

Appendix. G - Arboricultural Tree Constraints

Conflict Between Site Layout and Trees

Below Ground Constraints

Below ground tree roots and the soil environment in which they grow needs to be protected if the tree is to be retained. Trees grow in association with fungi and other soil organisms which are of key importance to tree health. Roots are essential for anchorage, the uptake of water and nutrients and the storage of energy (carbohydrates) for the future growth and function of the tree.

Roots can be damaged by physical severance or wounding (e.g., following excavation of the soil) which can lead to the development of decay and a decline in vitality and/or instability. Raising soil level effectively buries tree roots at a depth where suitable conditions for growth are less available. Toxic materials discharged into the soil (such as cement-based aggregates, fuel, and chemicals) can lead to root death and dysfunction. Soils can be compacted to levels inhospitable to tree growth with even a single pass of machinery, regular pedestrian traffic or the storage of plant and materials. Relieving compaction can be problematic and may require costly remedial works. Changes in drainage/water levels can also have significant long-term impacts for tree health.

The effects of these incursions may take many years to manifest, with a resulting decline in amenity value and potentially the death or failure of the tree. It should be noted that older trees are particularly sensitive to damage and changes in conditions.

The Root Protection Area (RPA) is a notional area considered to be the minimum zone that must be protected to avoid any adverse impacts on retained trees. This area is deemed to be particularly important for tree stability, growth, function, and health. However, roots may extend far greater distances, with the distribution of the root system relating directly to the availability of suitable conditions for growth (namely oxygen, water, and nutrients). It is generally accepted that tree roots are predominantly located in the upper 1000mm of soil; however, roots may develop at deeper levels where conditions allow.

The RPA of the existing tree stock is an important material consideration when considering site constraints and planning development activities. The RPA of significant trees on site is shown on the Tree Constraints Plans.

The default position must be that all development, including any associated services, will occur outside the RPA's of retained trees. Where this is unavoidable it may be appropriate to use special measures to install structures, services or surfacing within RPA's which allow the protection of roots and soil structure which are essential for tree growth and keep any incursion to a minimum.

Drainage and other service

Drainage runs, soakaways, and the installation of other services, can cause disruption to RPAs and result in important trees being damaged. It is preferable to keep all such services out of RPAs because the more encroachment there is, the less likely the LPA is to find proposals acceptable. We advise that these matters are considered at an early stage to avoid a justifiable reason for refusal further into the design process. Our experience is that demonstrating services will not encroach into RPAs often saves delays in processing planning applications and can sometimes be the difference between a consent and a refusal. If services do enter RPAs the use of hand digging as detailed in the National Joint Utilities Group publication 'Guidelines for the Planning, Installation and

Maintenance of Utility Services in Proximity to Trees' (NJUG 10, Volume 4, 2007) will be undertaken to minimise the impact on the tree roots.

New Structures and/or Surfacing with RPA's

If it is proposed to place any new structures and/or hard surfacing within RPAs, it is likely that the LPA will require detailed cross-sections as reassurance that what is proposed can be implemented without excavating into existing soil levels. These must be at a scale that allows the relationship between existing and proposed to be easily seen, i.e., it must clearly demonstrate that there will be no excessive disturbance of RPAs. There must be a separate cross-section for each significant tree that may be affected. Our experience is that providing this level of information at an early stage often saves delays in processing planning applications and can sometimes be the difference between a consent and a refusal.

The current site has ample room to house construction materials and be used for storage. This is the greatest threat to the remaining trees and hedge through the leaching of building material such as cement, normally a minimum of 10m distance from vegetation, however, due to the site sloping towards the trees then extra precautions are required.

Above Ground Constraints

Tree stems and branches can restrict available space on site. Damage or wounding (including excessive pruning) can significantly reduce the amenity contribution of the tree and may lead to the development of dysfunction and decay with significant long-term implications for tree health. The future impact of existing trees should be carefully considered, including individual species characteristics (such as potential future size, fruit fall, shade etc.) and how the tree will interact with any proposed development and future land use. Annual tree growth can lead to direct damage if stems/branches (or roots) come into physical contact with structures and this must also be taken into consideration.