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Tree Report at Park, Knocknagree, Mallow, County Cork 02.05.2024

Introduction:

The following survey was conducted on the 20., 22. and 29.April 2024 for the purpose of identifying and assessing existing tree vegetation at the northern boundary of the property.
The goal is to identify the significance and condition of existing trees
In this survey trees with a DBH (trunk diameter) of more than 150mm were tagged, identified and inspected by means of Visual Tree Assessment (VTA) using approved methods by ISA standards. (International Society of Arborists).
An arboricultural impact assessment was prepared in order to establish a safe zone for future construction development on the site.

Most trees are at an early stage of maturity (semi-mature) and will provide a good establishment and basis for further landscaping development, provided they are protected and looked after in the process.

Overview:

The site is to the west of Knocknagree village near the foothill of the Derrynasaggart Mountains at the Cork Kerry border. It lies at an altitude of about 200m above sea level and is currently used for grazing.

The surveyed trees on the site are located along the northern side of the site boundary and consist of various species of conifers. Presumably planted as a dense shelter belt ,the line of trees consists of more than 60 semi mature species, tightly planted at about one to two meters apart.

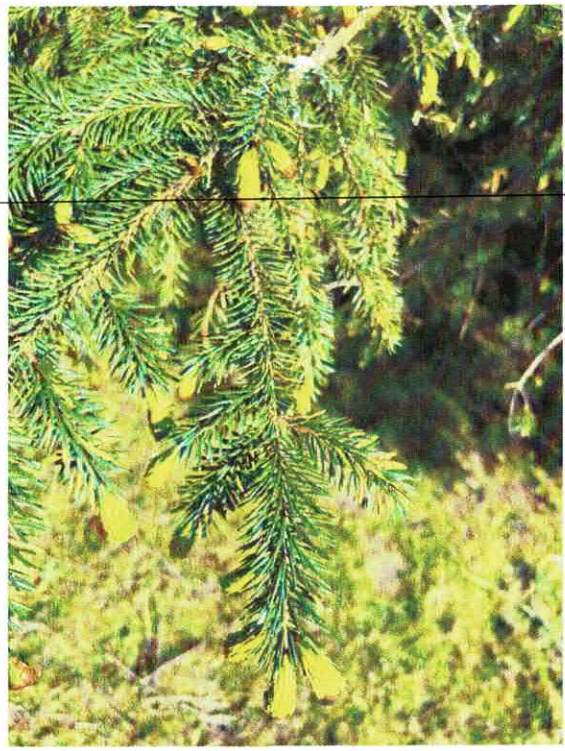
The remaining site of circa 1.7ha is vastly tree free. However it is completely surrounded by deciduous trees from the neighbouring properties, thus creating a certain sheltered micro climate.

Starting from the west, tagging towards east, the first 20 trees seem to have been planted in a double row. Some less vigorous trees are heavily suppressed by the taller ones at the back.

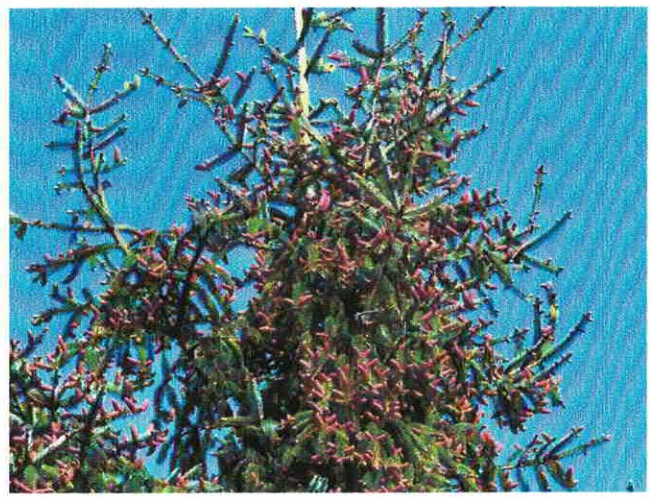
All trees are suppressing each other and form a tight shelter belt. The predominant species in the main line of trees consists of Picea sitchensis, Sitka spruce and reach a height of 12 to 16m.
Suppressed species mainly on the southern side of the line consist of Chamaecyparis Lawsoniana, Lawson cypress and Cupressus x leylandii, Leyland cypress.
The estimated crown reach is about 3 to 5 meters to the north and south.
Due to the suppression some smaller trees are of stunted growth or died completely.
Some trees also have developed one sided crown spread or are leaning.

Root competition lead to girdling roots and exposed surface roots. See picture to the left.
All surveyed trees are in fair condition and provide a good structure in its entirety.
No visible structural damage in the crown was identified.

The ground and soil conditions are wet, waterlogged ground even indicated by the abundant presence of rushes up to the drip line of the trees, see Picture to the left.
Evidence of livestock suggest soil compaction and damage to upper layer of roots.
Some surface damage to roots was identified probably due to hoof or teeth marks.
Some farming hardware like fence posts and wire are attached to some trees.



The Spruce trees show good vigour and vitality and up to 4 to 5 needle years were identified. Good development of cones this year. See pictures below and left.



This suggests good establishment and further growth and development.
No evidence of decay, pest infection or fungal bodies were discovered on the visits.

Survey Conclusion:

All trees are well established even though in suppressed state. They form a tight shelter belt and are in fair condition due to ground conditions and planting formation. All trees are of sound structure and vitality and will and offer a good amenity for proposed development for many years to come.
They provide an excellent habitat for existing wildlife especially birds and during the tree survey operations about 16 species of birds were identified in the close vicinity of said trees. Please find attached screenshot with identified bird species.
Surveyed trees will have to be viewed as a codominant stand of trees. Removal of one or more trees from an established woodland will affect stability and wind resistance of the remaining stand. Careful consideration will have to be given to the overall woodland management long and short term.
Trees are living organisms whose health and condition can change rapidly, therefore they should be checked regularly.

Arboricutural Impact Assessment:

Proposed construction work should adhere to BS5837 2012 and monitored by a certified Arborist. Following are some relevant excerpts from the BS5837:2012 BSI Standards Publication about Trees in relation to design, demolition and construction:

1. Tree protection

To avoid disturbance to the physical protection, it is essential to make allowance for, and plan, all construction operations which will be undertaken in the vicinity of trees. Factors that need to be considered include, but are not limited to:

a) site construction access;
b) the intensity and nature of the construction activity;
c) contractors' car parking;
d) phasing of construction works;
e) the space needed for foundation excavations and construction works;
f) the availability of special construction techniques;
g) the location and space needed for all temporary and permanent apparatus and service runs, including foul and surface water drains, land drains, soakaways, gas, oil, water, electricity, telephone, television or other communication cables;
h) all changes in ground level, including the location of retaining walls, steps and making adequate allowance for foundations of such walls and backfillings;
i) working space for cranes, plant, scaffolding and access during works;
j) space for site huts, temporary toilet facilities (including their drainage) and other temporary structures;
k) the type and extent of landscape works which will be needed within the protected areas, and the effects these will have on the root system;
l) space for storing (whether temporary or long-term) materials, spoil and fuel and the mixing of cement and concrete;
m) the effects of slope on the movement of potentially harmful liquid spillages towards or into protected areas.

2. Ground protection during demolition and construction

2.1. Where construction working space or temporary construction access is justified within the RPA, this should be facilitated by a set-back in the alignment of the tree protection barrier. In such areas, suitable existing hard surfacing that is not proposed for re-use as part of the finished design should be retained to act as temporary ground protection during construction, rather than being removed during demolition. The suitability of such surfacing for this purpose should be evaluated by the project arboriculturist and an engineer as appropriate.
2.2. Where the set-back of the tree protection barrier would expose unmade ground to construction damage, new temporary ground protection should be installed as part of the implementation of physical tree protection measures prior to work starting on site.
2.3. New temporary ground protection should be capable of supporting any traffic entering or using the site without being distorted or causing compaction of underlying soil.

The ground protection might comprise one of the following:
a) for pedestrian movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, so as to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane;
b) for pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane;
c) for wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.
2.4. The locations of and design for temporary ground protection should be shown on the tree protection plan and detailed within the arboricultural method statement (see 6.1).
2.5. In all cases, the objective should be to avoid compaction of the soil, which can arise from the single passage of a heavy vehicle, especially in wet conditions, so that tree root functions remain unimpaired.
2.6. Any materials whose accidental spillage would cause damage to a tree should be stored and handled well away from the outer edge of its RPA.

3. Site monitoring
Wherever trees on or adjacent to a site have been identified within the tree protection plan for protective measures, there should be an auditable system of arboricultural site monitoring. This should extend to arboricultural supervision whenever construction and development activity is to take place within or adjacent to any RPA.
Existing planning regulations include the provision for local authorities to enforce planning requirements. The project arboriculturist appointed by the developer can help monitor site activity, but enforcement is the responsibility of the local authority.
Demolition and construction in proximity to existing trees.

4. Root Protection Area RPA
4.1. Construction within the RPA should accord to the principle that the tree and soil structure take priority, and the most reliable way to ensure this is to preserve the RPA completely undisturbed. Soil structure should be preserved at a suitable bulk density for root growth and function (of particular importance for soils of a high fines content), existing rootable soil retained and roots themselves protected.
4.2. The ability of a tree to tolerate some disturbance and alteration of its growing conditions depends on specific circumstances, including prevailing site conditions, and in general, the older the tree, the less successfully it will adapt to new conditions.
4.3. Where alternative design solutions are not available such that construction is proposed within the RPA, the potential impact of the proposals on the tree should be assessed, and a tree protection plan and arboricultural method statement produced.

Details of design proposals should be developed in conjunction with the project arboriculturist and, where required, input from a suitably qualified engineer. In order to demonstrate that the proposals are technically feasible such details should be included within planning applications.

4.4. To avoid damage to tree roots, existing ground levels should be retained within the RPA. Intrusion into soil (other than for piling) within the RPA is generally not acceptable, and topsoil within it should be retained in situ. However, limited manual excavation within the RPA might be acceptable, subject to justification. Such excavation should be undertaken carefully, using hand-held tools and preferably by compressed air soil displacement.

4.5 Layout design tool indicating the minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain the tree's viability, and where the protection of the roots and soil structure is treated as a priority

For single stem trees, the RPA should be calculated as an area equivalent to a circle with a radius 12 times the stem diameter.

5. Avoiding damage to trees

Trees that have good health and stability are well adapted to their surroundings. Any development activity which affects the adaptation of trees to a site could be detrimental to their health, future growth and safety. Tree species differ in their ability to tolerate change, but all tend to become less tolerant after they have reached maturity or suffered previous damage or physiological stress. Planning and subsequent site management aims need to minimize the effect of change.

The part of a tree most susceptible to damage is the root system, which, because it is not immediately visible, is frequently ignored. Damage to, or death of, the root system affects the health, growth, life expectancy and safety of the entire tree. The effects of such damage might only become evident several years later. Damage can be the result of a number of minor but compounding factors that accumulate over time. Materials such as uncured concrete, diesel oil and vehicle washings can all damage roots and lead to adverse impacts on the tree.

Damage to the stem and branches of a tree is not usually sufficient to kill the tree directly, but can make it unsafe by affecting the dynamics and growth of the tree, or by initiating long-term decay. Such damage can also be disfiguring. The attachment of notice boards, cables and other utility apparatus can all damage trees, as can using trees as anchors for winching.

6. Extent and form of the root system

Within a short distance of the stem, the roots are highly branched, so as to form a network of small-diameter woody roots, which can extend radially for a distance much greater than the height of the tree, except where impeded by unfavourable conditions. All parts of this system bear a mass of fine, non-woody absorptive roots, typically concentrated within the uppermost 600 mm of the soil.

The root system does not generally show the symmetry seen in the branch system. The development of all roots is influenced by the availability of water, nutrients, oxygen and soil penetrability. As far as these conditions allow, the root system tends to develop sufficient volume and area to provide physical stability.

The uptake of water and mineral nutrients by the root system takes place via the fine non-woody roots (typically less than 0.5 mm diameter) and associated beneficial fungi (mycorrhizae). Their survival and functioning, which are essential for the health of the tree as a whole, depend on the maintenance of favourable soil conditions. The fine roots are short-lived, with the majority dying each winter and new ones developing in response to the needs of the tree.

All parts of the root system, but especially the fine roots, are vulnerable to damage. Once roots are damaged, water and nutrient uptake is restricted until new ones have grown. Mature trees recover slowly, if at all, from damage to their woody roots.

Conclusion/Recommendations

In order to keep the surveyed trees as integral part of the landscape amenity for proposed site development, BS5837:2012 BSI Standards Publication about Trees in relation to design, demolition and construction should be followed and adhered to.

I hereby recommend to liaise with a qualified arborist to establish a tree protection area before any other site works shall commence. This is to establish areas of proposed construction, pedestrian or vehicular traffic in the vicinity of the trees.

Recommended Root protection area per BS5837 is 12times the DBH. The larger trees on the site are between 400 to 600mm, which would calculate to a RPA of a minimum of five to six meters from the stems. Due to the shallow and widespread nature of the existing spruce trees I would recommend however a protection zone 5 meters beyond the dripline/crown of the tree line.

Selection of birds identified in a few minutes during tree survey

Summary

This report and impact assessment was prepared by me, Peter Haferkamp on the basis of the previously conducted and compiled tree survey (attached) to my best arboricultural knowledge and practise. Please find enclosed assumptions and conditions.

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Report prepared by
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02.05.2024

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Assumptions and Limiting Conditions

1. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible, however, the arborist can neither guarantee nor be responsible for the accuracy of the information provided by others.

2. Loss or alteration of any part of this report invalidates the entire report.

3. Possession of the report or copy of thereof does not imply right of publication or use for any purpose by anyone other than the person to whom it is addressed, without the prior expressed written consent of the consulting arborist.

4. The consulting arborist shall not be required to give testimony or to attend court by reason of the report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract engagement.

5. Sketches, diagrams, graphs, and photographs in the report, are intended as visual aids, and are not necessarily to scale and should not be construed as engineering or architectural reports or surveys.

6. Unless expressed otherwise:

   a. The information contained in this report covers only those items at the time of inspection.

   b. The inspection is limited to visual examination without dissection, excavation, probing or coring

   c. There is no warranty of guarantee that problems or deficiencies of the plants or property in question may not arise in the future

7. In the construction of this document/report no conflict of interest was reported by the author.

8. Methodology

This tree survey was carried out from the ground. All findings, observations and recommendations are based on the knowledge and experience of the undersigned qualified Arborist. Information contained in this report covers only those items that were examined and reflects the condition of those items at the time of the inspection. Findings are based on a mainly visual report from ground level . It should be borne in mind that findings are subject only to faults visible at the time of inspection, and as certain pathogens only produce seasonal fruiting bodies, they consequently may not have been noted during this assessment.

The methodology used in this assessment follows the recommendations contained in BS 5998:

2010. The analysis of the trees was undertaken using the VTA (Visual Tree Assessment) methodology developed by Mattheck & Breloer (1994).