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TREE CARE

Arboricultural Contractors and Consultants

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Tree Survey: Chesterfield Commerce Centre,
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Client: The East Midlands Chamber of Commerce,
via M John Gill, WMA Architects,
Norfolk House, Sheffield, S2 5HR.

Date of Survey: December 19th to 20th 2016.

Weather at time of Survey: Dull, cold.

File reference: Canal Wharf 01

- Appendices:**
1. Tree location plan.
 2. TPO protected trees plan, supplied by the borough's Tree Officer.

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Introduction.

This site is currently providing office accommodation to the organisation. I note that an educational establishment has also been accommodated here, but has recently moved on. The site appears to be a period building, which may be pastiche, with some utilitarian extensions. A vast proportion of the site has been surfaced and given over to car parking.

Tree Preservation Orders.

I e-mailed the Borough Tree Officer and discovered that the trees to the west of the site are protected by a Tree Preservation Order (TPO) served in 2002. I also discovered that planning permission has been granted on the adjacent site, which will involve removing a lot of the trees in group 16.

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 The Standard has been recently revised and the 2005 version withdrawn.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. <i>NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve.</i>
Trees to be considered for retention.	
Subcategories	
1. Mainly arboricultural 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).
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.
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.
2. Mainly landscape qualities	
	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features.
	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 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.
3. Mainly cultural qualities	
	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture).
	Trees with material conservation or other cultural value.
	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 707m², 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 (since 2014 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.	Ash	10	370	EM	C1	A decent young tree but very close to the car park's kerbed edge.	64
2.	Sycamore	8	220E	M	U	Extremely poor form and festooned with fencing wire. Really should be removed.	0
3.	Beech	12	600E	M	C1	Poor form albeit not entirely unattractive. Some vandal damage. Not clear if this tree is within the site. (see discussion)	163
4.	Sycamore	12	500E	M	C1	Crown somewhat tangled with tree 3, but OK. Some fencing wire attached.	113
5.	Sycamore	9	300	EM	C1	A reasonable specimen, growing with a large infestation of Cherry Laurel, which should be removed on the grounds that it's an invasive pest.	41
6.	Sycamore	12	410	M	C1	One-sided crown, partly due to tree 7 partly due to the adjacent car park and the Cherry Laurel. A small Hawthorn grows alongside.	81
7.	Sycamore	13	2 x 500E	M	C1	Outside the site but extremely close to the fence. Has suffered some poor pruning and some vandalism. NB that removal of the car park is almost certain to cause root damage to this tree.	238
8.	Horse Chestnut	18	790	M	C1	OK but has suffered some inexperienced pruning. Has a small lesion that might be Horse Chestnut Bleeding Canker. (See discussion below.) This tree is protected by the TPO.	290
9.	Beech	19	1060	M	C1	OK some aesthetically-unsatisfying but pragmatic pruning. Only 7 metres away from the building, has a 17 metre crown spread. This tree is protected by the TPO.	519

Tree No.	Species.	Ht	TD	Age class	Cate-gory	Comments.	RPA
10.	Horse Chestnut	18	850	M	C1	One sided crown due to suppression from tree 9. Some vandalism on the trunk and some superficial decay. This tree is protected by the TPO.	327
11.	Sycamore group	7	120 max	Y	C1	Coppice growth close to the boundary wall, 7 stems.	48
12.	Cherry	6	450	M	C1	A fairly typical ornamental tree planted on the site's frontage. Drain covers close to the base.	92
13.	Cherry	6	590	M	C1	As tree 12. Pronounced graft union at the top of the trunk.	163
14.	Poplar	11	460	M	C1	Poor form; one-sided crown due to tree 15.	102
15.	Sycamore	9	470	M	C1	OK but quite close to the boundary wall.	102
16.	Group	20 max	980E max	M/ OM	C2	Lime, Hornbeam, Sycamore and Horse Chestnut. There are some large trees in this group, unfortunately not in the best condition. Some have been damaged by natural causes and some have been damaged by inexpert pruning. I noted that at least one Hornbeam had shed a branch, damaging the fence and probably landing on the roof. Debris from that event is stacked at the base of the tree.	452

Discussion.

My over-riding impression of this site was that the neighbours found it annoying. This may seem like a strange thing to say but so many trees had been pruned, apparently by neighbours, that I gained a sense that the neighbours had all reached a point where their annoyance with them was sufficient to send them off to prune trees that were not actually their responsibility. When looked at in this way it is hardly surprising that the trees were inexpertly pruned. While I don't particularly like this state-of-affairs, I have some sympathy where people who have to put up with somebody else's trees are driven to the point where they take matters into their own hands.



Photograph 1.

I need to point out here that the Law permits people to cut overhanging branches back to their boundary, although how far this is permitted when a tree is TPO-protected is a moot topic and not a matter to be expanded upon here.

Photograph 1 is a view of tree 8, which I took in an effort to show the poor pruning. In this particular case it seems the people who have tired of the tree are not immediately next door, but at an adjoining property. It's likely that the perpetrators were concerned that the large branch was overhanging the outbuilding. The debris from this operation is simply stacked on the ground over the fence, which somewhat adds to that area's appearance of neglect.

Photograph 2 is a view of tree 7, which has also been pruned unsympathetically. This is at the opposite side of the site to tree 8, but it seems the neighbours are similarly annoyed by the trees. It isn't obvious where the site boundary is at this point, it seems the boundary fence has been diverted around the tree, it follows the easiest line rather than the actual boundary.

I do not like people pruning trees inexpertly although it is easy to see how frustration leads to it happening. I can imagine that the neighbours here found it difficult to contact the owners of this tree and simply took matters into their own hands.



Photograph 2.



Photograph 3.

Photograph 3 shows the base of tree 2, in the foreground and tree 3 in the background. Note that the boundary fence is tangled with tree 2, it is not worth attempting to retain tree 2. This sort of thing, tree trunks with wire in the middle are extremely difficult to deal with as chain saws will not cut wire. I presume that the concrete post is on the site's proper boundary and the wooden fence was erected to simply create an out-of-sight, out-of-mind situation. In this case it's out-of-site as well!

With tree 7 (in photo 2), apart from the fact that the wooden fence beyond has fallen down, it is possible that both adjoining landowners have attempted to dis-own the trees.

I don't know what is planned for this site but I consider it would be wise for the actual ownership and responsibility for these trees to be ascertained before finalising the proposal.

Photograph 4 is a view of trees 2, 3, and 4 from the roadside. The Beech tree 3 is a reasonably interesting shape although it's obviously going to need some maintenance work in the near future. This means removing tree 2 and ensuring that it is clear of the road.



Photograph 4.

We also need to ignore the vandalism and presume that tree 3 didn't suffer root damage when the neighbouring houses were built. It is something of a moot topic but it should be understood that removing a competing tree could be regarded as maintenance of a companion, which is the case here with trees 2 & 3. Tree 3 really needs tree 2 to be removed if it is to grow unhindered.



Photograph 5.

Photograph 5 is a view of the site from the car park entrance. Trees in the background are mainly in group 16, the larger tree in the centre is a Lime and is protected under the TPO. The trees at the right, between the grey roof and the stone building, are trees 8-10 (also TPO protected).



Photograph 6.

Photograph 6 is a view of trees 8-10 from the Hazlehurst Avenue car park. Well it's more tree 10 hiding trees 8 & 9, but it shows the trees' proximity to the grey building. (These trees are TPO-protected.)

I estimated the Beech tree's (9) distance from the building to be less than 7 metres and there is a footpath around the building. This means that this building was erected well within what is now recognised as the tree's RPA. To make matters worse there is a concrete slab between tree 9 and tree 11. I presume there was once a shed of some sort. If the slab has to be removed then heavy machinery will no doubt be working well within all these trees' RPAs.

NB also that some trees in group 16 are equally close to the building.

I took photograph 7 in an effort to show trees 8-10 in relation to the neighbouring houses. It wasn't entirely obvious at the time of my visit (it was dull) but these trees are exactly to the south of these properties and I'm sure that the occupants regard them as a severe shade-nuisance.



Photograph 7.

The evergreen shrubbery in this photo is Cherry Laurel and is within the site; the stone wall extends beyond the neighbouring house's boundary. I mentioned above that Cherry Laurel is an invasive pest, which is almost certain to be included in the next revision of schedule 9¹. That is the list of species that contains such species as Japanese Knotweed and the Grey Squirrel.



Photograph 8.

Cherry Laurel is non-native and suppresses other (native) species and is almost as much of a nuisance as Rhododendron in urban woodlands. Photograph 8 shows tree 6 with yet more Cherry Laurel between it and the site's boundary.

It is my opinion that invasive species are an under-appreciated threat to the nation's landscape and looking upon plants like this without considering how they might develop would be a mistake. If nothing else the expense of their management is not inconsiderable and managing a shrub of this size is already beyond the capabilities of the average householder or even a domestic DIY enthusiast. Merely getting rid of the debris will require a commercial wood-chipper and taking a chain saw to this sort of plant is not a task for an amateur.

¹ Wildlife and Countryside Act 1981. See also the CRoW Act (Countryside and Rights of Way, 2000) which has modified some parts of the 1981 Act.



Photograph 9.

I took photograph 9 in an effort to show trees 6 & 7 in relation to the houses beyond and also the adjacent Cherry Laurel.

As well as invasive species there are a number of tree diseases that are threatening the Country's tree-stock. The small black stain at the bottom of tree 8's trunk may not look like very much but is actually a symptom of Horse Chestnut Bleeding Canker. This is a disease (diseases?²) that is widespread at the moment and regarded as something of an epidemic.

The long-term prognosis for Horse Chestnut as a species is uncertain but some thought could be given to whether this is a situation brought about by the country having an aging tree population. (As a general rule younger trees are more resilient.)



Photograph 10.

In other words, is the tree population more susceptible to disease because we're failing to renew it at an appropriate rate? This is not really a question for this report to answer but it is something that the planning application might consider. It's reasonable to ask whether a new development with a good tree-stock (a range of species) might benefit biodiversity more than retaining elderly decrepit trees would?

² See <http://www.forestry.gov.uk/horsechestnutbleedingcanker>.

I'm not completely familiar with the planning application on the adjacent plot but I note (from the Tree Officer's comments and the Council website) that a large proportion of the trees in that site are slated for removal. This maybe because they are in poor condition. While access to that site for a tree inspection was not available to me it is clear that the trees have been neglected for a considerable period and I presume that the reason the planning permission was granted is that the Tree Officer acknowledged that state of affairs.

Having reflected on this project at some length I think the main consideration of the project is how the demolition work that will be required might be undertaken. While BS5837 acknowledges that work to trees might need to be undertaken simply to facilitate demolition of existing buildings or infrastructure, it also requires a realistic assessment of the probable impact of any proposal upon trees.



Photograph 11.

Photograph 11 shows tree 1. While this is superficially a decent tree, I am forced to ask how the car park surfacing at its base might be removed without causing root damage. Removing the tarmac by hand might seem simple enough but in reality by the time the tarmac's sub-base is removed some root damage is almost certain to have been caused. Clearly it's a young-ish tree and therefore ought to be reasonably resilient to such disturbance, but there is always a risk that it would not survive. Therefore asking if it would not be better to simply remove it and plant a new tree when construction work is complete is an entirely reasonable question.

In the case of tree 1 I consider the sensible option would be to remove the tree and plant a new one when the surfacing is removed. This might seem like a luddite-solution but a tree like this does not offer any unusual value to biodiversity and a similar new tree could be fairly readily grown. If the tree was retained then the worst possible outcome would be for it to be affected by the nearby works, for it to then spend several years as a moribund nondescript specimen before finally dying. When looked at in this way the replanting option, enforced via planning condition, seems a far better outcome.

This concludes my observations on the trees at this site.

Conclusion.

Bearing in mind I do not know of any specific intentions for the site beyond it being residential, I found no trees that have characteristics that should allow them to stand in the way of a development project.

I acknowledge that some trees are protected by a Tree Preservation Order but there is currently no obvious reason for their protected status.

I recommend that the precise boundary of the site is ascertained with a view to properly addressing the boundary trees' appropriate management. This may mean negotiating with the adjacent landowner to put in place a schedule of works, and may well mean removal and replacement of some trees.

I recommend that the layout for the site takes into account the trees just beyond the western boundary. It appears (from the plans on the Council website) that the approved layout there intends the retention of some trees that will be rather close to this site and in an elevated position, with the potential to be a shade nuisance.

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Tree Location plan
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