an interpretation of table 1, not a copy, although much of the text is verbatim.

BS5837 contains details about what colours should be used to indicate their categories on any drawings; these are U = dark red, A = light green, B = mid blue, and C = grey.

BS5837 goes into greater detail (at 4.5.10) about the appraisal of small trees; those of less than 150mm diameter, as these are easily replaced with similar sized new trees. It notes that they might even be transplanted.

It includes further detail (at 4.5.11) about the importance of veteran trees and the measures that are likely to be needed to avoid damaging them and to ensure they are not an imposition upon a development.

BS 5837; Root Protection Area.

The Root Protection Area (RPA) is defined as a circular area of radius 12 times the trunk (stem) diameter (TD). BS5837 contains details as to where and how it should be measured, and also as to how to treat trees with more than one stem; an equivalent diameter is calculated. I use a diameter tape to measure this and use common sense to adjust this measurement where Ivy or other factors affect the measurement. Despite the Standard's attempts to standardise the measurement conventions there will be times when there is little choice but to estimate the measurement.

While the RPA is defined as a circle the Standard accepts the impracticality of erecting circular fences and it implies that other shapes are acceptable as long as the impact of the alteration is properly appraised. As a general rule, the 12 times the TD sum can be interpreted as a "tree to building distance" that is easy to calculate. It would usually be acceptable to plot the RPA on any drawing as a square with sides of twice the tree to building distance, notwithstanding the fact that this would have a greater area than the circular area.

The two previous versions of BS 5837 have contained advice about offsetting the RPA. The 2012 version does not but allows (at 4.6.2) deviation based upon "a soundly based Arboricultural assessment of likely root distribution."

The 12 times the TD rule is often seen as a mathematical method of calculating where a tree might have grown roots, plainly it is not. It might be helpful to consider it as a system of calculating the size of pot that might be needed were it possible to transplant a mature tree into a pot. The calculation is actually for a volume of soil, although as the pot is predetermined to be 600mm deep (most tree root action is in the upper 600mm of a soil profile), it is only necessary to calculate an area.

Clearly if a tree has grown on very shallow soils it might be necessary to have a larger RPA. I anticipate that a tree grown in such conditions would be of relatively poor quality, although making firm predictions about such things should be avoided.

At Annex D, BS5837 contains a table of RPA areas for single stem diameters, and at Annex C the measuring conventions are illustrated. Annex D rounds the TD to multiples of 25mm and the RPA to the nearest whole square metre.

While damage to tree roots is paramount, other factors need to be taken into consideration; factors such as shade from nearby trees, future growth and even access for machinery in order to undertake future tree management. These factors may affect the categorisation.

The Survey Schedule.

While BS5837 suggests numerous factors that should be recorded on the schedule the information presented in this survey is as follows:

1. **Tree no & species.** I hope this is self-explanatory. I routinely use common names but will use scientific names to clarify the identification where necessary. Some trees are dealt with as groups. Hedges are dealt with similarly.
2. **Height.** (Ht) measured in metres. This is estimated from ground level. I use a clinometer and laser range finder to assist. While these are reasonably accurate, actually seeing the top of a tree from ground level can be difficult so the height should always be regarded as an estimate.
3. **Trunk Diameter.** (TD) measured in millimetres using a tape. This is rounded up to the nearest 10, greater accuracy is unnecessary. Where I have been forced to estimate the measurement due to basal growths or some-such, the figure is appended with an "E."
4. **Age class.** BS 5837 uses the term "life stage." I consider this to mean the same as age class. The categories are Young (Y), Middle-aged (EM for early-mature), Mature (M), Over-mature (OM) and Veteran (V). BS5837 uses the class "semi-mature" but this appears too similar to early-mature for me to make a meaningful distinction. A veteran tree is one that has probably exceeded its 'normal' life span and has developed attributes such as wildlife habitat, biodiversity benefits, historic association or such-like. To quote from the Standard: It is a tree that *by recognised criteria, shows features of biological, cultural or aesthetic value that are characteristic of, but not exclusive to, individuals surviving beyond the typical age range for the species concerned.*
5. **Category.** The retention category as detailed above.
6. **Comments**. This column is simply to impart additional information and may cover reasons for the trees' categorisation or anything else that I feel is worthy of mention. Peculiar crown formation might be mentioned, or an unusual branch configuration. BS5837 recommends we measure the *"radius of branch spread at the four cardinal points."* This section will contain that information if I feel it necessary to measure unusual crown formation. Otherwise the presumption is that the trees are fairly typical for the species. The Standard also suggests that we record the height of crown-clearance; that is how far from the ground the branches grow. I shall not mention this unless it is unusual or particularly relevant. I shall broadly confine my assessment of the trees physiological condition to poor, fair, good, or dead and mention it here. All trees are assumed to be in good condition unless mentioned otherwise. The Standard asks us to include the *"estimated remaining contribution in years."* This is rather a "how long is a piece of string" question. I shall include a rough assessment of remaining life where I deem it necessary. By and large this will have been included as part of the 'category' assessment. If necessary I shall comment here.
7. **Root Protection Area.** As detailed above. Taken from Annex D. (NB. The RPA is 'capped' at 707m^2, i.e. a circle with 15m radius or a square with 26m sides.)

BS5837 contains a suggestion of information that might be gathered for a tree survey. This includes information such as the height of a tree's first branch, and the

crown spread to the four cardinal points. I note that the Blue Book (that is “Tree Preservation Orders; a guide to the law and good practice” DETR 2000 (now replaced by internet guidance that says much the same thing)) contains the very useful advice that local planning authorities should not ask for any more information than is necessary to decide an application (to work on a protected tree). This is a sensible approach and one that I apply to all matters related to planning and trees. I note that the recent NPPF document (at paragraph 193) contains similar advice.

If something is particularly notable about a tree, say the crown spread is particularly broad or lop-sided, I shall mention it and expand upon the characteristic and its relevance in the discussion section of the report.

The previous version of BS5837 contained the instructions for preparing a “Tree Constraints Plan.” While this was a sensible idea it was probably over complicated. It was intended to be a tool to inform the designer of a site layout more than an essential component of a planning application. It was meant to show the various retention categories of each tree or group, the tree positions and the heights and accurate spreads of each tree. It was also supposed to show the areas likely to be affected by shade. Shade would clearly differ from June to December and on slopes of different orientations, so this would be a complicated drawing. In fact I think it would be likely to be so convoluted as to be unusable.

Experienced designers are fully capable of working with different levels, neighbouring buildings, slopes of differing orientation, and interpreting where shade might be a problem, so the tree constraints plan could be seen as unnecessary. It is our intention that the tree schedule should provide sufficient information for a suitably experienced and skilled graphic designer to prepare some sort of Tree Constraints Plan should he or she consider it was necessary.

“An iterative process.”

BS5837’s Figure 1 is a flow chart illustrating the processes in developing a site. It emphasises that a development project should be an “iterative” process, meaning that advice from the Arboriculturist should be ongoing. This might mean that a sketch of a proposal should be discussed with the Arboriculturist, and the impact on trees appraised before preparing more detailed plans.

On large spacious sites it might be feasible to simply position structures and services outside of the RPAs, but on more typical sites it might be necessary to sacrifice a poor quality tree in order to give a better quality tree more space.

If these matters are addressed before a planning application is submitted it ought to speed up the decision-making process for the local planning authority. Figure 1 anticipates that the planning application will be accompanied by a Tree Protection Plan, which shows the positions of RPA protection fencing, and an Impact Assessment. This should be a summary of tree work that the project will require. This will include trees that are to be removed as well as those that might need pruning. It will also include an appraisal of the benefits of any tree planting and the likelihood of improved tree management upon the project’s completion. By definition the impact assessment will take into account the surrounding area’s tree population and the condition and management (or lack of) currently in operation.

The Trees.

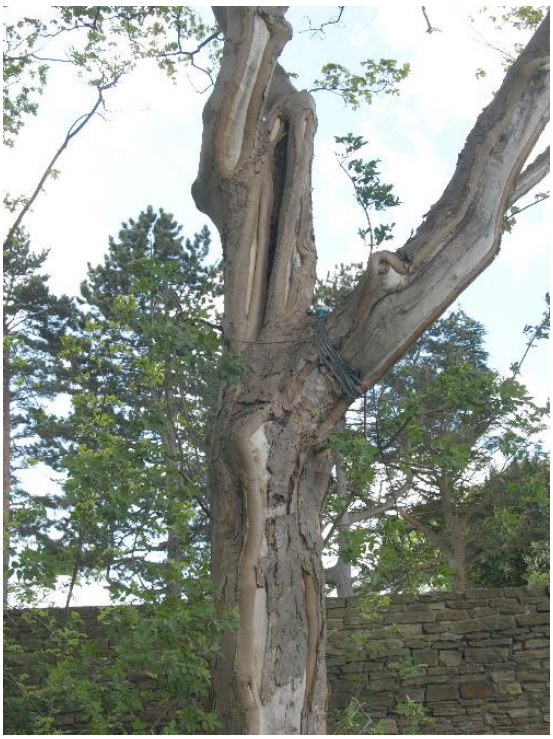
A tree location plan is appended to the rear of this report.

Tree No.	Species.	Ht	TD	Age class	Cate-gory	Comments.	RPA
1.	Group; Horse Chestnut	15	750	M	C2	Off-site but close to the boundary wall, which is cracked. TD estimated. Some signs of Horse Chestnut Bleeding Canker.	255
2.	Purple Beech	16	900	M	C1	18 metre crown spread. Superficially this is a decent tree but peering over the (cracked, retaining) wall it is obvious that the tree has suffered significant damage.	366
3.	Deodar	17	770	M	C1	Some damage in the crown, some soil disturbance at the base, OK otherwise.	272
4.	Black Pine	17	710	M	C1	OK but some soil disturbance at the base.	238
5.	Black Pine	18	580	M	C1	OK but some soil disturbance at the base.	163
6.	Scots Pine	17	430	M	C1	OK but some soil disturbance at the base.	92
7.	Ash	21	880	M	C1	A substantial tree but with some substantial dead wood in the crown. Not in leaf at the time of my site visit, soil disturbance at the base.	366
8.	Sycamore	14	610	M	U	Severely damaged and dying back, has clearly been abused over many years.	0
9.	Horse Chestnut	16	650	M	C1	Has suffered similar damage to tree 8, but hasn’t died back to the same extent. Probably best removed.	191
10.	Oak	18	860	M	C1	OK but has suffered some soil disturbance and damage.	346
11.	Horse Chestnut	15	540	M	C1	One sided crown due to competing with tree 10. Some trunk damage.	137

Tree No.	Species.	Ht	TD	Age class	Cate-gory	Comments.	RPA
12.	Sycamore	15	530	M	C1	OK somewhat suppressed and some stem damage; a rather nondescript tree.	137
13.	Sycamore	15	470	M	C1	Suppressed by surrounding trees, nondescript.	102
14.	Sycamore	15	380	M	C1	As tree 13.	72
15.	Ash	9	430	M	C1	Coppice growth, 4 stems, TD calculated. Crown entirely one-sided and has been used as a garden climbing frame.	92
16.	Oak	15	580	M	C1	Leans over neighbouring garden, some damage has resulted in growth defects.	163

Discussion.

It is clear from visiting this site and web-comments (dodworthkronicle.blogspot.co.uk) that this site has been something of an eyesore for quite some time. From the aerial photographs on Google Earth it is also clear that the pub was demolished sometime between 2003 and 2008, and that since then some trees have been removed. It is also possible to see on Google that some of these trees cannot have been in good condition in 2009. While I do not know anything about the serving of the TPO it is likely that the absent trees would not have been deemed suitable for protection. Which is not to say that the trees that are present now are particularly TPO-worthy; some of them clearly are not.



Photograph 1.

Photograph 1 shows tree 8, it has clearly been in poor condition for some time. While the TPO might be a very old one if it was a recent imposition it should have excluded this tree. Photograph 2 shows a wire for a floodlight fastened around the branch.

Photograph 2

Photograph 3.

This may sound somewhat far-fetched but the damage here is almost certainly caused by a bonfire. Bark lost in this way is a common sight where a fire has scorched a tree.

The same fire also scorched the nearby Horse Chestnut, tree 9, although that tree does not seem to have suffered quite as badly as the Sycamore. Photograph 3 shows the damage albeit partially hidden by foliage.

Tree 9 has also had a floodlight fastened to it.

It needs to be borne in mind that fire damage to trees is not necessarily caused by scorching or charring, bark can be killed simply by virtue of it being exposed to heat for a sustained period. Without getting too anthropomorphic about it you could say it's comparable to a severe case of sunburn.

Once the bark has been killed it eventually drops off leaving the heartwood exposed, which leaves an increased risk of infection. In photographs 1 & 2 there are examples of the heartwood having been decayed away presumably it was infected with a decay-organism, while elsewhere the heartwood still seems solid. Exposed heartwood clearly does not always become infected with anything, but the bark that would ordinarily protect the heartwood is missing so the tree is at risk.

Photograph 4.

Photograph 4 shows the base of Horse Chestnut tree 11. This has suffered bark damage more recently; I imagine that the machinery that demolished the building caused it, probably while levelling the ground around the tree.

There is still a pile of dumped tyres between trees, I don't know if these have been tipped since the pub was demolished but it is indicative of the way all the trees on the site seem to have been treated. In my experience this is not unusual. In fact I was looking at a farm yard site not so far away only this week, where trees had been treated in much the same way. This is not deliberate abuse, more neglect born of ignorance.

Photograph 5 is a view of trees 3 to 6. Tree 3 is at the right. Note also the way these trees tower over the houses to the rear fortunately they are to the north of the houses, so shade (there) is not a major consideration. They will be to the south of the proposed buildings so shade may well be more of a problem there. That said none of the trees are particularly densely foliaged.

Photograph 5.

It is obvious that the ground has been disturbed at the base of these trees. While trees 3 to 6 appear reasonable specimens I noted that tree 3, the Deodar (a species of Cedar) has suffered some damage in the upper crown. Unfortunately Deodars of this age are somewhat prone to damage caused by snow; being evergreen they manage to catch more snow than might be anticipated and as a result branches are ripped off by the weight.

Photograph 6.

Photograph 6 is a view of the crown of tree 3 showing a large broken branch. This is almost certainly damage caused by snow, which is very common in Cedars.

Ideally this tree would be climbed and the damage pruned out in an attempt to leave a tidier, more aesthetically pleasing tree.

The main consideration with this site is to ensure that the new buildings do not make future tree management extremely difficult. While access to get to the tree and prune it might be unaffected, the removal of the debris could become an onerous task.

Photograph 7 is a view of the Purple Beech tree 2. While it is close to the site it does not reach very far into the site.

Photograph 7.

I note that this tree was mentioned in the Planning Officer's e-mail, concern was expressed about its bearing on the proposed development.

Photograph 8.

While I appreciate the Officer's concerns about the proposal's effect on the tree, it is fair to point out that the tree is already likely to be accused of nuisance. Photograph 8 is a view of the wall at the base of the tree.

It would also be reasonable to note the condition of the tree; photograph 9 shows the base of tree 2. It appears that this tree has suffered damage in much the same as trees 8 & 9. While this damage is probably not structurally significant (being off-site I have not inspected it closely), it would be perverse to oblige a neighbour to pay a tree more heed than the owners do.

Photograph 9.

Photograph 10.

Photograph 10 shows tree group 1, three Horse Chestnuts. These are also off-site and even closer to a wall than tree 2.

This wall is in poor condition, although being rendered the condition is not immediately obvious. The main consideration here is whether such a wall could be rebuilt without damaging the trees' roots.

Photograph 11 shows the wall at the base of group 1. The render has hidden the wall's structure but elsewhere it is obvious that not only does it retain a difference in soil levels but it is of a construction that is not really suitable for retaining a difference in soil levels. (Please bear in mind that I'm not a builder or structural engineer and my comments about a wall's solidity (or otherwise) should be confirmed by someone with appropriate expertise.)

Photograph 11.

While these things are difficult to predict, rebuilding walls close to trees like this is almost certain to cause root damage. Although this might not immediately destabilise a tree, the main concern is whether the wounds caused to the roots, which are inevitable, become infected with some sort of decay organism that spreads to weaken the roots and reduce a tree's vigour.

Reducing a tree's vigour means that its ability to tolerate the other tribulations life throws at it, things such as insect infestation or drought, is reduced. A young vigorous tree is much more likely to tolerate such treatment than an elderly, less-vigorous tree. These are ethereal matters that need to be addressed by designers of schemes like this; we should not write off trees prematurely but nor should we design expensive tree-retention schemes that are likely to rapidly be proved a waste of money. It is always deeply annoying to see a development that clearly took a lot of trouble (and expense) to retain a tree, only to have it die shortly afterwards.

This might sound something of bleak outlook, but as so many tree species currently have so many threats, a pragmatic appraisal is required. Horse Chestnut in particular is having a very hard time at the moment, it is not only under attack from the Horse Chestnut Leaf Miner, an insect pest (*cameraria ohridella*) that has spread vary rapidly since it was first found in London in 2002, but much worse is the Bleeding Canker disease that has now been found to have two causes, one a bacterium the other a fungus-like disease related to Potato Blight and a host of other plant diseases. (see http://www.forestry.gov.uk/fr/infd-6kybgv)

I mention this because if it is decided to rebuild the wall in photograph 11 then I consider it would be pragmatic to remove the 3 Horse Chestnuts. It would be wisest to simply remove them and replant new trees.

This concludes my observations on the trees at this site.

Impact Assessment.

The principal behind BS5837 is that a site layout should be designed around trees that are deemed worthy of retention, and that the survey should be undertaken before a site layout is prepared. In this case a site layout has been prepared and submitted and this report has been requested as a result of that application. In particular a Planning Officer (Elaine Ward in an e-mail to Jonathan Lovatt) has mentioned several tree matters.

Firstly she mentions that the crown spreads have not been plotted accurately and that the RPAs aren't either. I have mentioned these topics in the preamble to this report but shall expand on the subject. Plotting crown spreads is not an exact science and the relevance of the information is not entirely clear anyway. Certainly in this case where there is no intention of building underneath trees (within the RPA) it is hard to see how the information might be used. The RPA calculation is based on branch-spread and as a general rule an average tree's branch spread will coincide with the RPA 12 times the diameter-rule.

The RPA is often interpreted as a method of mathematically working out where a tree has grown roots. Clearly it is no such thing and it needs to be remembered the objective is to protect a volume of soil. It is sometimes useful to consider the RPA rule as method of working out how large a plant pot might be needed if it were possible to transplant a mature tree into a giant pot. Once this mental image is made we can see that we wouldn't actually need to put the tree in the middle of the pot. In other words the RPA can be off-set.

In this case I consider that the proposed buildings (as shown on the Coda drawing 2296 TP) all appear to be outside the circular RPAs and only the building proposed for plot 3 gets close to trees in plot 2. The Planning Officer refers to a Horse Chestnut to the south of plot 3. I presume this is tree 9 which I suggest removing. Tree 10 is a better tree but being an Oak it would tolerate pruning. Instigating a pruning regime for tree 10 would not be a bad thing.

If the Officer really meant the Ash tree to the south of plot 3 (tree 7), then she is correct about the likely shade problems. I noted that the tree has some substantial dead wood and was not in leaf at the time of my visit. I think it would be as well to consider the tree as being in the early stages of decline and my concern with it would be whether the site's development would make its future removal more onerous and thus expensive. Removal and replacement might be in the best interest of the neighbourhood's tree stock.

The Officer also refers to the canopy of the "large Copper Beech (TPO'd) that substantially overhangs the site at plot 5." In my opinion the tree does not overhang too badly although being to the west of the proposed building, evening sunshine will be interrupted. The overhang can be reduced by pruning which would not be detrimental to the tree's appearance, but my main concern with regard to this tree would be potential root damage should the boundary wall require rebuilding. I realise I've not closely inspected the tree beyond noting the large wound (photo 9), but I think this matter is a minor issue.

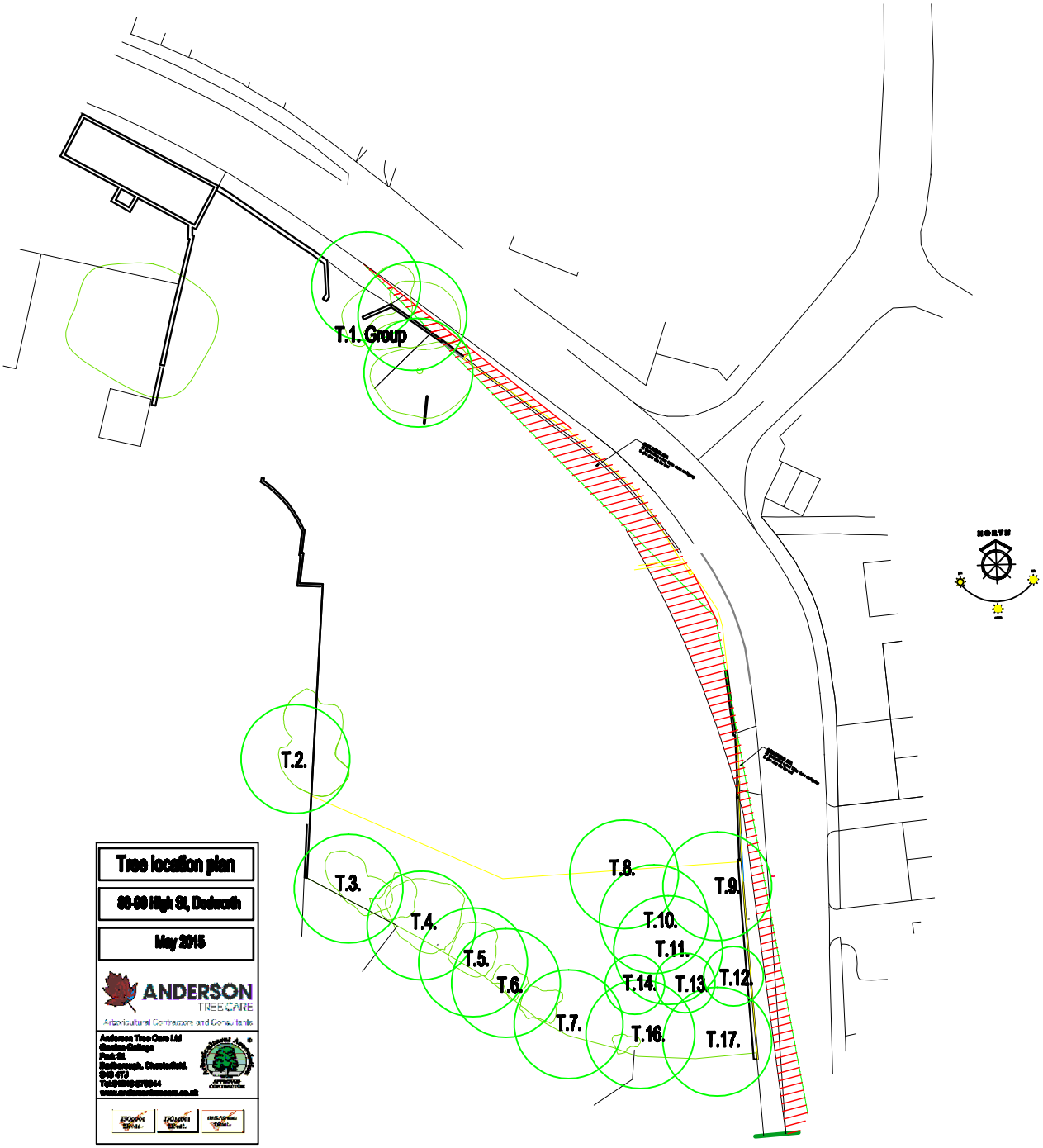
My main concern with regard to the development's future effect on trees would be the fact that plot 2 would have a garden dominated by trees. In an ideal world I would remove the suppressed Sycamores and Horse Chestnut beneath the Oak which would permit passers by a better view of the Oak. The Oak is the most important tree

in the group, for its value to biodiversity as well as its resilience. As I mentioned above it will need pruning and instigating a pruning regime as part of the development would be no bad thing.

Conclusion.

While this project might be perceived as having a detrimental effect on the tree stock of the neighbourhood, it is undeniable that the trees have been shown only small regard in the past. I see no reason why the scheme should not be the instigation of better tree management in the future, nor why the site could not continue to make a contribution to the neighbourhood tree stock in the long-term.

W. L. Anderson. Dip.Arb. (RFS) M.Arbor.A.
ANDERSON TREE CARE LIMITED. May 2015.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Tree location plan
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