

A form of engagement

In The autumn of 2011 few arborists were prepared to become involved with the defense of the TV oak.

Any that did were swiftly condemned publicly as idiots in discussion forums as even then the debate was horribly infected, any challenge or argumentation against the traffic departments tree experts was unacceptable. Old friends were obviously becoming alienated.

Most of the discussion forums were filled with argumentation between colleagues about whether to fell and re-plant or whether to prune the tree very hard and retain a high stump for beetles.

A few, mostly Stockholm arborists who knew the tree, and understood the history of the debate, were suspicious, I had, at that time made no opinion.

Neither Daniel Daggfeldt or myself were involved, nor did we wish to become involved.

I remember, at that time, being saddened by the way in which oak "protesters" were presented in the media and in particular I was disappointed that it seemed a simple thing to label them as slightly ridiculous "tree huggers".

These were "Östermalm bo" who had a "complete disregard for public safety" and "no expertise" in the question of safety, where as Traffik kontortet had reports from tree experts at SLU and their own consultants that considered the tree was an **acute** hazard.

The press presentation was clearly loaded to portray tree lovers as an excentric, irresponsible problem, the road was also closed, at great inconvenience to commuters and residents because public safety was supposed to be at immediate risk.

The "tree huggers" were portrayed as a problem.

Some colleagues in Stockholm had sent me a copy of the PM that lay as the basis for the felling decision. This PM was clearly inadequate.

- The document had no current, consistent data that demonstrated the tree was acutely dangerous.
- The document contained serious and basic errors in identification of the fungal interactions within the tree.
- Fungi were identified incorrectly, and their significance in the decay process within the wood was exaggerated, *Fistulina hepatica* was stated by TK as causing root decay, this organism has never been associated with root decay. Decay caused by *Laetiporus sulphureus* was stated as being serious when in actual fact this is normal in oaks of this size and age and the reports contained no structural data demonstrating or supporting structural weakness, only assumption.
- *Ek Ticka* (*Phellinus robustus*) was stated as being a significant decay agent when infact the actual decay fungi present was a more saprophytic organism *Daedalea quercina*. The oak maze gill.

- Any kind of historic inspection protocols or documentation supporting the removal/felling argument were missing. Only Visual observation and "visits" were recorded but without details or written records. This is very unusual.
- The contention that Klas Volbrecht had made an "Allvarlig varning" about the tree also seemed very strange to me. Volbrecht is a very thorough, experienced professional who would only make such a statement about a historically significant tree after measurement with instruments, careful consideration, and a written report. No such report existed.
- As it turns out, Volbrecht had never seen, or made any statement about the condition of the tree. Volbrecht was very clear about this when questioned in interview.
- The inspection methodology in the felling decision was incomplete. No data or measurements supported the conclusion that the tree was dangerous and no arborist had made complete inspection of the stem below street level, instead the PM had ignored the complete picture focusing only on what was wrong with the tree not what was right with the tree. This is not in my experience consistent with professional arborist engagement and made the PM biased, the question then for me was why?.

At some point, I broke the silence and entered the debate, I wrote on a facebook forum the following three central questions.

- Has anyone undertaken complete 3d tomography to correctly assess the relative strength loss and assess the modulus of elasticity of the entire oak stem. If not why not?
- Has any one any information regarding the bending strength of the wood fibres where decay is present and further more has any one assessed the likely loads the tree stem is exposed to? If not why not?
- Has anyone undertaken a Quantitative tree risk analysis of this tree to put risk and benefit in perspective.

Within two minutes of these comments entering the forum, they were removed by the moderator.

Within a hour of these comments being removed, Henrik Waldenstam of the WWF in Stockholm had called and asked for an independent assesment of the tree.

I explained that we could do so, but that we would be entirely independent and that he should not expect a positive outcome.

We would collect data to answer two basic central questions regarding the safety of the tree.

What is the current load bearing strength of the stem?

What are the likely loads the tree stem is exposed to?

This is the only way to answer the question of structural tree stem safety.

The results of our detailed inspection of the tree stem and main branch system are well documented, they have been duplicated in separate measurements by Daniel Daggfeldt of Trädmästerna and reviewed by Frank Rinn, Director of the International Society of Arboriculture (Germany), inventor of the resistograph and soundwave tomograph.

During our 7hr investigation.

- We made measurements at 96 seperate points along the entire stem. We climbed down into the tight space of the tree well, the first arborists to make measurements and record data here on the standing tree.
- We measured at soil level over dead phloem tissue.
- No roots were inspected because no roots were visible.
- We made a full investigation of the first 420cm of the stem and one main limb.
- Decay was present at all points. This is quite normal in very old trees.
- **The maximum relative Strength loss in the oak stem was only 32%.**
- **This provides a very high safety factor.**
- In addition the wind loads that the tree is likely to be exposed to are very low.
- Even very light pruning can be demonstated to reduce potential wind loads significantly.
- We said tree was probably 40 times stronger than it needed to be. Since felling and further assessment of the actual wood Rinn estimates the tree to be in excess of 100 times stronger than necessary.
- The QTRA assessment of the tree, was 1:100,000 probability of serious harm and was therefore a perfectly tolerable risk.

The details of our investigations were presented to the traffic office before felling and represent the only complete investigation of the whole tree.

The Solfjeld report presented by the traffic office days before felling, never made any measurements of the entire tree stem or any measurements of stem loading forces and was therefore completely inconclusive. Despite this Solfjeld stated that the tree was probably not acutely dangerous and the kommun could choose to do nothing.

Despite this strong evidence from what became known as the independent arborist group, the tree was felled in the night by a member of Svenska trädforeningen committee.

The independent arborist group has now grown considerably and is called Sveriges Arboristforbund.

Valkommen.

Jon Hartill.
Orforanden.