

### 3.0 Summary

There were 4454 trees to be inspected on the site of which 212 were recorded as trees of interest. These mostly required some tree work or a reduced re-inspection period. Although some of the good condition trees were to demarcate where the tree survey stopped as the boundaries were difficult to identify. It is thought in most cases this will mean a larger area was inspected than requested.

Across the site there are many windblown or part blown trees or groups of trees. This is most obvious in the Dark woods which will be dealt with latter in this section. Where these windblown or part blown trees could affect the paths, road or access road or those areas deemed as high or moderate use management recommendation have been given, which for the most part are the removal of the trees, unless they can be retained at low risk and offer an obvious habitat benefit. It is also important that the uninspected paths are also being inspected for these and other common features on the site.

There are a number of trees with failed weak unions, mostly bifurcated cup unions, but some bifurcated wide inclusions. Some were trifurcated or had more stems and some had already failed. When there were weak unions they have been noted and any mitigating factors such as types of natural bracing, for example fused stems and fused branches have been considered. Where this is not the case management recommendation have been made to prune or put in place support systems to mitigate the risk.

With areas of Rhododendron and trees being cleared this is having an impact on the adjacent trees. Some have long lateral branches or stems and these are cracking and failing or partially failing. It is also the case that tree work has left dangerous hanging branches and damaged trees. Where these affect inspected target areas pruning or other remedial works have been recommended, but it is also important that the uninspected paths are also being inspected for these and other common features on the site.

There are, as would be expected a wide range of fungi on the site. Some of these are causing wood to decay and degrading stems and branches. For the most part these are saprophytic, living on deadwood. Although this can weaken deadwood it is part of the natural process, although risk mitigation was still considered. In other trees, especially Birch and Beech on the site this is degrading the living structure of the trees. The most common wood decay fungi on the site were Birch Polypore (*Fomitopsis betulina*), Tinder fungus (*Fomes fomentarius*), Butt rot (*Heterobasidion annosum*) and Honey Fungus or Bootlace fungi (*Armillaria spp.*). These fungi are an essential part of nutrient recycling, but where they pose an unacceptable risk to the high and moderate use areas management recommendation have been suggested.

In the Common Ash (*Fraxinus excelsior*) on site ash dieback (*Hymenoscyphus fraxineus*) is common across the site, albeit too different levels of severity. Although there are

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class 4 trees near Cambusbarron Primary School and up the access road to the walled garden that will need to be removed. This is a notifiable disease and its impact is already severe across the site. It should be reported to the PHSI and biosecurity measures put in place. It is important not to remove the healthier Ash on the site as their seed material will repopulate Ash on the site in the future. The other fungi affecting the site is affecting the Wych Elm (*Ulmus glabra*) population with Dutch Elm's Disease (*Ophiostoma novo-ulmi*) this poses a less immediate risk of failure. Although this will usually lead to the death of the tree, therefore felling is still recommended and biosecurity measures should be in place. It has no structural impact on the tree in the short term, hence slightly longer work priorities.

From the delivery of the Statutory Plant Health Notice (SPHN) there has been a huge loss of larch on site. This has left many broken and hanging branches. Some of these are from the felling operation and are from the felled Larch. Others are trees damaged by the operation or just exposed after the removal, however necessary, of their adjacent supporting trees. These hanging branches and damaged stems have remedial recommendations where they affect the high or moderate use areas.

There are several species of brittle branch trees on site. This is mostly a consideration where the tree in question is much larger than the adjacent trees or where adjacent trees have been removed such as in the SPHN area. Most notably in the Douglas Fir (*Pseudotsuga mensizii*) (See figure 8, Appendix 7.3), Hybrid Larch (*Larix x marschlinsii*) and the magnificent Wellingtonia (*Sequoiadendron giganteum*), where broken branches are common place and some are still hanging in the crown of the tree or adjacent trees.

Other trees on site are also showing common failures for different reasons are Sycamore (*Acer pseudoplatanus*) and Beech (*Fagus sylvatica*) (See figure 9, Appendix 7.3). This can be for biomechanical reason mentioned above, but commonly it is because of the impact of Grey Squirrels (*Sciurus carolinensis*). They cause damage to the upper sides of many branches and section of stems, especially around unions and continue this damage over the years not allowing the trees to recover resulting in failures. Where these failures are imminent or have already occurred, either partially or fully, remediation recommendations are suggested to mitigate risk to the high and moderate usage areas.

There is also some water logging and associated dieback in the trees where they cope less well with standing water. Alder and Willow generally perform the best in these conditions, with Beech and Sycamore doing generally less well and to be avoided if replanting in the wetter areas.

There are also issues with Willows on site where the ground is more free draining, they are in competition with other trees or just aging as they are relatively shortly lived trees. In these areas you are starting to see increased amounts of deadwood and due to the brittle nature of the wood you are also seeing stem and branch fractures. Some so severe the trees in question are suggested to be felled and allowed to regenerate.

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The Dark Woods were discussed at the earlier site visit. However it is worth mentioning here due to the large area of windblown trees within this area as well as the largest frequency of fire damaged stems. Some of these fire damaged stems are developing decay as a result. Fortunately most of the windblown areas do not currently affect the high or moderate use areas. However where individual trees do affect these areas they have been highlighted and generally felling has been recommended.

Having walked the site extensively the moss and lichen population strongly suggests that the site is oceanic in nature. It would therefore lend itself to planting that would fit with a temperate rain forest albeit it sits outside the natural range.

The footpaths, mountain bike tracks and access tracks show the popularity of the site. However most of the footpaths that still have trees nearby are showing signs of root damage. Whether that is severed roots or damage to roots, this coupled with the compaction caused by the use of the site should be considered as the sites usage continues to evolve. Due to the high level of use and tree cover on the site there will be an impact on the trees, but designs of pathways should be such as to minimise this damage and avoid severing of roots of retained trees.

As the Rhododendrons on site continue to be managed and other tree work is carried out leaving wood within the woodland, fire damage is a factor that has caused damage to tree stems, roots and branches. This damage can have a medium term impact on the condition of the tree and can change the potential risk a trees poses. Fires should avoid trees to be retained on site, roots, stems and crowns. It should also always be in line with SEPA guidance.

For more detail on the condition of the trees and the recommendations please refer to Appendix 7.1 and for recommendations section 5 of the report.

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