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NEWS, EVENTS, SCIENCE AND OPINION

Tree valuation revisited

Julian Morris

Roy Goodwin's recent article 'Tree Valuation – some thoughts' (*The ARB Magazine* 160, spring 2013, 28) largely summarised the view I have held for some time that the subject of tree valuation currently stands in an unsatisfactory state.

Each competing (or should that be complementary?) system has its proponents and detractors, just as it has strengths and weaknesses, and it is probably fair to say that if any one system had managed to overcome its weaknesses it would by now prevail and have reached wide acceptance and use within arboriculture. The ultimate challenge, as I and others see it, is to go beyond that and find acceptance with accountants, insurers, planners and property valuers.

Several years ago I completed a move to arboriculture; for the preceding 20 years I had been a chartered surveyor and valuer. When the subject of tree valuation came up in my arb studies, I felt – and still do – that some of the existing systems are scarcely valuations at all and certainly would not stand up to some of the basic tests that accountants, property valuers and public/corporate clients would subject them to before accepting them as objective measures of value.

Knowing as I do both arboriculturists and valuers, I would generalise by saying that the former understand little about valuation principles and the latter understand even less about trees. Yet tree valuation and property valuation share many principles and I believe they could both be done from a common perspective and to a common standard, albeit one which recognises that trees are a very particular type of property. We need to make these links and apply a valuation standard or to stop calling tree valuations 'valuations' outside the tree world.

What are trees?

In the legal sense, trees are heritable property, following the longstanding principle of *'quicquid plantatur est, solo cedit'* (that which grows on the land, goes with the land). It matters not that

trees can be moved, however cheaply or expensively, for buildings can also be moved (expensively), yet they are undoubtedly heritable and go with the land. When buildings are demolished or collapse they are rubble. When trees are cut down or fall over they are timber. The principle is the same.

What is being valued?

To date I have never seen it stated in a tree valuation that what is being valued is not the tree but the land on which it stands and an assumption that the tree will remain undisturbed there and in exclusive occupation of the land. What then is a tree valuation if it is not a property valuation, albeit under a particular set of assumptions? Perhaps the most fundamental assumption to be made and stated in a valuation report is the amount of land that the tree (including and especially its roots) is to be allowed to continue to occupy.

What value would a tree have without land?

It has famously been said that there are only three things that affect the value of property: location, location and location. Yet this is sorely passed over in the current tree valuation methods. One might interject that a tree can be bought for a fixed price and planted in any suitable position: what difference does location make? But the same can be said of buildings – a house built in an exclusive locale for £250,000 might immediately be worth £1m; exactly the same building could be put up at the same cost in a poor location and be worth only £250,000. Broadly speaking, we can conclude that the house plots have contributed £750,000 and £0 respectively. The same rationale can be applied to trees.

The property valuer's instinct would be that the land's role is as accommodation for the building (or tree). Where his instinct might fail him in valuing amenity trees is in considering the extent to which the land enhances the asset over time. It is only with space to grow, gather light, water and

nutrients and take support that the tree can continue to live and to increase in size. The nutrients come from the land and all the other factors come from the exclusive occupation of the land.

And for whom?

It must be said that in property valuation what is being valued is not the property but the legal right in the property (to occupy it, to sell it and keep the proceeds, to rent it out and keep the rent etc.). To arrive at a valuation, the rent or annual value of occupation can be capitalised, or the likely sale value can be estimated. However, in the end it is a legal interest that is valued not a property. Where there are lots of transactions of similar properties among lots of sellers and buyers (as in the housing market) the properties are akin to commodities and in everyday parlance have a value. Conversely, this cannot be said of established amenity tree land.

In the meantime, the amenity benefit of trees is frequently and effortlessly enjoyed for free by others, simply because trees can be seen from afar and do not recognise property boundaries or ownerships. It is the single biggest paradox, to my mind, that the amenity tree valuer is expected to value these benefits, often without even deduction or apportionment of the owner's value. I will allude to this later.

What is a valuer, and what is he doing?

The valuer's role is to imitate the market, never to invent one, nor to rely on calculations that are beyond the abilities and practices of the sellers and buyers that his valuation imitates. He must be satisfied as to the quantities of buyers and sellers in the market (creating the supply and demand and relative scarcity) and the quantum of completed recent transactions for similar properties ('comparable evidence') so that he can apply all this market information and evidence to the property interest being valued. Professional judgement, rarely more than extrapolations or interpolations, can be used to fill in the gaps in market evidence. Qualitative judgements must be a reflection of the marketplace, and subjectivity must be kept to a minimum, if not eliminated. Fundamentally, the basic principles of the open market (namely buyer and seller acting prudently, knowledgeably and willingly and without special interest, after adequate marketing and negotiation) must be assumed and used in the valuation. This brings consistent definition to valuations, allowing

valuations by different valuers in different locations to be compared with each other. Where there is no market or the parties are constrained in some way, the valuation stops being a valuation and becomes an estimate of worth. Calling these 'valuations' is inappropriate.

The imperfections of the market

And here we come across a major difficulty for the tree valuer. Unlike similar houses in similar streets, amenity trees (and of course the land on which they stand) are very rarely sold, and even more rarely (possibly never) on the open market, resulting in an absence of comparable evidence. Almost invariably amenity trees and their land are sold along with a larger property, making analysis of the tree component of the price almost impossible. In my experience the top bidder for a house might immediately have mature and shapely trees cut down on the day they move in, or embark on intensive amenity tree planting. How much of the price did they really attribute to the presence or absence of trees?

Presented with a lack of reliable and comparable evidence, the valuer's training is to fall back on a cost-based method, one that will be not unfamiliar to tree valuers. The underlying principle deserves to be restated here. If someone willingly builds a property or plants a tree at a particular cost, it can be assumed that it is worth at least that much to him. The principle allows cost to become a proxy for value. Initially the equation is sound. The market for the supply and planting of trees (and the demand for these) has at least been tested.

After the passage of time, though, the assumption may lose validity. Firstly the owner may change his tastes or needs, or may not even be the original owner. Secondly the asset will have changed in nature and so in value (generally a building may have deteriorated or a tree increased in size). Adjustments to the equation are needed. For the corporate owner, it may suffice to have a valuer revalue the asset from time to time for his balance sheet, by applying depreciation to the estimated cost of a modern replacement. Thus over a predetermined number of years the original cost will be written off in annual chunks in a way that should mirror the way that the asset's value is used up by the passage of time. For a building, components and finishes and the whole fabric may deteriorate, making repairs more expensive and occupation less beneficial. If the asset increasingly no longer meets the occupier's needs,

its value can be downgraded by a factor known as obsolescence. These principles are known collectively as depreciation, already the basis of at least one tree valuation method.

Would it were this simple for the tree and for its valuer! The lifespans of some tree species may make a mockery of objective depreciation. More significantly, the tree arguably gets more valuable all the time simply by growing bigger, like a building that is gradually expanding. Then it might go into rapid decline, potentially leaving the owner with a legal and financial liability. Modern equivalent replacement for an established mature tree may be impossible to price and almost impossible to achieve. Simple extrapolation of purchase and planting costs is not enough; they ignore the reality that a tree in a container eventually has no valuable prospects whereas an established one (with the benefit of the land) does.

As a final comment on depreciated replacement cost valuations, I would add that the land value is not consumed by depreciation or obsolescence and, but for demolition and other sundry costs at the end of a building's useful life, the land can be used for another purpose. The same can be said of trees, the analogy including that trees have 'demolition costs' just like buildings. And if the wood is more valuable than the felling costs the end costs will be a positive value. With this in mind, and particularly if land value is to be reflected, it is hard to comprehend zero valuations.

The time value of money

A bird in the hand is worth two in the bush. Likewise for the property landlord the value he attaches now to the rent he hopes to receive from his steady tenant next year is more valuable than the rent from the year after that, and more valuable than a higher rent from an unreliable tenant. He may also take a view on whether the area is improving or declining and discount the value of future income accordingly. Certainty and imminence are at a premium, declining with time and prospects. A flipside is true for the market and for the valuer. Capital costs can be 'decapitalised' using an appropriate borrowing rate to calculate an annual equivalent. Valuers have to juggle these factors, and are armed with a set of simple calculations (or valuation tables that have the calculations already done for them). However the valuer produces the number, he must have a good understanding of the principles behind the calculations and must choose appropriate inputs

(particularly the discount rate) based on comparable transactions. Beyond that, the mathematics is a formality.

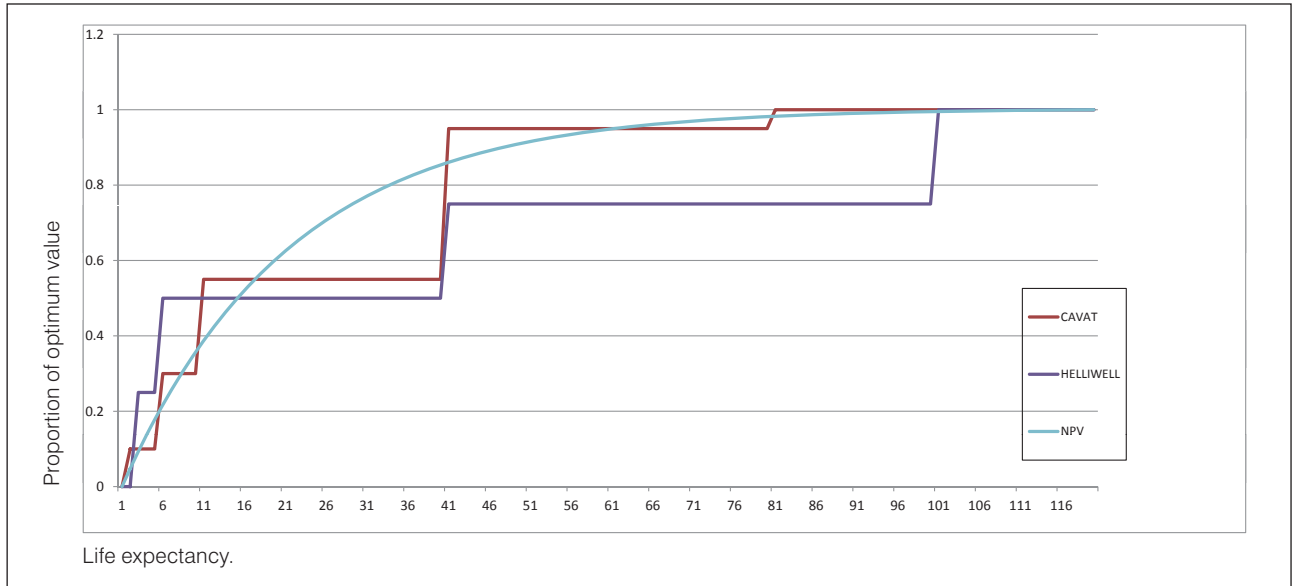
Each period's net income, stretching off into the foreseeable future, is given a 'today' equivalent (known as 'present value') that reflects its prospects and its distance into the future. Then all the present values for all the periods are added together. This can be offset against immediate or future expenditure by the same simple calculations. Annual landlord's costs such as insurance and repairs can be deducted before calculating present values. The final sum is known as net present value, which, hopefully it can be seen, can be used to mix and match present and future annual and capital values.

As an example of the use of present value techniques, net present value (at 5% discount rate) is shown in the figure opposite. The proportion of optimum value (equaling 1) is plotted as a function of years' life expectancy. For comparison, the equivalent stepped values for tree life expectancy by the Helliwell and CAVAT systems are shown.

I believe that amenity tree valuation could take a lot from net present value techniques, having as they do the ability to weigh up initial purchase and planting costs, steady increases in modern equivalent replacement cost as trees grow, annual costs like pruning or leaf-collection, end costs like felling and stump removal and soil repletion, end timber values, and known mortality rates and life expectancies for tree species. Furthermore if the ideal form of the tree in its position is decided upon and is capable of being maintained by periodic pruning, it appeals to the valuer in me that dependence on subjective obsolescence depreciation can largely be removed.

Incongruities and conclusions

Even armed with a robust valuation, the problem is not yet solved. Consider our amenity tree that is enjoyed by all the neighbouring proprietors. In assessing its value we might be tempted to quantify the benefits enjoyed by them. However, they have no control over it and no expectation that it will remain, except in a broad probabilistic sense that if the owner enjoys it he will keep it and so they will continue to enjoy its amenity. Falling back on the principle that the valuer is valuing a legal interest in land on which a tree is situated, it is a nonsense for him to try and value the neighbour's legal interest (none) in the owner's land.



The proportion of optimum value (equaling 1) is plotted as a function of years' life expectancy. For comparison, the equivalent stepped values for tree life expectancy by the Helliwell and CAVAT systems are shown.

However, this is exactly what happens when a tree is subject to a tree preservation order. The public has taken a statutory controlling interest in the property on which the tree stands in order to protect the valuable public amenity that the tree provides. This may seem an uncomfortable imposition on the owner, yet it is only so if the owner does not also enjoy the tree. And a valuation may only be called for retrospectively if a tree is removed unlawfully and a measure of financial penalty or recompense is needed. In the circumstances, it begs the question as to whether these are

valuations at all since there is no buyer, no seller and no market.

My conclusion as arboriculturist and ex-valuer is that all of the existing methods of tree valuation that I have seen have elements that are consistent with sound property valuation principles; however, the extent of valuer subjectivity required, the lack of proper expression of what is being valued and for what purpose, and the extent to which it truly constitutes a valuation rather than an estimate of worth precludes use of them as property valuations for broader acceptance.

The lack of proper reflection of the role of the land in them undermines their meaningfulness. I also believe there is considerable scope to examine the net present value method for elements that can be learnt and simply applied to existing amenity tree valuation methods to reduce subjectivity, to the same end. I hope my thoughts and experiences are a useful contribution to the ongoing debate.

Julian is happy to offer fuller explanations of the subjects covered in his article and can be reached at jamorris@mail.com.





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