



ARCHITECTURE



DESIGN

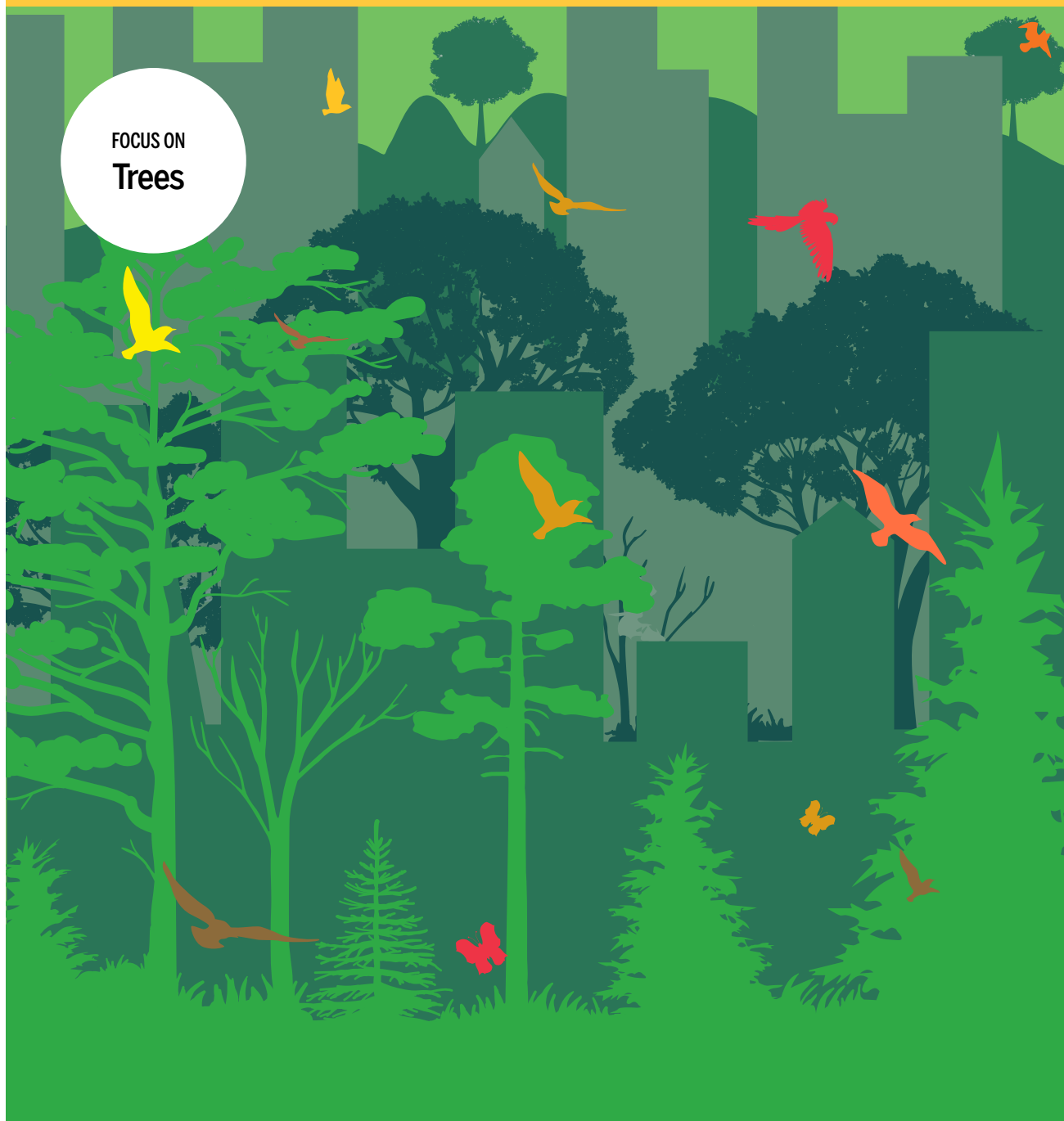


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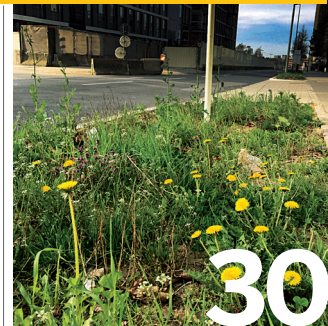
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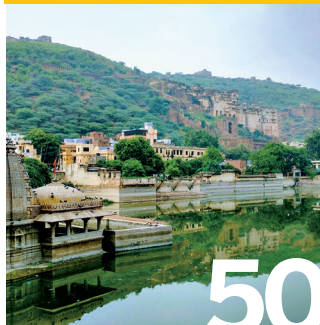


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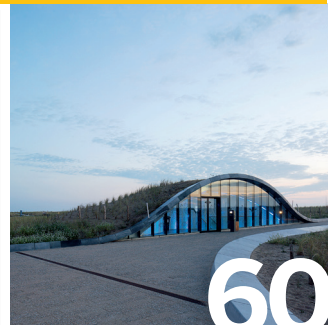
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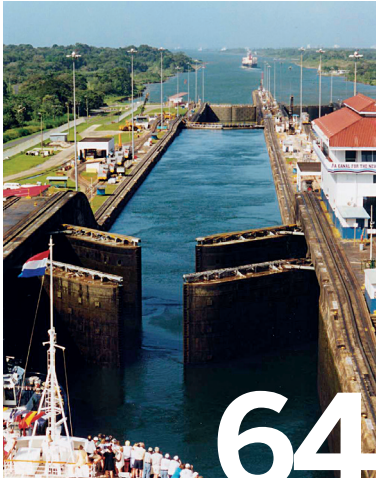
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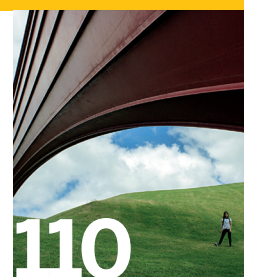
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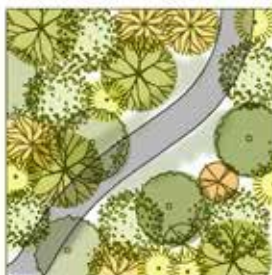
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Adopting a Sustainable Approach to Trees

Subhagya Atale Raval educates us on working around the green footprint during the construction process



Forest



Walking through Forest



Settlements in Forest



Cities

Since the advent and evolution of civilisation, humans have been carving out spaces in forests; this activity became so intense over a period of time that we are now left with a low density of trees and a very sparse green cover. Nowadays, such tree cover is often witnessed in open spaces such as parks, pocket parks, water channels, beaches, the surroundings of a heritage building and along the roads in the cities.

Today, the public debate is mostly around conservation of existing trees and planting more of them. People are more aware and sensitive towards trees. As a result, we are witnessing a provision of mandatory open spaces in urban areas with the plantation of trees and/or planned construction activity to retain the existence of tree footprint. However, often it is seen that commercial decisions override green solutions, in this case trees, when it comes to real estate development that leads to the unpleasant situation of a land bereft of trees.

Fortunately, there are various ways to achieve both on-site protection of trees and overall real estate goals. It is possible to construct a dense canopy cover and make provisions to save it. If grey and green have to survive together, both must make a compromise. If a specific tree needs to be saved, our construction process needs to respond appropriately. It is important to know that not all trees can be saved, but the focus should be to save the maximum possible.

This brief write-up is primarily about

measures to develop urban footprint along with due consideration of the green footprint.

A methodical approach towards working around the green footprint

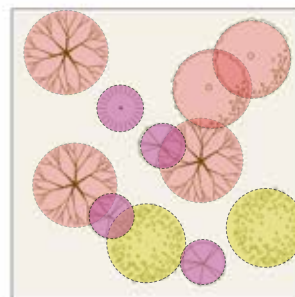
Implementation of the following measures which need to be followed during pre-construction, preparing trees and post-care stages.

Pre-construction stage

1. Conduct a vegetation survey: First and foremost, while dealing with such sites, it is critical to get the vegetation survey done. This survey will provide details like location, name of the species, girth and canopy. Once the information is collected, it's important to study the survey and segregate the species in



Mapping of trees and ground cover



Study and segregate species

Do Not Touch Can be Transplanted Thorny/Undergrown trees

Clearing the site by removing the weeds

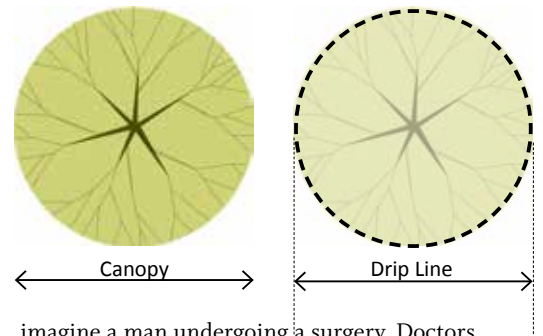
If a specific tree needs to be saved, our construction process needs to respond appropriately

four different categories such as very important (do not touch), less important in terms of type and size, thirdly the ficus species that can be transplanted easily for and the fourth category can comprise invasive species.

2. Hold a capacity-building workshop for key stakeholders: Before starting any work on site, it is very important to hold a workshop with not only the decision makers but also the on-site workers. Because they are the people who should be made aware of how sensitive they have to be while constructing next to a huge, beautiful and precious living tree.

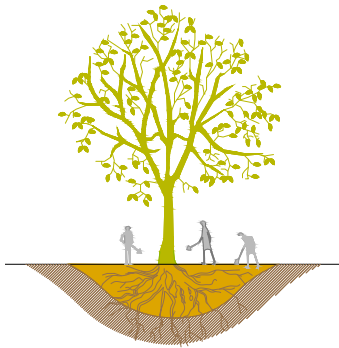
Preparing and protecting stage

Trees and construction don't usually go together, but there are ways and methods about how they can work in synergy. A tree should be prepared 3 months prior to construction. For example,

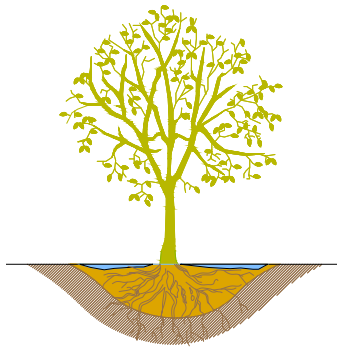


imagine a man undergoing a surgery. Doctors would first prepare his mind, then his body by giving external supplements by means of medicine and then take him for surgery. And, most importantly, the doctors won't discharge a patient till his wounds are healed completely.

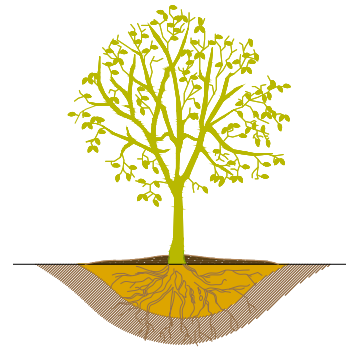
It is exactly similar in the case of trees. They can be prepared by creating a pit equal to its



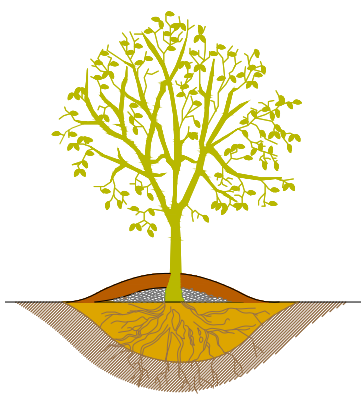
When working inside the dripline, one should always use hand tools as Bulldozers hampers roots at greater extent.



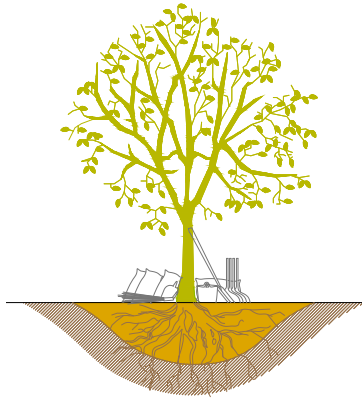
Throughout the process trees shall always be well-watered before and after digging.



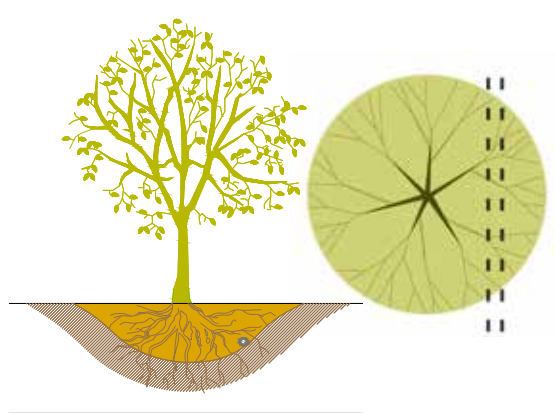
Exposed roots shall be covered with soil or mulch as soon as possible.



In case of increase in grade, one should always add a layer of gravels on top of the existing ground level.



Defined area of protecting trees should not be used for dump-ing of any of the construction material. Proper calculation of time peri-od need to be done in prior to avoid hot and dry weather for tree preparation process.



Tunnel under the root system is advisable in case of working inside the drip line instead of trenching.



Top Left & Right: Projects illustrating how- Saving trees with the proper process not only adds beauty but also changes the microclimate of that area (Alembic)
Bottom Left : Though there was a change in grade, the tree was given sufficient existing soil support for it to survive and grow at a project in Nirlon Knowledge Park
Bottom Right: A road side photo showing what should never be done: A tree planter should never be filled with P.C.C. or any construction material

canopy size called a 'drip line' and then their roots can be treated. Only the roots that need to be trimmed should be exposed and the process should be carried out gradually and at specific intervals. The total trimming of roots should not be more than 40% of the total root ball. This process protects the trees from shock, something that often leads to casualties. Never leave the trimmed roots open or untreated, as this can cause infection. Once the roots are healed, construction can begin.

A proper calculation of the time period needs to be carried out to avoid extreme hot and dry weather conditions during the tree preparation process. When working inside the drip line, one should always use hand tools as bulldozers harm the roots. Throughout the process, the trees should always be well-watered before and after digging and the exposed roots should be covered with soil or mulch as soon as possible. The defined area of tree protection should not be used for dumping any of the construction material. In case of an increase in grade, a layer of gravel should be added on top of the existing ground level.

Pre-care stage

A tree suffers a lot in this process, hence it

is very important to monitor them regularly through all seasons. Trees should be closely checked for any infection on barks, branches or leaves. If any infection is noticed, immediate and appropriate treatment should be given.

An integrated and inclusive approach, considering the green footprint i.e. Trees, during planning and implementation stage is the key to ensure overall sustainable development. We may not get back the forest in urban context, however, we can certainly be close in achieving the bigger green footprint by following simple "Tree Rules" as cited in this article. The process should begin at planning and designing stage wherein the objective is to protect the existing green fabric and in addition, create a new one to bring out nuances of sustainable green landscape in urban context.

Subhagya Atale Raval is a Landscape Architect and founder of Lanarch, a Landscape consultancy firm in Mumbai, India. Her key work principle is inclined towards conserving the existing and enhancing the surrounding with overarching objective of sustainable development inclusive of green footprint in urban context.