ARBORICULTURAL REPORT

EKORN TREPLEIE AS

APPROVED ARBORICULTURAL CONTRACTOR FIRM ESTABLISHED 2013

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Report Overview

This inspection and report cover the entire tree stock under the curtilage of Kongensgate 21, Moss, paying special attention the to the large Fagus tree located at Easting: 594543, Northing: 6589753. The client, Oslo House AS and Architect, Edit-atelier are concerned about the health of the tree stock and the safe retention of high value trees.
All construction projects undertaken within proximity to trees require careful planning at the design stage with special considerations and specifications made in relation to trees which are worthy of retention or have high amenity value. A qualified Arboricultural consultant is required from early planning stages to project completion in order to protect tree stock and advise all stakeholders as required.

The report is based upon data collected by Douglas Baylin and Thomas Shepherd over two visits on 18th November and 3rd December 2019. Weather conditions were overcast, intermittent snow showers, wind speeds up to 2m/s with enough visibility to conduct the inspection. The tree assessment involved visual and tactile inspection from ground level, probing for roots and probing the cracks and cavities on the main stem of T1, with the intention of collecting root and crown spread data, identifying distinct defects and other characteristics of all trees within the confines of the boundary.

Evaluation Key	
Condition	**Size (relevant to species)**
G - Good	S - Small
F - Fair	M - Medium
P - Poor	ML – Medium to Large
D - Dead	L - Large

Key To Trees
Fagus sylvatica: Bøk
Acer pseudoplatanus: Platan Lønn
Acer platanoides: Lønn
Pyrus communis: Pære tre

Evaluation

Tree	Species	Observations	Condition	Size class	Age	Rating	Recommendations
T1	*Fagus sylvatica*	Root Zone Generally, the probe can penetrate to 1m showing soil is loose and no hard rock underneath meaning roots will be able to penetrate deeply all over the bank. Roots discovered: 3m from stem 30cm down West 5m from stem 70 cm down North 1.5m from stem 70 cm down South West bordering the asphalt. 1m from stem 45 cm down North East bordering the asphalt. 1m from stem 40cm down South East towards asphalt. Extensive probing on upper car park side along the kerb stone finds very few roots within the top 70 cm, it is surmised that the roots are below this and possibly very deep under the asphalt of the car park. It is apparent that the ground level on the Ssouth side has been raised against the tree by approximately 1m, possibly many years ago. Main stem: West stem has old wound completely healed over and sounding partially hollow up to 30cm above and more than this below the previous pruning wound (when tested with resonance mallet). Main union at 2 m fundamentally flawed with included bark on two main unions, however probing finds no deep cavities, but solid bark and wood (see Picture 4&5) Upper cavity on North side of North East stem previous scaffold limb removed around 15-20 years ago. Cavity chamber is approximately 30 cm in diameter, cavity entrance is 10 cm across decreasing (healing over) and cavity is solid below 20 cm deep. The wall of the cavity is about 10 to 15 cm thick on the North side.	G	L	150	2	Suitable for retention with caveats. The tree will require careful considerations during the design and construction phase of the site and monitoring at all intervals which may impact health. Subsequent health and condition surveys are required annually for the first seven years after completion of the project with a view to extending the survey to every three years after that.

Tree	Species	Observations	Condition	Size class	Age	Rating	Recommendations
		Tiny adventitious roots starting to form inside the cavity. Sounding solid when tested with rubber mallet around the cavity. (see Picture 2&3) **Location UTM Easting**: 594543 **Northing**: 6589753 **MOH of tree at base**: 21.5m (1m accuracy) **Diameter at 1m**: 113.5cm **Height of crown**: 17.5m **Root Protection Zone (Radius from tree centre on all sides)**: 13.62m					
G1	*Acer pseudoplatanus & Acer platanoides*	Other trees on the site are Acer family both Sycamore and Norway maple trees are of no particular interest in comparison to the Fagus tree and that is because of poor structure in the Norway maple and because Sycamore is an invasive species, felling and replanting in suitable locations to the benefit of the construction project is hereby recommended. There is another smaller tree to the North East side of T1 with poor main stem union and this Sycamore is also recommended to be felled and replanted.	F & P	M	40	2	Fell and Replant.
T2	*Pyrus communis*	One more tree of reasonable interest is a Pear tree further to the North has good habitat potential and because this is a long living tree it has the possibility to contribute to the character of the new building project if it is in a suitable location. It des however have a large cavity on the main stem which, while supporting wildlife, is quite large and will shorten the trees lifespan.	G	L	50	1	Retain if tree does not conflict with project layout.

Conclusion

T1 has significant environmental value and should be acknowledged as one of the most monumental trees in the city. Care should be taken to ensure the tree is preserved as a large contributor to the local wildlife, as one of the oldest figures in the city, as an object of inspiration and a historic cultural monument.

Important factors to consider during the planning process are:

The future crown and root reach- growing space must be factored into the new development, the tree will continue to spread out and will need space to grow into.

The root zone and immediate topography- the altering of terrain levels can expose or compact roots, killing them and having a negative effect on the branches and crown, possibly even killing the tree or making it structurally unstable.

Shade on the tree canopy and root zone- the effects of new buildings on the amount of direct sunshine and shade should be considered, reflected sunshine and heat can dry out branches and the rootzone, causing necrosis. A shaded root zone could get waterlogged and prevent insects from aerating the soil, causing roots to suffocate. Shaded branches will die back and become a hazard to those below and adaptive growth could even cause structural failure, if, it increases weight and wind sail and in weak area of the crown.

The effect of the new buildings on the prevailing wind- the effects of 'wind tunnelling' from new buildings on the crown can dry out branches or sections of the crown and the root zone, while also posing a physical threat of fracturing branches through torsional strain.

It is important to understand that dramatic changes can cause disruption to the trees current equilibrium and ruining the tree would be great loss to the property and the future complex.

Recommendations

1. Tree protection zone- this is a physical barrier set up to prevent construction related activity in the trees immediate proximity, in this case for T1 we recommend a circular work zone with a radius of 13.62m. This should be made of solid builders fencing and labelled with 'No Entry' signs.
2. If work needs to be carried out within this protection zone, it should be approved or accompanied by a qualified arborist.
3. Low branches which hang outside the protection zone should be protected from impact with packing and can also be marked with high visibility tape which will hang down and make workers more aware of the overhanging branches.
4. Chemicals and harmful substances should not be used/mixed/delivered near or upwind of the protection zone.
5. If any roots of 30mm diameter or larger are exposed, an arborist should be contacted, and the roots subsequently repair pruned. Remedial branch pruning may be necessary after root removal.
6. Filling excavated areas and the area surrounding the protection zone should be done with correct soil to encourage root recovery and growth.

Summary

All stakeholders should review the findings of this report and undertake works as recommended. We look forward to contributing to this project and helping to create a fantastic environment for the new complex.

Validation

This report is valid for 3 years and should be kept as a record for future inspections to better help evaluation of characteristics and defects.

Standard

All Arboricultural work to be carried out according to industry standard best practice recommendations NS3420 del ZK.

Disclaimer

Trees are classed as optimum lightweight structures and are immobile, therefore they are forever at the mercy of outside influences such as extreme weather, climatic changes, physical impediment, chemical imbalance and viral vulnerability. Due to the natural growth habit of different tree species and the outside influences on them, no guarantee of tree safety can be given. This report is not a guarantee of tree safety or by any means an absolution of responsibility from the owner. Trees, landscape and any subsequent work or action taken remain the duty and responsibility of the owner. This report is based on the qualifications and experience of the Arboriculturalist who carried out the evaluation.

Declaration:

Sign:  Date: 05/12/2019

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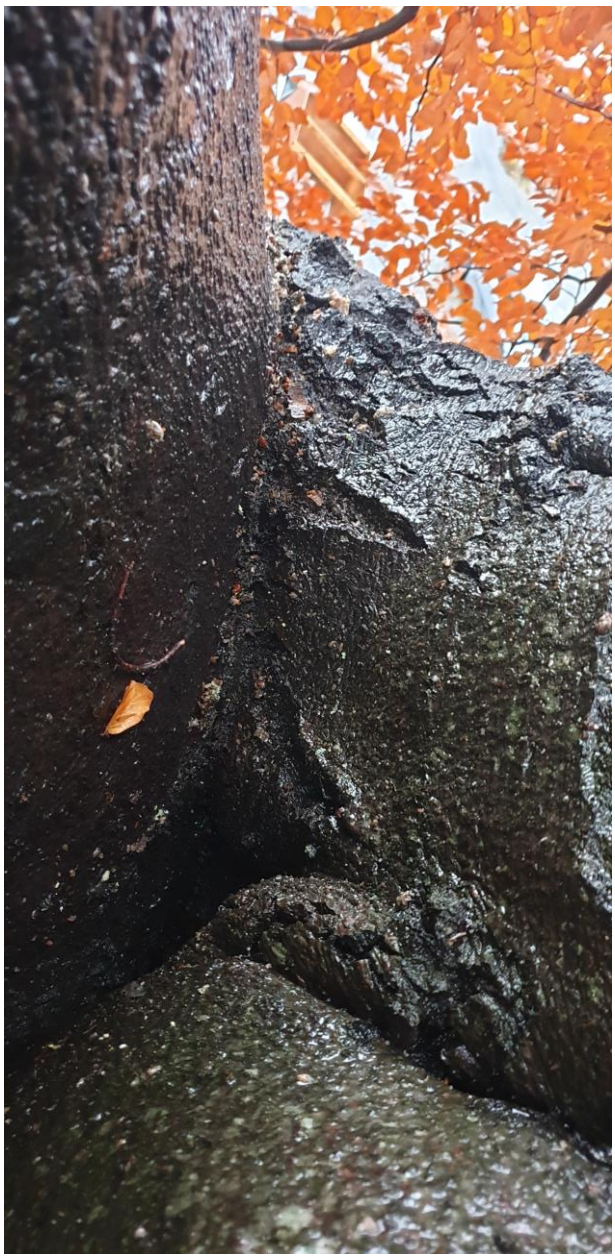
Picture 1 – *Fagus sylvatica* (T1)

Picture 2&3 – Excavation of leaves and humus from scaffold limb to aid inspection of open cavity.



Picture 4&5 – Main union with inclusion of bark/cambium layer causing an inherent weakness, however no deep cavities or excessive decay was noted on inspection

Picture 6 – Positioning of T1 showing crown reach (purple) and root protection zone(red). Any work inside the root protection zone should be accompanied by an arborist.