

Critic of the Solfeld report.

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The following points summerise the groups views.

- In the rapport Root decay is blamed for low tree stability , low vitality and potential risk.

Solfeld **has not inspected any roots** and **cannot know** that root rot or death is present.

- The report goes on to speculate that root death is the cause of low vitality and branch death.

There are many reasons for the single dead branch. Single branch death **does not** indicate instability in roots and **is not** justification to fell an ancient tree.

Is it also possible that the heavy reduction pruning ¹in the last eight years and the subsequent reduction in photosynthetic leaf area could be an alternative cause of branch death in an ancient tree?

The standard recommendations for tree work to ancient trees² are to spread pruning³ over a longer period of time (Read, 2000) due to their more limited capacity to respond. This has **not been mentioned** in the report.

Trees are autotrophic⁴ and energy for their metabolism⁵ comes from the leaf. Root decay and die back are **unlikely** to cause single branch death of the type visible here, but more likely shoot death and tip dieback over the entire crown.

- The report suspects methane asphyxiation of the roots.

Root death and the fine root methane asphyxiation⁶ mentioned in the report, would also affect the uptake and transportation of water and macro -nutrients⁷ which would cause early leaf fall, obvious leaf discolouration or chlorosis⁸.

Recent photographs of the tree in late summer 2011 **do not** show this characteristic.

¹ Reduktions beskärning, minska längden på en gren eller omfånget på ett träds krona

² Veteran träd, evighetsträd, Träd med exceptionellt högt värde som historie-, kultur-, ekologi-och biodiversitetsbärare

³ beskärning

⁴ Organism som har förmågan att skapa sin egen energi

⁵ ämnesomsättning

⁶ Syrefattig nedbrytning av kolföreningar (tex socker som transporterats från bladen) kan ge upphov till att metangas bildas som är direkt giftigt eller orsakar att rötterna kvävs

⁷ Makronäringsämnen, Växternas viktigaste byggstenar för att kunna växa

⁸ Kloros, döda blad eller delar av bladet

- The rapport makes unsupported assumptions that thin foliage is a result of poor vitality.

The thin foliage, the dieback of branches or twigs and the only partially compensating epicormic⁹ growth can be attributed to the diminishing presence of tree species specific ectomycorrhizal symbionts¹⁰ connected with the roots and the tree's transport system and with this phenomenon, the associated reduction of the uptake of water and nutrients/minerals necessary for producing living tissues¹¹. **This does not make the tree a hazard.**

- The report states that the leaf area is not sufficient to support a healthy tree.

This may also be a consequence of the natural aging processes of ancient oaks, whereby the crown goes through a phase of retrenchment¹²(Fay, 2002). This is supported by the fact that there is partial epicormic growth in the inner crown. The process of retrenchment results in thinning in the external branches that reduce potential wind load exponentially increasing the relative strength of the supporting stem and branch wood. This is a natural normal process visible in all ancient oaks and they can go through this process many times over several centuries (Fay 2002, Read 2000, Raimbault, 2006, 2007). The retrenchment process naturally reduces the wind loading in the upper crown and also in areas where there is decay This is why old oaks can become extremely hollow yet **retain a high typical tree stability.**

- The report makes incorrect conclusions on the parasitic behaviour of the macro fungi identified.

To begin with, due to Trafikkontorets error in identification of the macrofungi present and the assessment of their tree species specific wood degrading strategies, some basic errors were made, that invalidated and biased the outcome of the investigation on the condition and stability of the oak.

It was stated, that the trunk at greater height was white rotted by the perennial biotrophic¹³ parasitic¹⁴ tree species specific *Phellinus robustus*¹⁵, which turned out to be the perennial, partially sterile fruiting brown rotting tree species specific *Daedalea quercina*¹⁶(source Tobias Fischer).

⁹ Vilande knoppar som kan aktiveras vid tex stress och som kan bilda nya grenar med blad.

¹⁰ Särskilda svampar som samarbetar med trädets rötter för att utbyta näringsämnen lösta i vatten och sockerlösning

¹¹ Vävnad, biologiskt material tex splintved

¹² "omgruppering" trädets naturliga anpassning till nya förutsättningar, tillbakabildandet av kronans volym för att minska risken för grenbrott.

¹³ Beroende av levande celler

¹⁴ Parasitisk, dödar levande celler för att kunna tillgodogöra sig energin i veden

¹⁵ Ekticka

¹⁶ Korkmussling

The implications of the panicfruting¹⁷ in terms of development of the decay was **overlooked** and **not taken into consideration** neither was the whole tree assessed for further fungal activities (Ganoderma, lipsiense¹⁸ or something that really would compromise the trees stability.). The lower stem was completely omitted. (Youtube film evidence of Solfeld inspection)

Daedalea quercina is a perennial tree species specific necrotrophic¹⁹ parasitic, although mostly saprotrophic brown rotter in/on oak, decomposing the heartwood (of the trunk of upright standing trees) at greater height , of fallen trunks that are decayed and hollowed in a way comparable to what is caused by L. sulphureus, which also can be present in other parts of the tree (trunk base, major branches) then D. quercina is). (Source Gerrit Jan Kiezer)

- The report incorrectly interprets Fistulina hepatica as a cause of root buttress decay.

The presence of an annual fruit body of the tree species specific Fistulina hepatica²⁰ and the bark and cambium necrosis caused by its mycelium at the base of the trunk was misinterpreted as the tree losing a major root/buttress and being at risk of tipping over, which is **utter nonsense**, because Fistulina hepatica **never has** been responsible for the (wind)throw of an oak (or sweet chestnut), with which it has a unique relationship investing in both the tree and the fungus to grow old together.

After felling, the stem cut turned out to have a respectable T/R ratio, which was to be expected from the primal stage of brown rot caused by the vinegar acid "consuming" mycelium of Fistulina hepatica. As all three brown rotters present, including Laetiporus sulphureus²¹, are part of the second phase of 200-300 years of the tree species specific ecosystem and life cycle of Quercus robur, this was²² "preparing" the tree to enter its third phase of yet another 200-300 years,

An old oak was felled, that had just entered the second phase of its life cycle and could have become a veteran of 600-900 years old, if the crown had been reduced in two stages and because of the enclosure by a narrow circular stone wall, (the well around the stem) degraded root system had been given the space to restore its roots and their associations with more or less tree species specific ectomycorrhizal macrofungi that are needed and that are essential for the revival of the tree as a whole. (Source Gerrit Jan Kiezer)

- The report completely ignores this well documented role fungi play in ancient oak retrenchment.

¹⁷ Tillstånd då svampen antingen gjort slut på tillgänglig energi eller är starkt utsatt för stark konkurrens

¹⁸ Platticka

¹⁹ Lever på död ved

²⁰ Oxtungsvamp

²¹ Svavelticka

²² Skogs ek, vanlig ek

The complex relationship and the role that the fungi present have in the ageing retrenchment process (such as *Laetiporous sulphureus*, *Fistulina hepatica* and *Daedalea quercina*) are not mentioned. These species are common in ancient oaks and most commonly are involved **in slow decay** of the heartwood only. (Rayner, 1993, Schwartze, 2001) . Visual comparisson of Picus tomography taken 2003 with Arbortom 2011 are remarkable similar in density patterns although no relative strength loss assessments were recorded of the 2003, 2006 picus tomographs. The question remains therefore, why undertake the 2003 and 2006 tomography if no relative strength measurements are recorded?

- The report states that the cable system is correct.

No cable load calculations were made when the systems were installed therefore their security and the maximum loads they were exposed to remain unknown. The security of the systems cannot be assessed accurately now or retrospectively therefore doubt has arisen over branch stability and the cable system. **This does not mean the branches will fail or unacceptable risk exists.**

- The report claims that the tree could be a risk in wind.

Any qualified wind load assessment on the structure of the tree (taking account of the fact that the tree is sheltered amongst high buildings) is **missing entirely** from the report. **There is no evidence to support this.**

- The report states that stem decay is advanced.

There is no mention or calculation of of the presence of large areas of high quality compression wood and the potential for this compensating for any cellulose²³ degradation that may have occurred.

- The report does not include any inspection of the stem lower than 2.50 m

A structural assessment of the lowest 2.50 meters of the stem and main roots is **completely missing in the report.**

As a structural tree assessment, this in its self **negates any finite conclusion** and **renders the report entirely invalid in its findings.** The lower stem is the main structural component of the tree along with the roots. No objective assessment has been made of their status.

- The report contains no data and the conclusions are totally unsupported.

Data from the resistograph²⁴ drilling **is completely absent** from the report, including the locations at which the data was extracted. Observations of structural weakness are **not supported** by any data as evidence.

²³ Den del som de brunrötande svamparna främst konsumerar

²⁴ Instrument som mäter motståndet i veden och används för att upptäcka håligheter och försvagningar.

This data is vital when undertaking stem load calculations from wind . The report **cannot reach any reasonable conclusions** regarding stability in storm winds, gusting, calibration of resonance forces, torsion forces and drag coefficients.

There is no accurate assessment of:

1. wind force loads on the crown,
 2. the crown area,
 3. stem bending moment,
- The report fails to carry out Quantified risk assessment if perceived tree hazard.

No trees are perfect, and an arborist can find faults in any tree.

Even apparently healthy trees can fail. The report fails to assess the likelihood of the perceived hazards occurring and the probability that damage will occur.

It does not set the risks in perspective and therefore is biased.

The perceived risks have instead been exaggerated and not set in perspective with the other risks that Stockholm citizens engage with daily. For example the likelihood of trafik accidents ,or violent crime. Statistics would probably demonstrate that these are amuch greater risk than being hit by a tree.

- The report makes conclusions which are not supported by any evidence other than personal observation. Whilst observation is part of the evaluation process instruments and their data must be used and the data recorded, to support conclusions.
- **The conclusions of the report are not appropriate management solutions for this tree.**

There is no reference to any historical, environmental or ecological values for the tree. Ancient trees can live to many hundreds of years and house a host of dependant organisms, many of which are Red-Listed (Fistulina hepatica (NT²⁵) or protected by the **EU Habitat and Species Directive**. In order to fully assess the condition of this tree, further assessment would have been required taking account of the issues above as well as a biodiversity, historical and environmental assessment.

This tree is one of only 32 trees in Stockholm with a girth of over 594cms. In Sweden there are 579 oaks of this size that are considered to be in good health, which makes up less than 1% of the trees worthy of conservation in Sweden.

This tree was in relatively good health.

Conclusion of the review group.

- The report contains no data to review.
- Omits major structural parts of the tree,
- Seriously misinterprets fungal interactions,
- Contains major flaws in diagnoses structural decay.and relative wood strength.
- Makes entirely the wrong recommendations.

It does however say that the kommun can "turn their backs" and do nothing.

²⁵ Arten är nära hot och missgynnad. Minskningstakten har uppgått till 15 % under de senaste 50 åren pga försämrade habitatets kvalitet, ArtDatabanken

We agree with this in part, as the situation was not acute and the tree was not immediately hazardous to public safety.

This tree was in effect unique, as historically important and culturally relevant as any Rembrandt painting or Michael Angelo ceiling.

The unnecessary destruction of this ancient oak, on the basis of the content of this report, is unacceptable by any standards of competent management.

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