

Palava

Tree Transplantation document

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1.Introduction

1.a Tree transplantation

Definition: The process of relocating or replanting existing tree safely from one place to another is known as tree transplantation.

1.b Need to do tree transplantation

A fully matured vegetation defines the character of a space very well. During the development or construction on site many fully grown trees may get cut . Planting new saplings in the area would require good many years to grow and provide as much shade and oxygen as the felled trees would have done. Also some huge tree which might be cut during site development may be an extinct or rare specie. Mature trees offer a multitude of environmental benefits. Their roots hold together the soil & helps in ground water recharge. Canopy decreases air temperature and filters both noise and air hence reducing pollution. They also support wide range of fauna. Hence considering the various benefits of fully grown trees, transplantation is very important .

1.c Process of transplantation

Process of transplantation can be divided into various stages which are as follows:

-Selection criteria of trees for transplanting
-Digging
-Pruning
-Storing
-Transporting
-Preparation of a new site
-Post-transplantation care

Selection criteria of trees for transplanting

Some species tend to withstand transplanting better than others. The following criterias help to understand whether it can survive transplantation :

a. Indigenous tree species have better survival ability post transplantation

b. Deciduous plants can take transplantation better than evergreens

c. Age of a plant : Younger plant can take it better than older plant

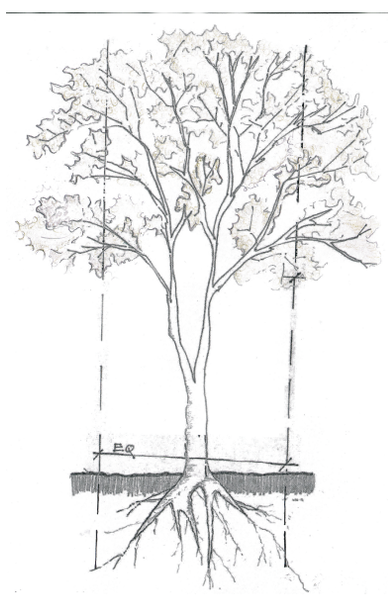
d. Roots : Shallow rooted species can take better than deep rooted

e. Health of the tree

f. Season of transplant ; for example Some species may survive transplanting any time during the year while some may be moved only in the fall after leaf drop. Preferably It should be avoided in summer season.

Pruning

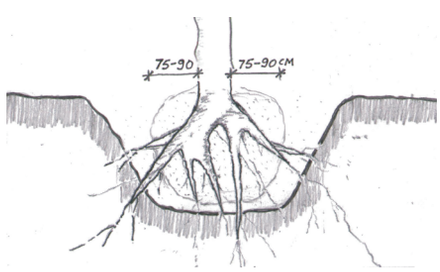
If tree is profusely branching and has many leaves, they should be carefully pruned, while retaining the form and the shape of the tree. Insect infested stems or those infected with disease , broken stems should be removed .This will help to minimize loss due to transpiration. It will also help in controlling the center of gravity of the tree while shifting.



Pruning of branches to match the size of the root ball

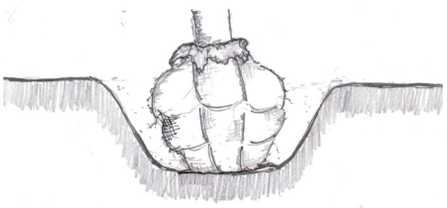
Digging

Depending on the girth of the tree, a trench should be 75-90cm away from the trunk and it should be about 75 cm deep .A good measure of the soil into which the roots are twined up is also excavated and this whole mass is called a ' Root ball ' . The excavation should not be such that later on handling of the tree while transplanting becomes difficult.



Dig an area at least 75 cm wider than root ball to uproot the tree

A thick paste of good garden earth, leaf mould, oil cake (which is at least 24 hours soaked), and good old well rotten farmyard manure should be kept ready. The thick paste then should be applied well like putty, on all sides of the exposed surface.



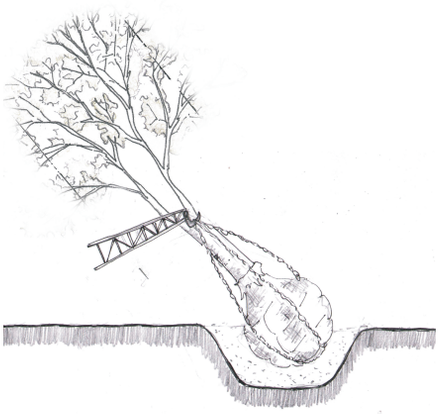
Rootball wrapped up in jute cloth & watered regularly

Storing

For the period before the tree is transported to its new location, it should be ensured that the root ball is wrapped up with gunny sacks and tightened up with ropes to avoid physical damages like cuts and wounds when it is pulled out from the soil. Lot of water should be sprinkled to keep the gunny sack moist according to the size of the tree..

Depending on the size of the tree, it should be allowed to stay undisturbed for about 2-3 weeks.

As far as possible the excavated tree wrapped in gunny sack should be left as it is in the pit till the new pit on other site is ready. In some cases its not possible and thus a nursery space might be required for the storage of the uprooted trees which need to be replanted after some time. Thus an open space for nursery should be located on site, preferably centrally located to all the trees to be transplanted.



Uprooted tree lifted up by crane

Transporting

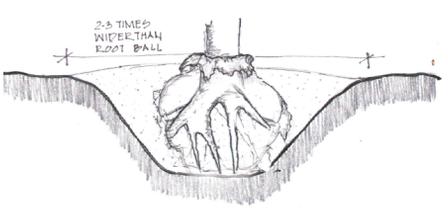
The closest location has to be opted as a new siting place for the tree, preferably within the site as cost of transplantation goes up with the distance.

Tractor is the convenient mode for transporting the uprooted trees to new site.

Preparation of new site

At the new location, an area at least 2-3 times wider than the root ball, and to a depth of at least 1-1.5m has to be dug out. This should be done before the tree is being uprooted from its old location .

Some river sand has to be added into the pit and leaves should be burnt to disinfect the soil. Pit should be allowed to cool for at least two days.



Uprooted tree is replanted in excavated pit at new location

The entire tree should be carefully lifted and positioned in excavated pit. This should be filled with a lot of good soil that should be moderately moist.

The tied ropes should be loosened and the cross wrapping that is under the main root should be removed. In the top, the gunny bag should be left intact and the sides should be filled with soil. It should be watered lightly.

After two or three days the knot should be cut, and jute and ropes should be removed.

Post-transplantation care

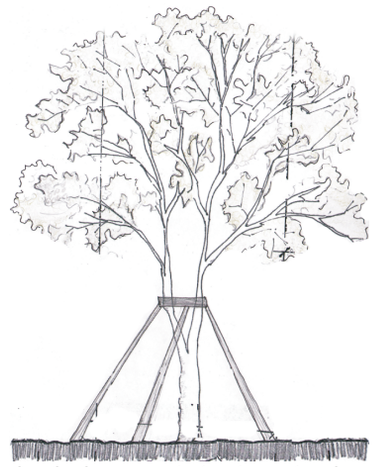
Watering - The site should be thoroughly watered immediately after planting. Thereafter, the soil must be regularly monitored to prevent drying out.

Mulching - Mulching helps to conserve moisture, moderate soil temperature and control weeds around trees and shrubs. Mulches are placed on the soil surface over the tree root system.

Use of fertilizers- Fertilizers or manure should not be mixed with the fill soil, as this could cause root damage. If transplants appear to need fertilizer during the first few years, a totally soluble fertilizer should be applied.

Pruning- Pruning may be required while transplanting trees but further pruning of deciduous trees should be postponed for at least one year after transplanting.

Providing the mechanical support - Mechanical support may be required to protect the replanted tree from shakes or any other impacts for about five months or until the roots begin to spread out again. The support may be necessary when the tree is tall, slow to recover, heavily foliaged, or planted in a sandy site. Providing stakes is one of the ways . Stakes can be placed opposite of each other and the tree anchored to the stakes with a non-abrasive material, such as a soft, broad, fabric strap . Any support provided to a tree should be removed as soon as the tree can stand alone, usually after the first growing season.



Mechanical support to tree trunk after replanting

Cost of Transplantation

The cost depends on tree size, size of the root ball, techniques used , soil conditions, site access, the distance it is going to be moved through, etc. For small trees, the cost would range between Rs.5000 to Rs.10,000 while transplanting big trees will cost much more, but,transplanting more trees will bring down the transplant cost per tree making the idea feasible.

2.Study of existing vegetation for the Palava region

Natural Vegetation is critical to any site. Thus it is important to identify existing plant communities and to understand that they are part of a larger ecological cycle .

The existing vegetation for the region falls under Intermediate Deciduous Teak forest of series:.

Tectona-Terminalia-Adina-Anogeissus

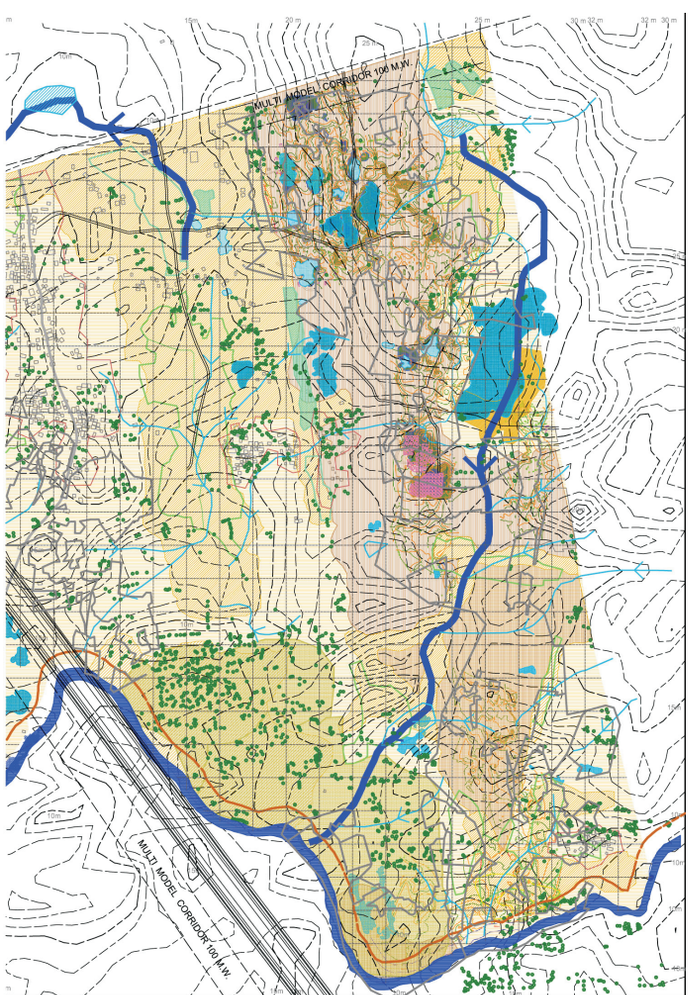
The characteristic of this forest type are :

Deciduous multistoried forest
Height attained by top canopy: 15-25m

3.Study of existing vegetation of Palava site

3.a Soil

Palava is characterised by rocky outcrops and a rocky substrata. The soil cover on the major part of the site is thin. There are pockets/strips of deep soil *(Refer soil Map below)*. Soil is disturbed in many parts due to soil quarrying . These conditions call for very careful conservation of the existing deep soil cover. Large areas on site are characterized by coarse and gravelly soil.



Soil map for Palava site

Legend:

- Shallow soil
- Shallow to slightly deep soil
- Shallow soil with rocky outcrop
- Major water movement line
- Minor water movement line

3.b Vegetation

The vegetation on site has been classified on the basis of site observations which are as follows:

1. Grove along river edge
2. Grove along marsh
3. Trees within grassland
4. Grove near river edge
5. Isolated trees in field

4.Zone wise site study

4.a Characteristic mapping and analysis

- The mapping process involves identifying trees on site, visual analysis & photographic documentation.
- Based on this mapping , individual trees were analyzed in terms of its growth.
- Following these observations trees were identified for retaintion / transplantation / removal with respect to proposed master plan

Study of Zone 4

According to observations , trees in zone 4 broadly fall into the category of ‘Trees within grassland’ . They can further be divided into 3 categories which are as follows:

- A grove of single species (*Mangifera indica* and *Bombax ceiba)*
- A grove of mixed species (*Azadirachta indica*, *Terminalia cattapa*, *Tectona grandis*, etc. nearby a natural seasonal swale)
- A single tree in grassland (*Butea monosperma , Azadirachta indica, etc.)*



A grove of Bombax trees amongst the wild seasonal grasses



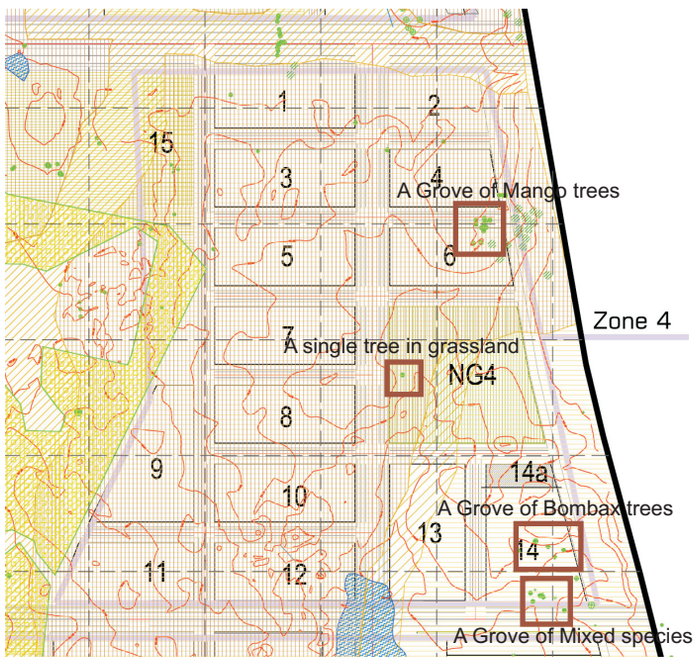
Grove of young trees of Neem, Guava, near a seasonal swale



Grove of Mango trees within wild grasses as seen from the road



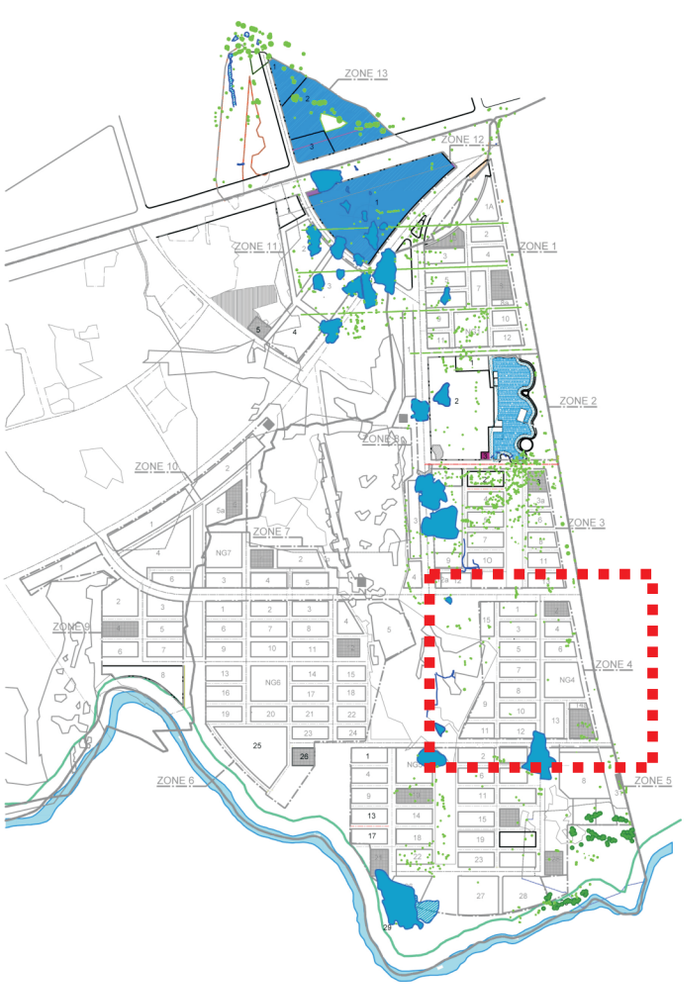
Single tree in grassland



Soil map for Zone 4

Legend:

- Shallow soil
- Shallow to slightly deep soil
- Shallow soil with rocky outcrop











Botanical name	*Bombax ceiba*		
Common name	Semal		
Type	Indigenous, Large deciduous		
Typology	Trees in a single specie grove (5 nos.)		
OBSERVATIONS			
Height	8-10m		
Girth	0.8-1m		
Canopy Spread Porosity	 7-12m Semi dense		
Attributes			
Age	Middle age	Flowers	Not seen
Bark	Blackish brown with very few thorns	Fruits	Not seen
Leaf colour	Dark green	Birds	Not seen
Branching	In Irregular whorls		
FACTS			
Growth requirements			
Soil - It grows well in well drained deep sandy & loamy soils. Can tolerate shallow & slightly saline soils.	**Water-** It requires medium water.	**Sunlight** - It grows most rapidly in full sun .	
Growth rate - Medium growth rate			
Bird Life - Crows, Bulbuls, Mynahs, Rosy pastors, Sunbirds, Flower-peckers and many others attract for a sip of the nectar			
Position - Stands on plot 14 for Multi level parking (MLP)			



REMARKS
These trees with medium growth rate have grown to a considerable height. The grove has both aesthetical & ecological benefits whereas it stands on plot 14 for MLP . So this grove must be conserved by transplanting them . This specie is an indigenous & thus can tolerate transplantation.

CONCLUSION

- Trees to be retained
- Trees to be transplanted
- Trees to be removed
- Trees can be transplanted



Botanical name	*Azadirachta indica*		
Common name	Neem		
Type	Indigenous , medium-large evergreen		
Typology	Tree in a mixed specie grove (2 nos.)		
OBSERVATIONS			
Height	4-5m		
Girth	0.5m		
Canopy Spread Porosity	 3-4m Sparse		
Attributes			
Age	Young	Flowers	Flowers seen
Bark colour	Light brown		
Leaf colour	Bright green	Fruits	Not seen
Branching	Irregular	Birds	Not seen
FACTS			
Growth requirements			
Soil - It can grow in many different types of soil, but it thrives best on well drained deep and sandy soils.	**Water-** It requires very less water disregarding the quality of water.	**Sunlight** - It grows most rapidly in full sun.	
Growth rate - Very fast growing			
Bird Life - Birds like Crows, Bulbuls, Mynahs, Koels , etc. make nests on Neem tree.			
Position - Stands on plot 14 for Multi level parking (MLP)			



REMARKS
The Neem trees in mixed specie grove have grown to a smaller height in a very irregular form. Being a fast growing indigenous specie it can be easily planted. Thus both the trees in grove shall be removed.

CONCLUSION	
☐ Trees to be retained	☐ Trees to be transplanted
☐ Trees to be removed	☐ Trees can be transplanted







Botanical name	*Terminalia cattapa*		
Common name	Badam		
Type	Exotic, Medium size deciduous		
Typology	Tree in a mixed grove		
OBSERVATIONS			
Height	5m		
Girth	15cm		
Canopy Spread Porosity	 3-4m Semi dense		
Attributes			
Age	Young	Flowers	Seen
Bark	Erect, Light brown	Fruits	Not seen
Leaf colour	Dark green		
Branching	Tiered branching with few tiers	Birds	Not seen
FACTS			
Growth requirements			
Soil - It grows best in well drained sandy & loamy soils. Can tolerate shallow & slightly saline soils.	**Water** - It requires more quantity of water .	**Sunlight** - It grows most rapidly in full sun but can tolerate 0-25% shade.	
Growth rate - Very fast growing, with height growth in early years averaging around 1.5–2 m (5–7ft) per year & dia growth is about 1cm/yr (0.4 in/yr)			
Bird Life - Birds and bats feed on the tree's fruits while bees are attracted to the nectar in its flowers.			
Position - Stands on plot 14 for Multi level parking (MLP)			



REMARKS
The tree is in its good form. It has both aesthetical as well as ecological benefits as it attracts birds and honeybees. It also acts as a Specimen tree. Being an exotic specie, it may or may not tolerate transplantation.

CONCLUSION

- Trees to be retained
- Trees to be transplanted
- Trees to be removed
- Trees can be transplanted





Botanical name	*Mangifera indica*		
Common name	Mango		
Type	Indigenous , Evergreen		
Typology	Tree in a single specie grove		
OBSERVATIONS			
Height	6-7m		
Girth	0.6m		
Canopy Spread Porosity	 3-4m Semi dense		
Attributes			
Age	Young	Flowers	Not seen
Bark	Dark brown		
Leaf colour	Shiny bottle green	Fruits	Not seen
Branching	Starts from low height	Birds	Not seen
FACTS			
Growth requirements			
Soil - Grows best in well drained sandy or gravelly soils. Can tolerate a range of soils from alkaline, calcareous soils to heavy clay soils.	**Water-** It requires more water during fruiting while less to medium water otherwise.	**Sunlight** - It grows best in full sun	
Growth rate - Under ideal conditions, trees can grow to 2 m (6.6 ft) in the first year. Once trees start cropping, their growth rate slows down.			
Bird Life - Attracts a range of fruit eating birds whereas flowers are a rich source of nectar collected by honey bees.			
Position - Stands on plot 14a for Multi level parking			



REMARKS

It's a slow growing and a very good shade giving tree which has grown to a considerable height on edge of MLP 14 . Thus can be retained and considered as part of set backs of plot 14 .

CONCLUSION

- Trees to be retained
- Trees to be transplanted
- Trees to be removed
- Trees can be transplanted









Botanical name	*Psidium guajava*		
Common name	Amrood		
Type	Exotic, Small evergreen		
Typology	Tree in a mixed grove		
OBSERVATIONS			
Height	2.5-3m		
Girth	15-20cm		
Canopy Spread Porosity	 2-2.5m Semi dense		
Attributes			
Age	Middle age	Flowers	Not seen
Bark	Smooth, Greyish brown	Fruits	Guavas Seen
Leaf colour	Dull green		
Branching	Spreading branches	Birds	Not seen
FACTS			
Growth requirements			
Soil - It grows best in well drained soil rich in organic matter but usually has adapted to grow in any type . Can also take temporary water logging.	**Water** - It requires regular deep watering.	**Sunlight** - It grows in full sun and partial shade.	
Growth rate - Fast growing			
Bird Life - Birds like Parakeets feed on fruits			
Position - Stands on plot 14 for Multi level parking			



REMARKS

This tree is fast growing specie already in its fruiting stage and attracts birds like Parakeets. Though its an exotic specie it can grow in any type of soil. So a new plant can be easily planted and its full form can be achieved in a short period due to its fast growth rate. Thus it can be removed .

CONCLUSION

- Trees to be retained
- Trees to be transplanted
- Trees to be removed
- Trees can be transplanted





Botanical name	*Ficus racemosa*		
Common name	Goolar, Udumbara, cluster fig tree		
Type	Indigenous, Large deciduous		
Typology	Tree in a mixed grove		
OBSERVATIONS			
Height	2.5-3m		
Girth	18cm		
Canopy Spread Porosity	 2-2.5m Sparse		
Attributes			
Age	Young Age	Flowers	Not seen
Bark	Crooked, Brownish grey	Fruits	Not seen
Leaf colour	Dull light green		
Branching	Butteress shaped	Birds	Not seen
FACTS			
Growth requirements			
Soil - It grows well in well drained , medium to heavy deep soils, ideally near lakes & ponds.	**Water-** It requires good amount of water.	**Sunlight** - It grows well in Full sun but in early stages it can tolerate shade to some extent.	
Growth rate - Medium growth rate			
Bird Life - Wide range of Birds like - koels, barbets, coppersmiths, bulbuls,etc and bats feed on its clusters of figs			
Position - Stands on edge of plot 14 for Multi level parking			



REMARKS
This tree standing near a swale , is not growing well in its present conditions showing irregular & very less branching with no signs of fruiting. Thus it can be removed.

CONCLUSION	
Trees to be retained	Trees to be transplanted
Trees to be removed	Trees can be transplanted







Botanical name	*Ficus racemosa*		
Common name	Goolar, Udumbara, cluster fig tree		
Type	Indigenous, Large deciduous		
Typology	Tree in a mixed grove		
OBSERVATIONS			
Height	10-12m		
Girth	1.2m		
Canopy Spread Porosity	 12-15m Semi-dense to dense		
Attributes			
Age	Middle Age	Flowers	Not seen
Bark	Brownish grey	Fruits	Lot of Fruits on trunk
Leaf colour	Dark green		
Branching Pattern	Widely spreading on upper parts of canopy	Birds	Not seen
FACTS			
Growth requirements			
Soil - It grows well in moist soils .	**Water-** It requires medium quantity of water	**Sunlight** - It grows well in Full sun but in early stages it can tolerate shade to some extent.	
Growth rate - Medium growth rate			
Bird Life - Wide range of Birds like - koels, barbets, coppersmiths, bulbuls,etc and bats feed on clusters of figs.			
Position - Stands on edge of plot 14 for Multi level parking			



REMARKS

It's a well grown Ficus which is also an ecological habitat to wide range of birds & animals feeding on its fruits. It stands on plot 14 for MLP thus can be transplanted to other place with suitable soil conditions.

CONCLUSION

- Trees to be retained
- Trees to be transplanted
- Trees to be removed
- Trees can be transplanted







Botanical name	*Butea monosperma*		
Common name	Palash, Dhak, Flame of the Forest		
Type	Indigenous, Medium sized deciduous		
Typology	Single tree in grassland		
OBSERVATIONS			
Height	9-10m		
Girth	1.1m		
Canopy Spread Porosity	 7-8m Dense		
Attributes			
Age	Middle age	Flowers	Not seen
Bark	Dark brown , patchy	Fruits	Not seen
Leaf colour	Glossy Bottle green	Birds	Not seen
Branching	Irregular		
FACTS			
Growth requirements			
Soil - It grows on a wide variety of soils including shallow, gravelly sites, black cotton soil, clay loams, and even saline or waterlogged soils.	**Water** - It requires average water & can tolerate drought.	**Sunlight** - It grows well in full sun.	
Growth rate - Slow growing			
Bird Life - Birds like Sunbirds , Mynahs, Babblers , Humming birds , etc. feed upon the nectar in flowers.			
Position - Stands on corner plot 14 for Multi level parking			



REMARKS

Its a slow growing indigenous tree specie with ecological significance. In its present location, it has grown to considerable height in a good form. Thus it can be retained as it is.

CONCLUSION

- ☐ Trees to be retained
- ☐ Trees to be transplanted
- ☐ Trees to be removed
- ☐ Trees can be transplanted









Botanical name	*Mangifera indica*		
Common name	Mango		
Type	Indigenous , Medium sized Evergreen		
Typology	Trees in single specie grove(20-25nos.)		
OBSERVATIONS			
Height	12-15m		
Girth	1-1.5m		
Canopy Spread Porosity	 15-18m Dense		
Attributes			
Age	Matured	Flowers	Not seen
Bark	Dark brown		
Leaf colour	Glossy bottle green	Fruits	Not seen
Branching	Widely spreading	Birds	Not seen
FACTS			
Growth requirements			
Soil - It grows best in well drained sandy or gravelly soils. Can tolerate a range of soils from alkaline, calcareous soils to heavy clay soils.	**Water-** It requires more watering during fruiting while less to medium water otherwise.	**Sunlight** - It grows best in full sun	
Growth rate - Under ideal conditions, trees can grow to 2 m (6.6 ft) in the first year. Once trees start cropping, their growth rate slows down.			
Bird Life - Attracts a range of fruit eating birds whereas flowers are a rich source of nectar collected by honey bees.			
Position - Stands on road between Plot 4 and plot 6			



REMARKS
A grove of medium to big size healthy Mango trees, growing on shallow soil with rocky outcrop, creates a well defined landscape space within. Also it can further improve the soil quality over the years. Thus it must be retained.

CONCLUSION	
☐ Trees to be retained	☐ Trees to be transplanted
☐ Trees to be removed	☐ Trees can be transplanted





Botanical name	*Azadirachta indica*		
Common name	Neem		
Type	Indigenous , Medium size evergreen		
Typology	Tree in a single specie grove		
OBSERVATIONS			
Height	12-13m		
Girth	1.1m		
Canopy Spread Porosity	 10-12m Dense		
Attributes			
Age	Middle age	Flowers	Not seen
Bark	Dark brown		
Leaf colour	Bright green	Fruits	Not seen
Branching	Widely spreading branches	Birds	Not seen
FACTS			
Growth requirements			
Soil - It can grow in many different types of soil, but it thrives best on well drained deep and sandy soils.	**Water-**It requires very less water disregarding its quality & can tolerate drought conditions.	**Sunlight** - Grows most rapidly in full sun.	
Growth rate - Very fast growing			
Bird Life - Birds like Crows, Bulbuls, Mynahs, Koels , etc. make nests on Neem tree.			
Position - Stands on road between Plot 4 and plot 6			



REMARKS
A matured Neem tree along with Mango grove is adding to the landscape space & has wide range of benefits. Thus can be retained with the grove.

CONCLUSION	
Trees to be retained	Trees to be transplanted
Trees to be removed	Trees can be transplanted



Botanical name	*Azadirachta indica*
Common name	Neem
Type	Indigenous , Medium size evergreen
Typology	Single tree in grassland
OBSERVATIONS	
Height	2.5-3m
Girth	18-20cm
Canopy Spread Porosity	 1.5-2m Sparse

Attributes

Age	Young	Flowers	Not seen
Bark colour	Dark brown		
Leaf colour	Bright green	Fruits	Not seen
Branching	Spreading on one side	Birds	Not seen

FACTS

Growth requirements

Soil - It can grow in many different types of soil, but it thrives best on well drained deep and sandy soils.	**Water-** It requires very less water disregarding its quality & can tolerate drought conditions.	**Sunlight** - It grows most rapidly in full sun.

Growth rate - Very fast growing

Bird Life - Birds like Crows, Bulbuls, Mynahs, Koels , etc. make nests on Neem tree.

Position - Stands on plot for Neighborhood Green (NG 4)



REMARKS

A fast growing young tree , with an irregular branching so it should be removed but since it stands on NG 4 it can be retained.

CONCLUSION

- ☐ Trees to be retained
- ☐ Trees to be transplanted
- ☐ Trees to be removed
- ☐ Trees can be retained

4.b Map showing tree retention/transplantation/removal

Map showing tree retention/transplantation/removal of Trees which are mapped



Trees to be retained
Trees can be retained
Trees to be transplanted
Trees can be transplanted
Trees to be removed

Map showing retention/transplantation/removal of trees on basis of Visual analysis (in areas which were physically inaccessible)

a. Few Subabool *(Leucaena leucocephala) t*rees in a mixed specie grove to be removed as its an invasive specie.

b. A single 10-12m high teak tree in mixed specie grove can be removed and timber can be used.

c. A middle age Neem tree can be transplanted and used on roadside.

d. Group of young age neem trees can be transplanted on road side.



A consolidated map showing tree retention/transplantation/removal of all the trees



5. Site selection for Replantation

New site for the trees to be transplanted is selected on the basis of:

a. Basic requirements of a tree- Soil , drainage, water, light conditions
b. Functionality/ usability of a tree for the spaces allocated in Master plan
c. Distance of transportation

Table showing new locations for the trees to be transplanted

Botanical name	New location	Reason
Bombax ceiba (5 nos.)	Ng4 (Neighbourhood Green)	• Suitable soil conditions • Nearest Distance • Ecological habitat for large number of bird species thus can give rich & varied experiences of nature in public space.
Terminalia cattapa (1 no.)	Ng4 (Neighbourhood Green)	• Shallow soil • Nearest Distance • Can be used as Specimen tree
Ficus racemosa (1 no.)	Near lake in zone 2	• Suitable soil & moisture conditions

6. Location of Nursery space

Nursery space will be required for the storage of the uprooted trees which need to be replanted after some time and for growing up new saplings that will be planted later on the site.

Two probable locations for nursery space have been marked:

Space A : Neighbourhood Green (NG 4)

Reasons:

1.It is located in Zone 4 which is first phase of construction

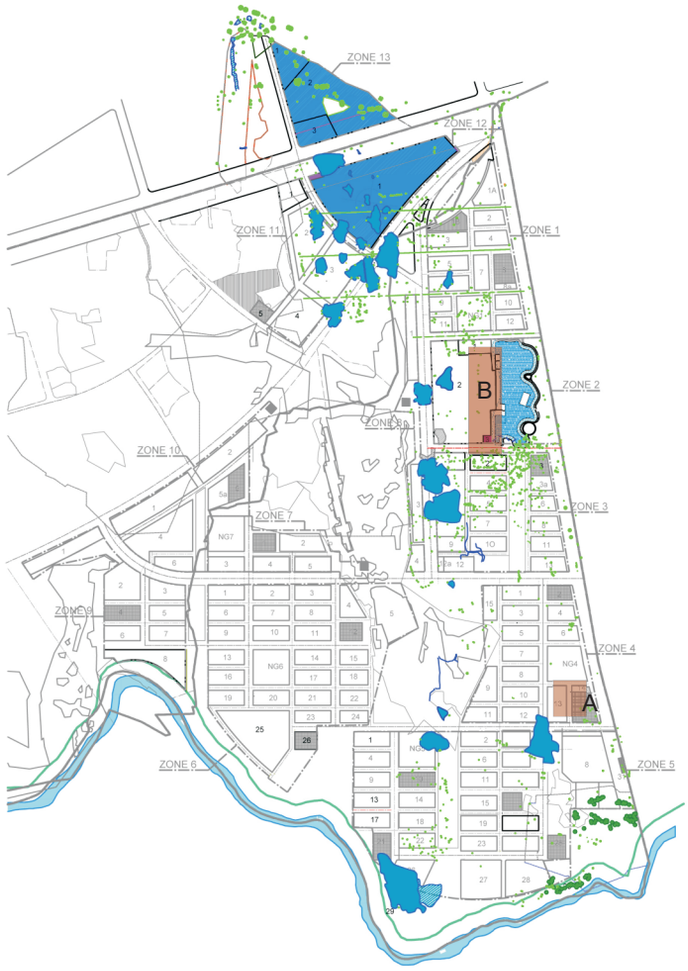
2. Many trees of Zone 4 are to be transplanted here

Space B : Near the Lake in zone 2

Reasons:

1. It is almost centrally located on the site

2. Good soil & water are available



A map showing location of probable nursery spaces

7. Annexure

Few trees as Ecological Habitat

1.Ficus racemosa. svn. Ficus glomerata (Cluster fig, Country fig, Crattok, Udumbar (Sanskrit). Umri) by Robert Frost , Newsletter of Banglore Environment Trust (Regd.), October 2010

“Figs and aganoid wasps have a symbiotic relationship .This relationship is one of the many relationships which radiate out from the Umri ;a host of creatures butterflies, bats, squirrels, geckos, birds, deer and other animals create aneco system in and around the Umri. The fig (synconium) has a rich succulent flesh packed with high energy carbohydrates including sugars. Thus, the Umri attracts frugivorous birds, insectivores and other creatures which disperse the seeds essential for the propagation of the trees. The tree laden with figs draws a whole host of birds and is one of the great attractions in the countryside in India - green pigeons, koels, barbets, coppersmiths, bulbuls ,starlings, white eyes, fly catchers, tailor birds, bee eaters and wren warblers. Some feed on the pulp of the figs, others directly on seeds. Some eat the fig whole and some peck at the figs. Many birds feed indirectly on the wasps and other invertebrates attracted to the bounty. Some birds seem to get all their water requirements directly from the fig. In addition, you have crow pheasants feeding off the geckos on the tree and koels and orioles feed on caterpillars which in turn feed on the fig leaves. Figs also attract fruit bats. Hornbills, mynas, parakeets and spotted owlets nest on natural hollows in the tree. Coppersmiths and barbets nest in the hollows made by them in the dead branches.”

“ Of mammals, rhesus macacques and langurs feed on the figs. Squirrels spend whole days on the tree and jungle pigs regularly eat fallen figs and even the civet, a carnivore, includes figs in its diet. Rodents feed upon the seeds of fallen figs. When there are fallen figs on water these are consumed by omnivorous fishes. The Umri or Goolar more than any other fig species, except perhaps for the Banyan, is flush with all forms of life. Man also eats the figs, not merely as a famine food, but finds the figs palatable though not comparable to Ficus carica- the edible fig.”

2. Bombax ceiba Linn.(Semal , Red silk cotton tree), ‘Common trees’ by Dr. H. Santapau

“Flowers come out when the tree is leafless; they appear in very large numbers so that the whole tree is a mass of brilliant colour. There are few trees in the whole world that can compare with the glorious display put up by the Simul tree. To add to the beauty and attractiveness of the tree, many bright birds frequent it in search of nectar from the flowers; the lively chatter of mynas and rosy pastors accompanied by the bass of the crows and the twittering of sparrows and other small birds make up a grand symphony of nature. The man who does not feel excited in the presence of such beauty surely must have a soul of iron.”

References:

Bibliography

1.Trees of Pune by Shrikant Ingalhalikar and SharvariBarve ; Corolla Publications , Pune, September 2010

2. Further Flowers of Sahyadri by Shrikant Ingalhalikar; Corolla Publications , Pune, July , 2007

3.Tropical Garden Plants in colour by T.K.Bose , B.Chowdhury , S.P.Sharma ; Horticulture and Allied Publishers, Kolkata, August 2008

Web references:

Online Articles:

Planting & Transplanting Landscape Trees and Shrubs by *Michael N. Dana and Rosie Lerner** Department of Horticulture, Purdue University Cooperative Extension Service West Lafayette, IN

How to Transplant Trees and Shrubs by David Beaulieu
www. About . com

Transplanting Trees and Shrubs by Marcus Jackson , Bob Harsel , Lorin Fornes ; North Dakota State University, July 1998
www.ag.ndsu.edu

Flowering trees and shrubs in India by D.V.Cowen

Forty common Indian trees & how to know them by R.N.Parker ; 1933

www.bngenvtrust.org