

Review of TPZ Assessment for Australian Trees

Tree Protection Zones (TPZ) were invented in the USA, based on American Species and American units of measurement. For Australia they are, at best, an arbitrary guide structured around the American unit of measurement of 12 inches being 1 foot.

For the sake of simplicity, it was determined to measure , in inches, the diameter of an American tree's trunk at 4ft 6" (56 inches), the average height of an American Breast, above the ground line and convert that transposing directly from inches to feet, to establish a TPZ radius.

Thus, a tree with a Diameter at Breast Height (DBH) of 14 inches gets a 14 ft TPZ radius circle all around the tree.

PROBLEMS ASSOCIATED WITH THIS SIMPLISTIC SYSTEM

The problems with this over simplified system are numerous and include, but are not limited to:

- Age of the tree – Young, Mature or Over Mature,
- Time frame – Understanding the “Dogs Life of a Tree”
- The vigour – genetic capability,
- Vitality – What it is doing within its environment,
- Differences between tree genera and species
- Soil Type and structure.
- Organic content of the soil,
- Soil Depth – root profile depth,
- Hydrological differences between sites and within a site,
- Slope and drainage – Drain a bog and flood a site,
- Exposure etc.

CONSIDER THESE EXAMPLES

- Trees in deep sandy soils over gravels and deep-water courses. Such trees will have no feeding or structural roots at or even near the surface. The first lateral root may be 10 or more metres below grade so digging a 1 or 2m deep trenches adjacent to the trunk will not be an issue.
- Conversely, with a tree on a slope that receives its water from higher up the slope. Any excavation that occurs, even well outside the notional TPZ, the back fill will act as a barrier or diversion thus will cut off the flow of water that sustains the tree, it may subsequently die due to dehydration of the root plate
- Root pruning is routinely implemented to provides new space and to extend tree's health and vitality. Appropriate and timely root pruning programs in combination with regular

remedial actions of crown maintenance such as; thinning, shaping, removal of dead dying branches, in combination with soil amelioration, fertilisation and irrigation provided the tree with resources and energy to resist pest, disease. Highly vital trees will have the energy reserves to fight their greatest threat, significant climatic and biological changes.

- Trees with large DBH but that have a crown less or much less, than the healthy norm, will not have a root system commensurate with DBH calculation. The DBH of trees with little or no crown will have a very similarly reduced root system. This will not comply with the notional construct of the TPZ formulae.
- Trees of different genera and species have different ability to tolerate root disturbance and or reduction. Some Australian native trees are very tolerant of root plate changes while others are very intolerant to changes. Here you need to know which tree is which.
- Deciduous tree species, having an obvious dormant period, are generally far more tolerant the evergreen species, which have no fully dormant period.
- The required time line, to alter the root plate through disturbance or reduce, is much shorter in a young healthy tree than in a fully mature tree. However, get the time line correct and anything is possible.

WHAT IS THE ANSWER

The consulting Arborist with experience will take into account what is possible for any given tree. Rather than use a rule of thumb, that dictates an arbitrary measure. Rather they will, using their skills, training and research to assess on merit, health, soil type, topography, apparent distribution of roots from both a structural and sustaining viewpoint etc. Having evaluated all these factors and in comparison with the time line for such works they will determine what is, or is not, possible for each tree.

The proposal to alter the root plate of a tree is a complex matter. Trees are living organisms that grow a new tree on the outside of the last growth cycle tree with each subsequent growth cycle. While having a document is considered desirable in some quarters, so that untrained people in different disciplines can determine what can and can't be done to a trees. This is a short term cost saving and more a self-serving exercise than good horticulture. Such arbitrary documents with actions implemented by unskilled individuals would not be considered appropriate for other living organisms such as in Human or Animal health.

There is seldom a better outcome, than by seeking advice from a suitably qualified and experience person in that particular field and then fully implementing that advice. Town Planners, Architects, Landscape Architects, Engineers are not Horticulturalists nor do they have those disciples and training. Let each professional represent his field of knowledge and accept the advice given by professionals representing their field of knowledge. Horticulture and Arboriculture is more than just being a gardener, which everyone thinks they can be.

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