

Trees on TenderSURE roads – An Approach

As we are aware, Bengaluru once known for its gardens and tree lined streets is losing its green cover at an alarming rate. Our city has a legacy of great horticulturists like **Gustav Krumbiegel** and **Marigowda** working relentlessly in the 19-20th century for greening the city, which then got its 'garden' tag.. But unfortunately all their effort is fading away in our mindless quest for uncontrolled growth.

Some of the reasons for the current ills related to trees are:

- Unscientific cutting/trimming of trees
- Wrong choice of trees. Most are non-indigenous(rain trees) which are not strong and roots don't grow deep
- Unscientific pavement installation. Example is the concrete 'choking' the roots
- A recent complaint is that too tall trees will obstruct the façade of buildings.

These issues are not insurmountable, we just need the will to do resolve it and make the city green once again.

It's beyond doubt that TenderSURE is the silver bullet for the transportation infrastructure related issues for this city. It has successfully already proved that with the pilot on St. Marks road. Uniform carriageway, wide footpaths, UG utilities and other features make it unique and important.

TenderSURE has already done an amazing job of giving priority for pedestrians and cyclists. It has also taken care of existing trees.

However, there is an opportunity for integrating **new trees** in the planning for TenderSURE which will surely make it complete. There are many advantages having trees, some being:

- Rain, Sun and Heat protection for all road users
- Safer walking and cycling environments as trees provides a natural barricade
- Lowers the overall temperatures (reduces 'urban heat island' effect)
- Lowers Ozone gasses release from automobiles

However there could be some concerns about planting new trees on TenderSURE roads:

- Tree trunks spread really wide, blocking the entire pavement sometimes
- Tree uprooting during windy days / branches falling
- Roots projecting at the surface level damaging the pavement
- Roots damaging the utility ducts

For the first three points above, the solution would lie in picking the right tree for planting.

We need trees which:

- Trunk does not grow too wide in the girth
- Tree has wide canopy
- Very strong local variety that stays firm
- Root structure has long tap root and lateral roots too

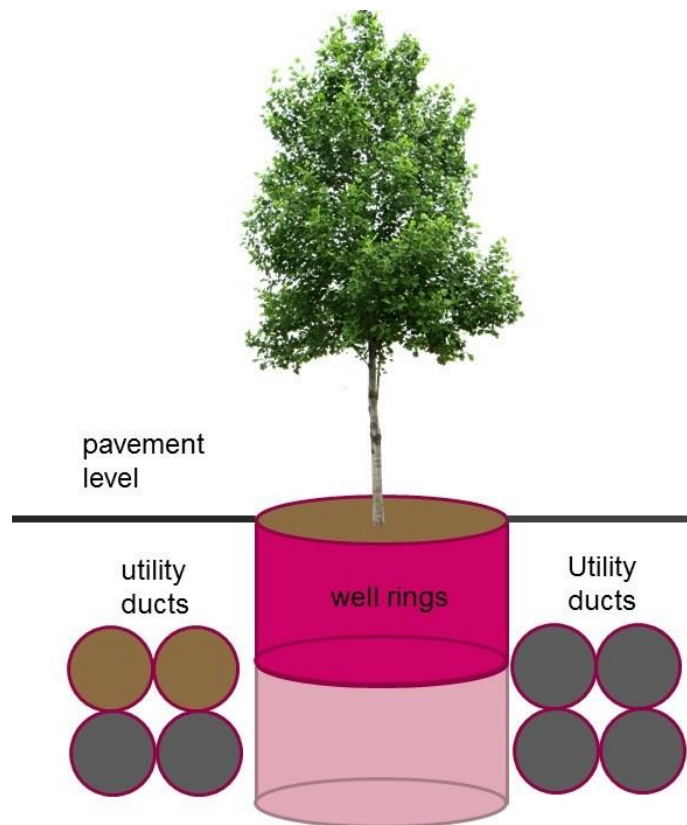
The **honge tree(pongamia pinnata)** is one of the best candidate for the requirement stated above. There are others too like **Simarouba glauca** or the paradise tree.

Manage root growth:

Managing the roots needs some engineering.. we will need to implement the **linear root protection** mechanism to manage this. This is a ribbed barricade which lets the roots grow properly. This is depicted in the picture below:

More information is in the below link:

<http://www.cis-streetfurniture.co.uk/products/tree-protection/root-direction/>



In the TenderSURE context, this can be easily done by using rings made of **ferrocement**. It is economical also.

Even standard well rings also can be used with a diameter of 3-4 ft. Two or Three rings of this type can be stacked one upon the other to create a linear root barrier easily.

This activity can be done while the earthwork is being done for the footpath.

Since the trees mentioned above have a canopy which is about 30-40 ft wide, the trees can also be planted with a gap of about 30 feet between each tree.

The planted trees need to be mature of minimum 5 ft height which will improve the survival rate. This can also have a tree guard but will need a support stump for sure.

As discussed earlier, with the right will we will surely be able to green this city with having the right road infrastructure which caters to all road users effectively and is good for environment too.