Guidelines for development of open spaces for *Palava*

Introduction

The guidelines for the project are geared towards creating an identity and overall character for *Palava*.
One of the key tenets for doing this will be the conservation of natural elements and biodiversity and allowing them to flourish.
The idea of identity will be examined based on context of existing natures; of nature and human occupation.

However, at the same time the guidelines will strive for creating a distinct individuality for the project.

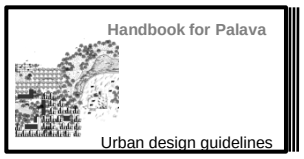
The idea of the open spaces will get embedded within the master plan by them also being the bearers of the appropriate infrastructure for the project; viz; water retention, water cleaning, drainage etc.

Sustaining open spaces requires them to grow and evolve, to be flexible and to provide space for children, women and old people, the differently abled, the individual and the group. The open space guidelines will ensure that all users groups are provided for.

For open spaces that are alive and flourish, they have to be rooted in the specificities of the context of the natural strata and the user group. The guidelines will take care of specific conditions in detail.

The design and construction of all the landscape elements and open spaces will use minimal resources and will be designed for optimal maintenance.

The above list is indicative, not exhaustive of the key parameters that the guidelines will follow.



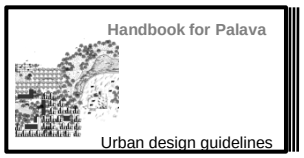
Guidelines for development of open spaces for *Palava*

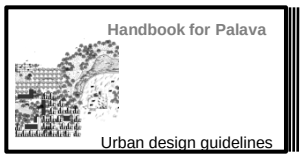
Background studies

i) Examining identity in terms of:
   a. Landscape character
   b. Human occupation
   c. Appropriation of natural conditions
   d. Layering of identities
ii) Analysis of Master plan
iii) Case studies
iv) Developing a kit of parts

Guidelines

Articulating guidelines in terms of:
i) Programme
i) Area
ii) Edges
v) Functions
v) Behaviour
   diurnal
   seasonal
vi) Kit of parts
vii) Maintenance
viii) Sustainability
ix) Budget





Background studies

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Source: www.thehindu.com/new/states/article20450.ece

Clayey soil, water logged condition
Roots above surface to breath
Abundant resources, dense growth

Mangroves
Mundra



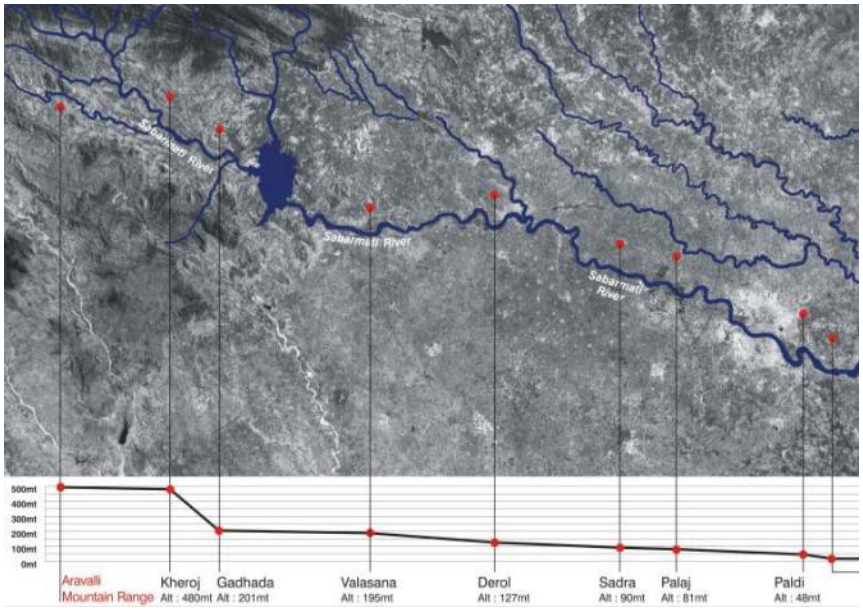
Source: www.flickr.com/photos

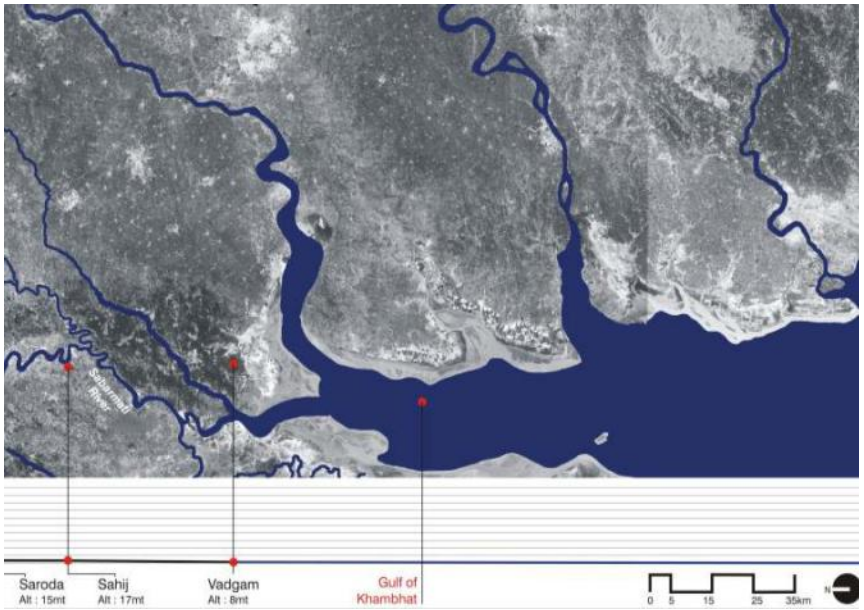
Sandy soil, water scarcity
Deep roots to reach low water table
Scarce resources, sparsely vegetated

Desert
Jaisalmer

Landscape character as we see it visually, is a synthesis of highly specific conditions of **location, climate, light quality, soil, rock strata etc**.

Landscape character





Source: Observations along the Sabarmati, LEAF 2009, Doc.2





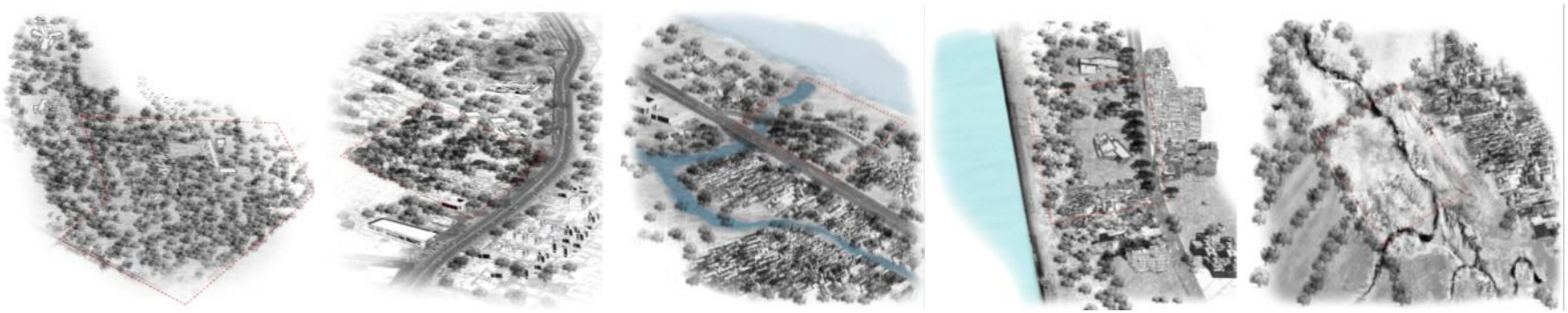




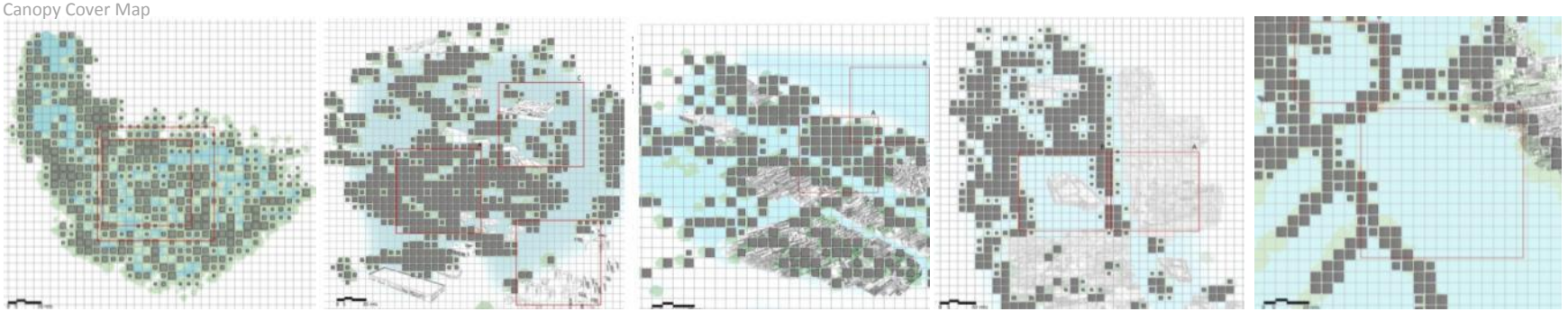



Silty | Clayey loam | Coarse sand | Coarse sand | Coarse sand

Source: Observations along the Sabarmati, LEAF 2009, Doc.2

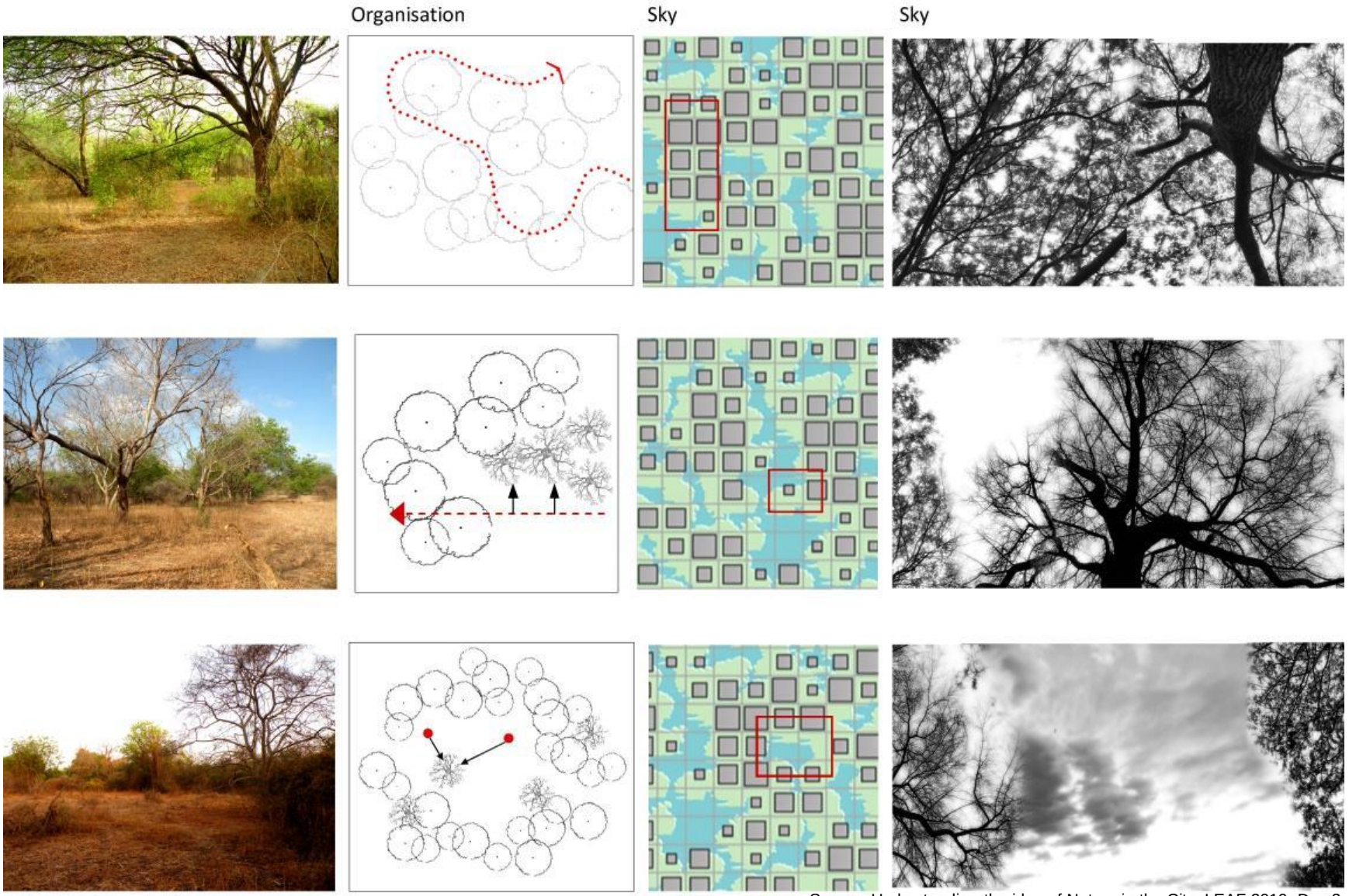


Canopy Cover Map



Atira | Sundervan | Fort Wall | Vadaj | Atira

Source: Understanding the idea of Nature in the City, LEAF 2010, Doc.3



Observing the Sky

Source: Understanding the idea of Nature in the City, LEAF 2010, Doc.3

Regional settings
North most part of *Konkan* lowlands of Maharashtra

Climate
Tropical warm and humid

Annual rainfall
2293.4 mm

Temperature variation
17 ^{0}C to 34 ^{0} C

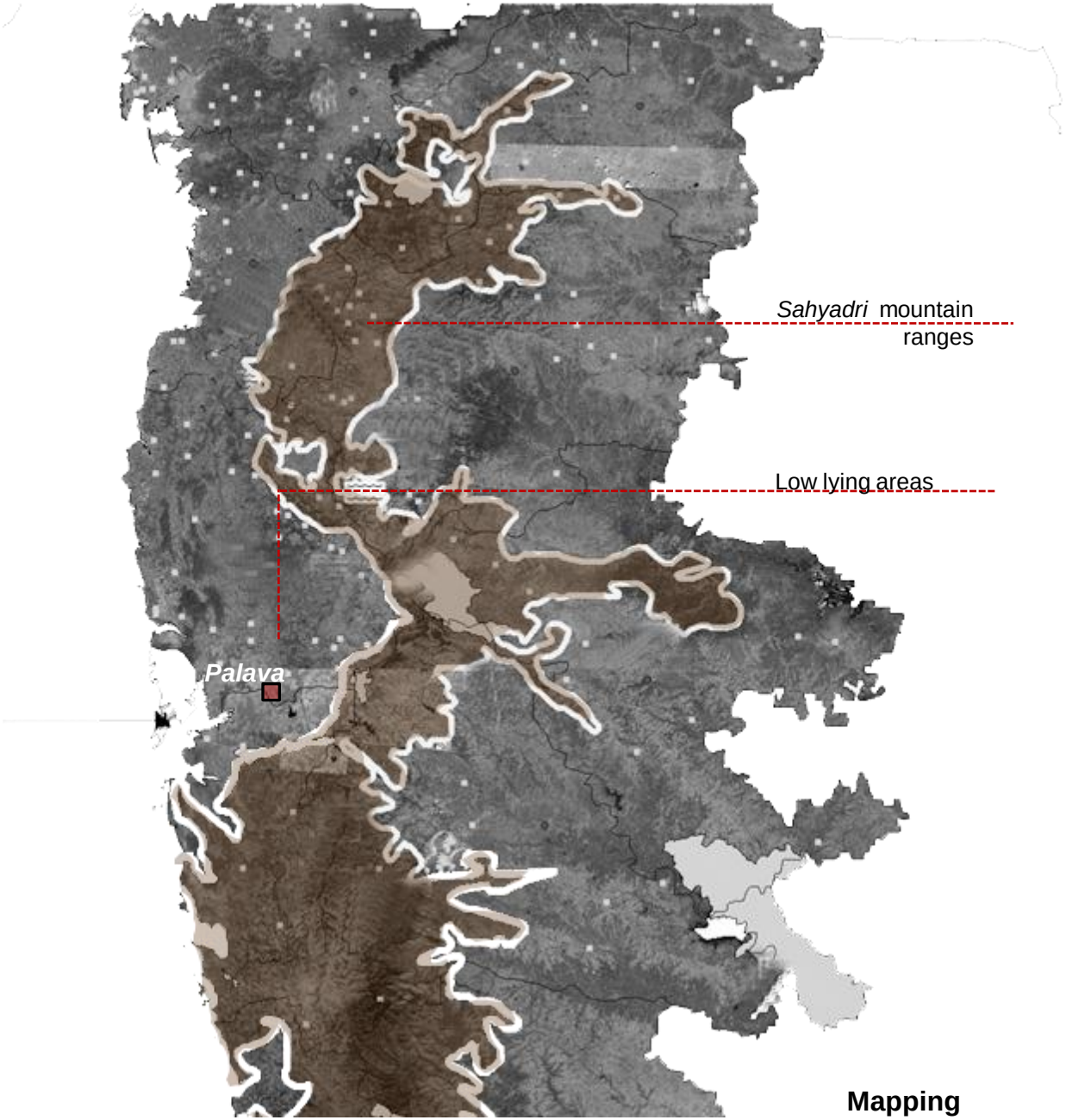
Soil type
Coarse, medium black, clayey, shallow soils

Agriculture
Mainly paddy cultivation

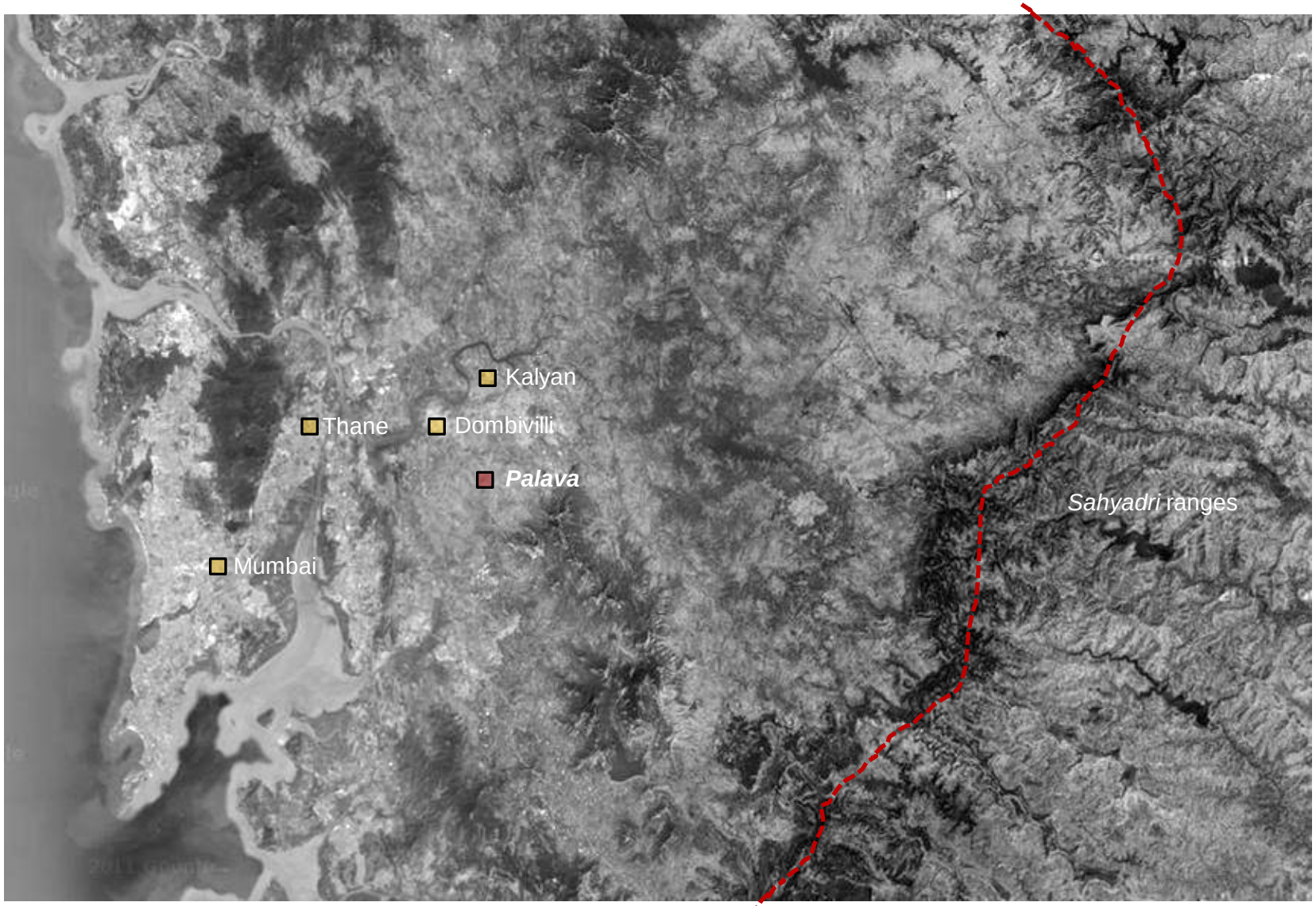
Other traditional occupation
Stone cutting

Main River
Ulhas river

Rock type
Basaltic rock



Source : www.keystonefoundation.org



Source : www.googlemaps.com

Ridge line

Forest type
Intermediate deciduous teak forest

Tectona – Terminalia – Adina – Anogeissus series

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

Top storey

Tectona grandis
Terminalia tomentosa
Terminalia bellerica
Adina cordifolia
Anogeissus latifolia
Diospyros melanoxylon
Ougeinia oojeinensis
Lagerstroemia parviflora
Lannea coromandelica
Grewia tiliaefolia
Schleichera oleosa
Madhuca indica
Bombax ceiba
Schleichera oleosa
Albizia procera
Pterocarpus marsupium
Dalbegia latifolia
Miliusa tomentosa
Bridelia squamosa
Stereospermum personatum

Middle storey

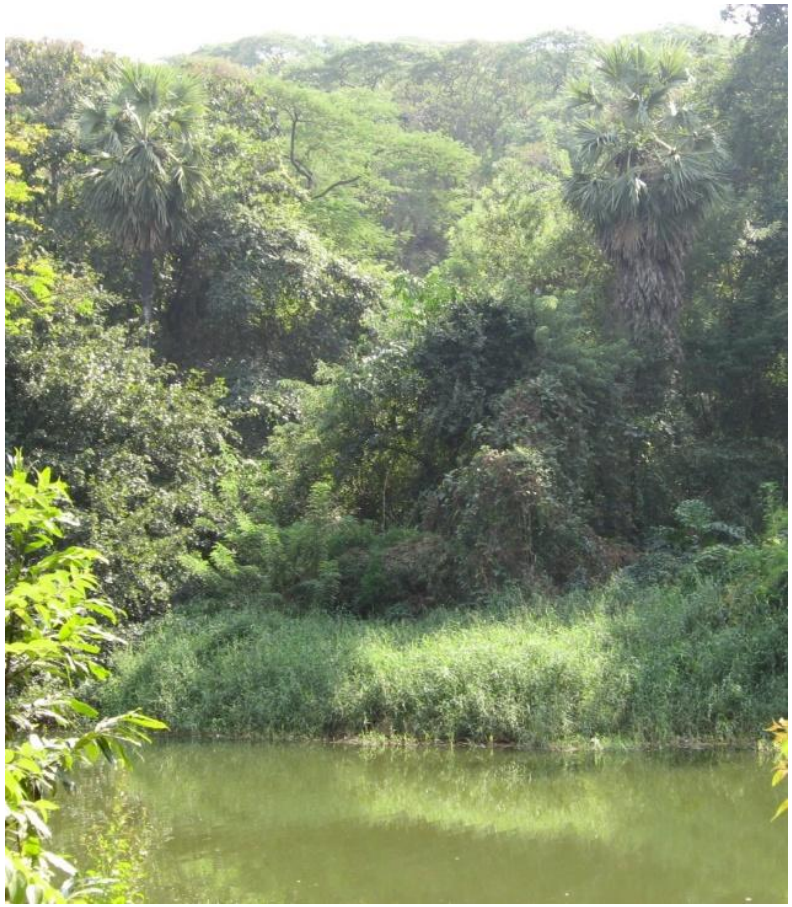
Acacia catechu
Bridelia retusa
Morinda tinctoria
Buetea monosperma
Wrightia tinctoria
Casearia tomentosa
Bauhinia racemosa
Emblica officianalis
Elaeodendron glaucum
Aegle marmelos
Bauhinia purpurea
Kydia calycina
Careya arborea
Grewia tiliaefolia
Mallotus philippensis

Under storey

Gardenia resinfera
Wrightia tomentosa
Ziziphus rugosa
Xeromphis spinosa
Meyna laxiflora
Gardenia latifolia
Carrisa congesta
Flacourita indica
Holarrhena antidysentrica
Helicteres isora
Lantana camara
Carvia callosa
Cassia tora
Azanza lampas
Woodfordia fruticosa
Euphorbia nivulia

Bamboo: *Dendrocalamus strictus*

Source : Forest ecology by G . S. Puri



Intermediate deciduous teak forest
(Sanjay Gandhi National Park)



Existing condition on site

Background studies

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Palava Masterplan, Sasaki

01. Entrance gesture
02. Green Terraces
03. Building Podiums
04. Neighbourhood Residential Street
05. Residential- Village Edge Street
06. Primary Street- Type 1
Street Retail/ Commercial Corridor
07. Primary Street - Type 2
Community/Amenity Corridor
08. Primary Street - Type 3
Residential Corridor
09. Intersection nodes
10. Community/Amenity Open Spaces
11. Building connectors
12. Neighbourhood Interactive Spaces
13. Commercial/Office Interactive Spaces
14. Institutional Open Spaces
15. Open space Between Residential - Commercial zone
16. Sports fields (in Parcel 2)
17. Open Spaces In Power Grid Zone
18. Green buffers for main road
19. Water edges
20. Public parks
21. Multi-modal corridor



Human occupation

Small scale- Building to cluster

2. Green Terraces

3. Building Podiums

4. Neighbourhood Residential Street

5. Residential- Village Edge Street

6. Primary Street- Type 1 Street Retail/ Commercial Corridor

7. Primary Street - Type 2 Community/Amenity Corridor

8. Primary Street - Type 3 Residential Corridor

21. 100 M Wide Multi Modal Corridor

9. Intersection nodes

10. Community/ Amenity Open Spaces

Medium sized - Community interaction

11. Building connectors

12. Neighbourhood Interactive Spaces

13. Commercial/Office Interactive Spaces

14. Institutional Open Spaces

15. Open space Between Residential - Commercial Zone

16. Sports fields

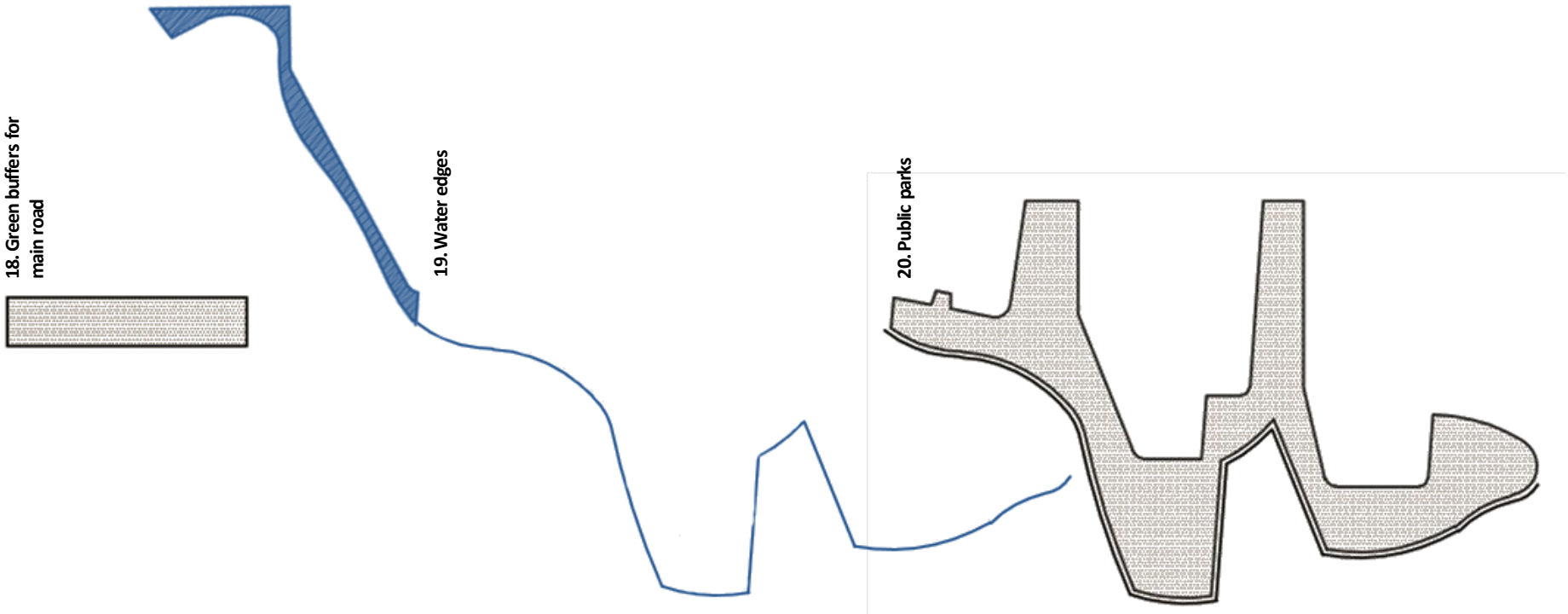
17. Open Spaces In Power Grid Zone

1. Entrance gesture

0 100 200 500m

Open space types

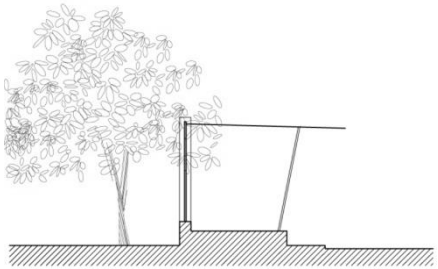
Human occupation



0 100 200 500m

Open space types

Human occupation

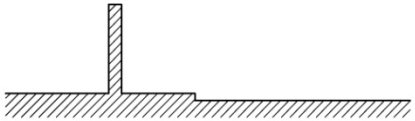


3.0 m+1.0 m wide pavement







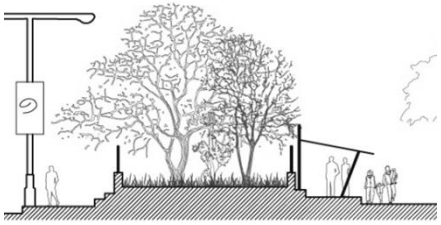


1.5 m wide pavement









2.3 m wide pavement

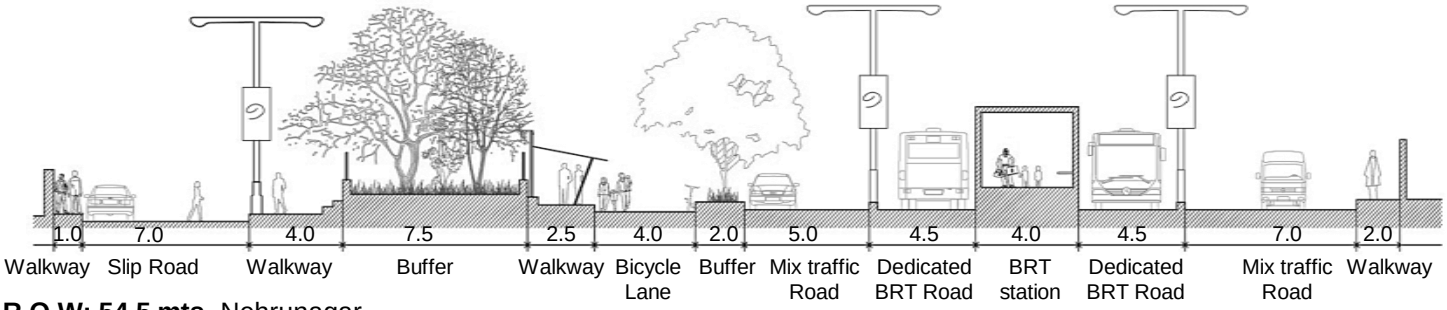




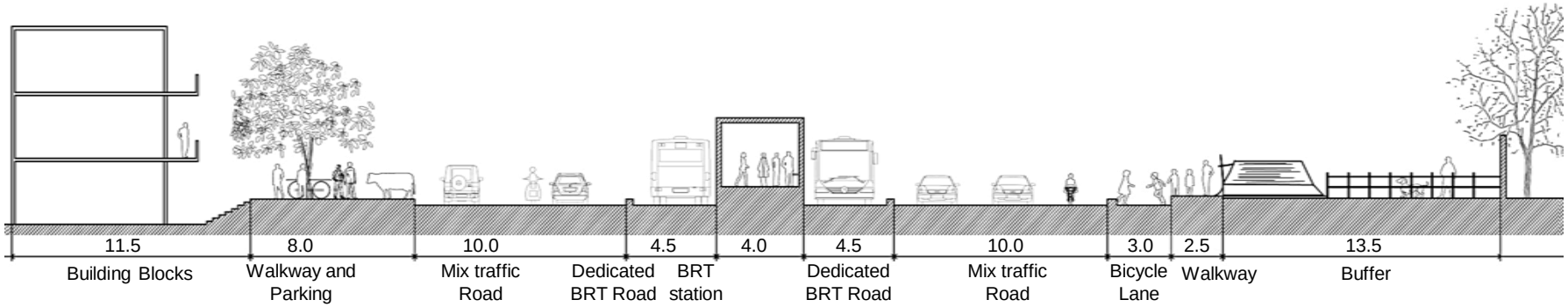


Mapping street activities

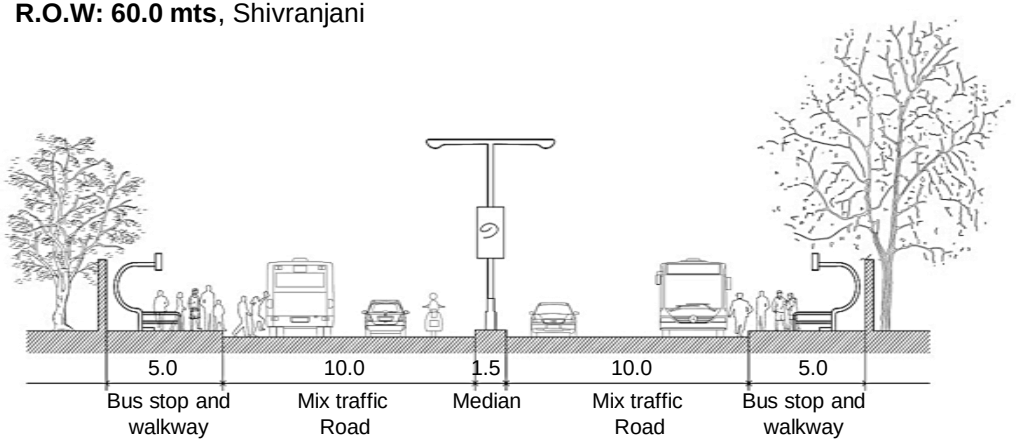
Human occupation



R.O.W: 54.5 mts, Nehrunagar



R.O.W: 60.0 mts, Shivranjani



R.O.W: 32.0 mts, University

***Palava**:* Multimodal corridor: 80.0 mts, Primary street: 31.0 mts; Secondary street: 12.0 mts; Tertiary street: 11.6 mts.

Parimal Garden



Land use map

Residential Commercial Institutional

Area
40207sq.m

Scale
Medium

Popularity
Medium

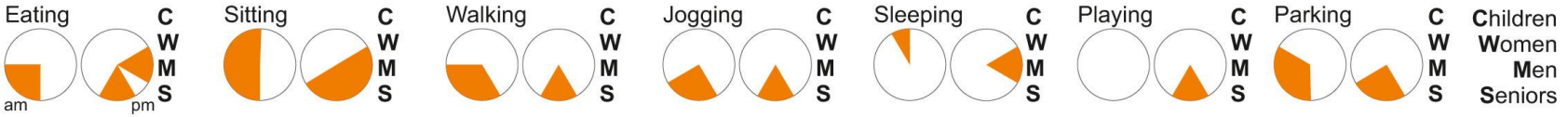


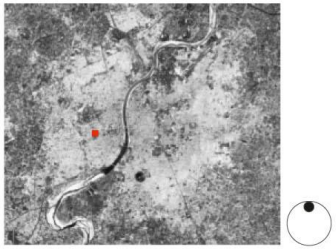
Occupation map

Eating Sitting Walking & Jogging Sleeping Parking

Multiple scale usage
Yes

Degree of perceived enclosure
Low

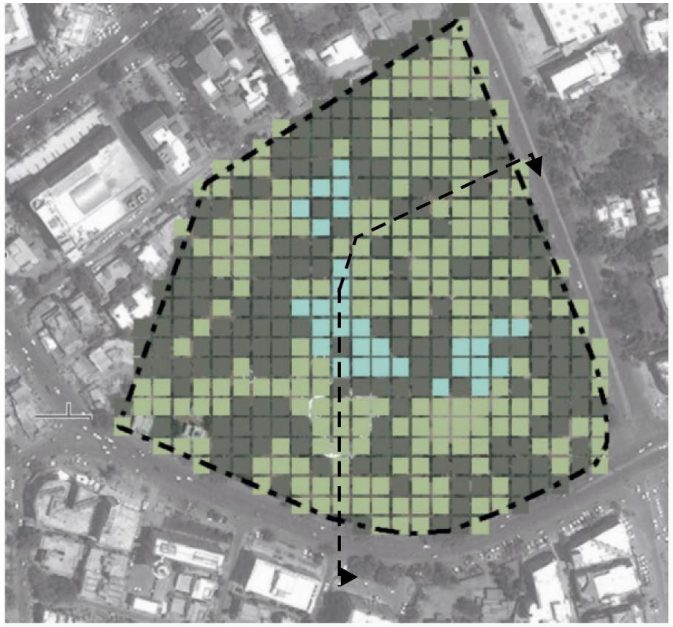




Key plan (n.t.s)



Mapping open spaces **Human occupation**



Grain map



43.5% tree shade scattered groves



48.6% open space *maidan,* lawn



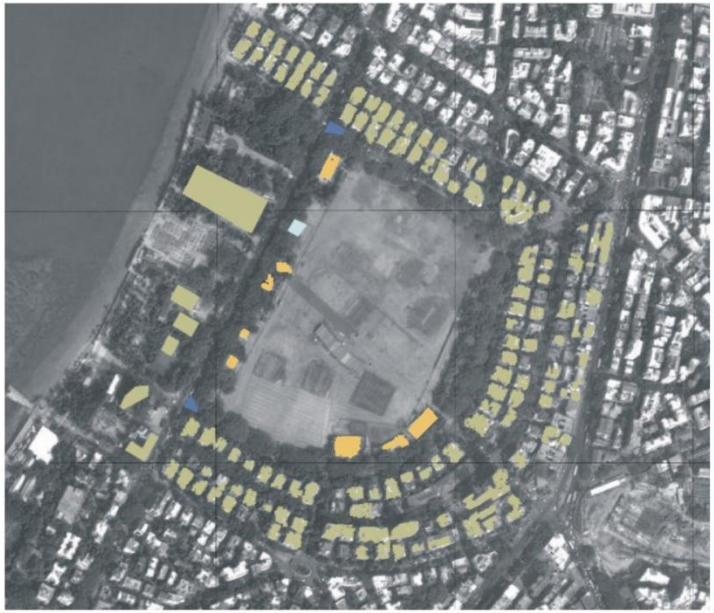
7.9% water bodies lily pool



Mapping open spaces

Human occupation

Shivaji Park



Area
100202.5sq.m

Scale
Large

Popularity
High



Multiple scale usage
Yes

Degree of perceived enclosure
High

Land use map

Residential Commercial Recreational Religious

Occupation map

Eating, Sitting, Walking/Jogging, Sleeping Parking

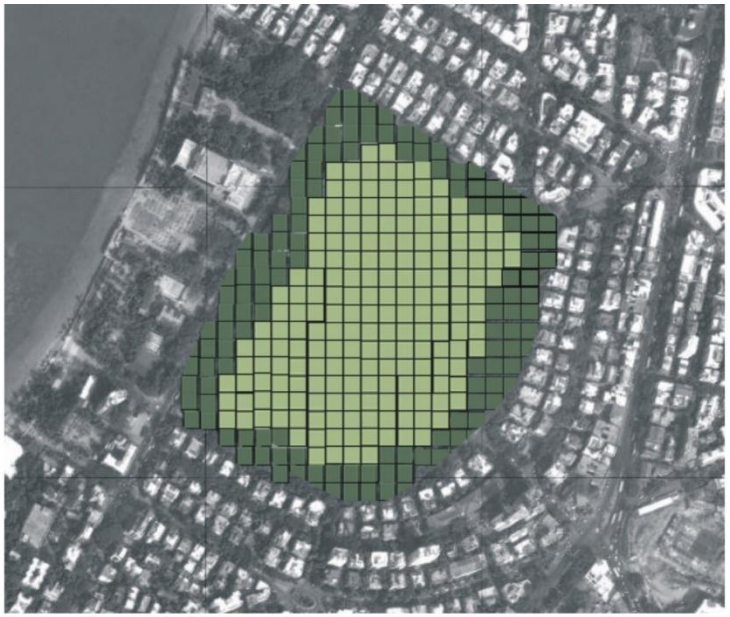




Key plan (n.t.s)



0L



Grain map



39.0% tree shade
scattered/dense groves



61.0% open space
maidan / lawn

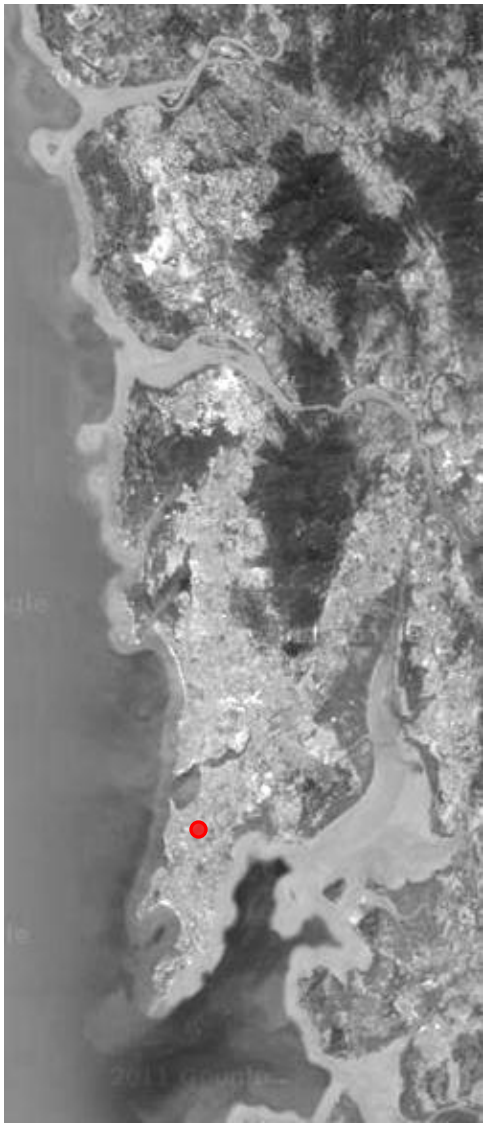
Inferences



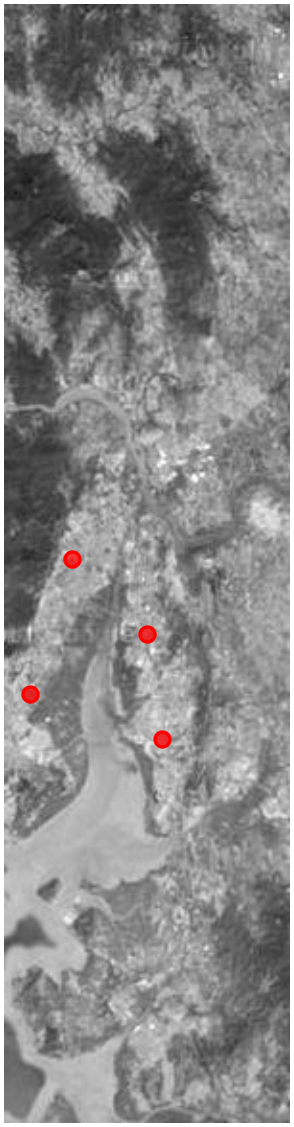
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Human occupation

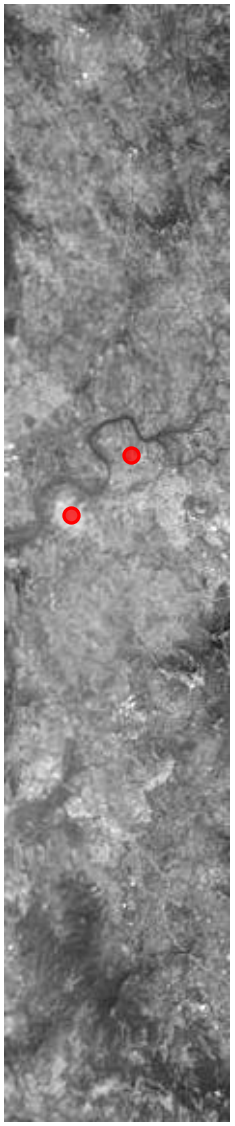
Mapping open spaces



Mumbai



Adjoining areas



Dombivilli and Kalyan

Background studies

i) Examining identity in terms of :
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Rice and fish farming, northeast India

Identifying traditional landscape types



Areca nut and black pepper cultivation

Identifying traditional landscape types







Shenyang University Campus
21 hectares
China
Turenscape, 2004

Interpreting landscape type for contemporary condition







Storm barrier on Oosterschelde Weir
2.5 hectares
Holland
West 8, 1992

Creating a new language for and from existing settings

Background studies

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Comparison Study

1. Soil cover has depleted

2. Area under agriculture has reduced

3. Stone and soil quarrying has increased

.



Key plan

Dec 2004

Feb 2011

0 500m





Key plan

Vegetation Map

- Tree cover
- Agriculture
- Scrub vegetation
- Areas to be reconsidered



1



2



3

Flora observed on site

Mangifera indica
Ficus benghalensis
Samanea saman
Azadirachta indica
Pongamia pinnata
Casuarina equisetifolia
Moringa oleifera
Tectona grandis
Thespesia populnea
Tamarindus indica
Syzygium cumini
Anthocephalus cadamba

0 500m

Hydrology Map

- Existing depressions due to quarrying
- Existing natural depressions
- Surface run-off path
- Areas to be reconsidered


1


2


3


Key plan

0 500m

Soil Cover Map

- Rocky strata
- Shallow soil
- Medium soil
- Deep soil
- Areas to be reconsidered

1



2

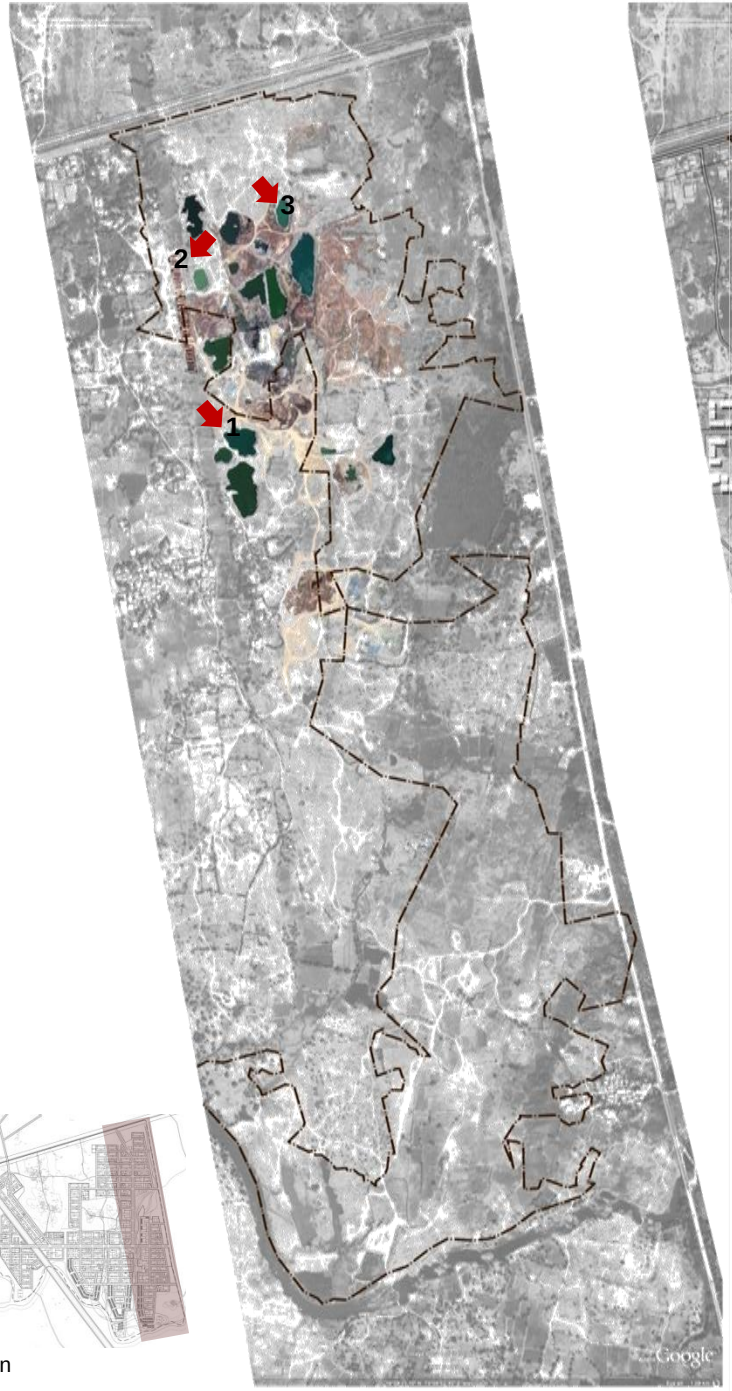


3



Key plan

0 500m





Human Intervention

- Quarrying
- Brick kilns
- Areas to be reconsidered

1



2



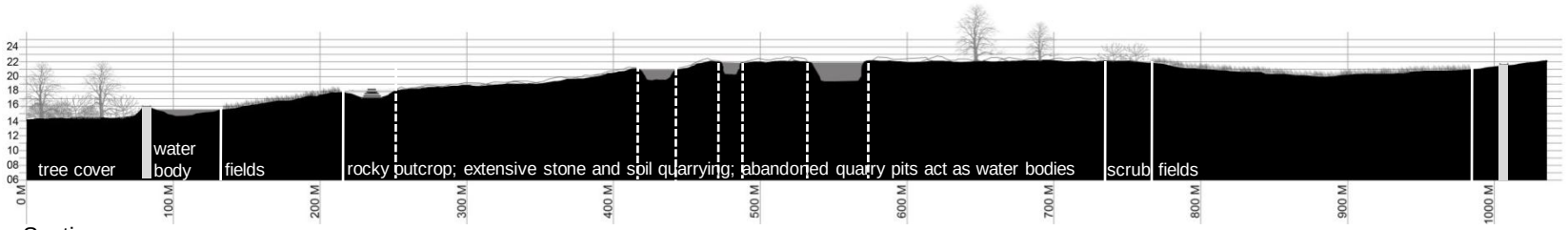
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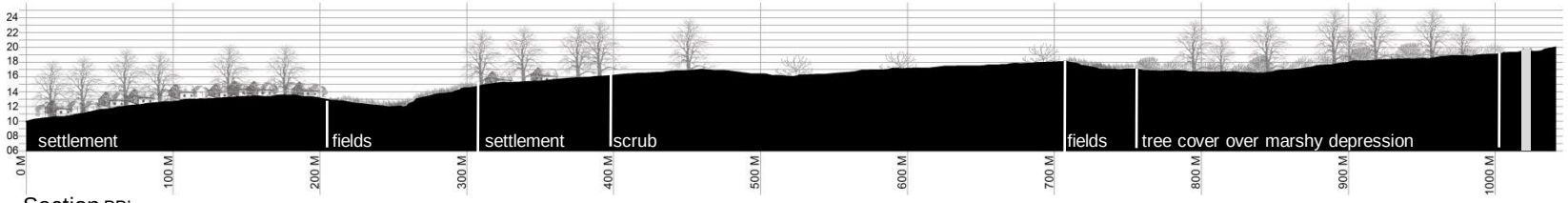
Key plan

0 500m

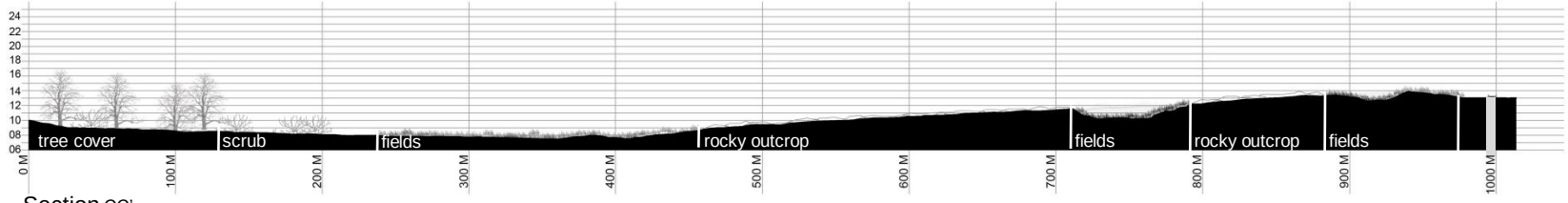
Sections



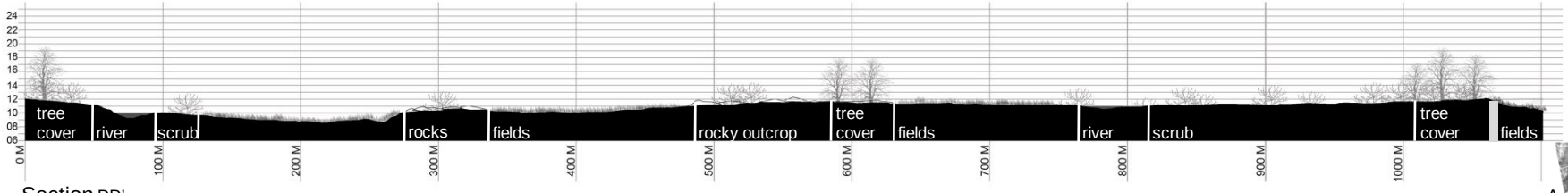
Section AA'



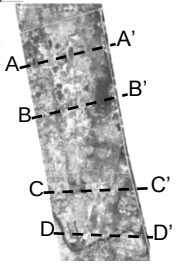
Section BB'



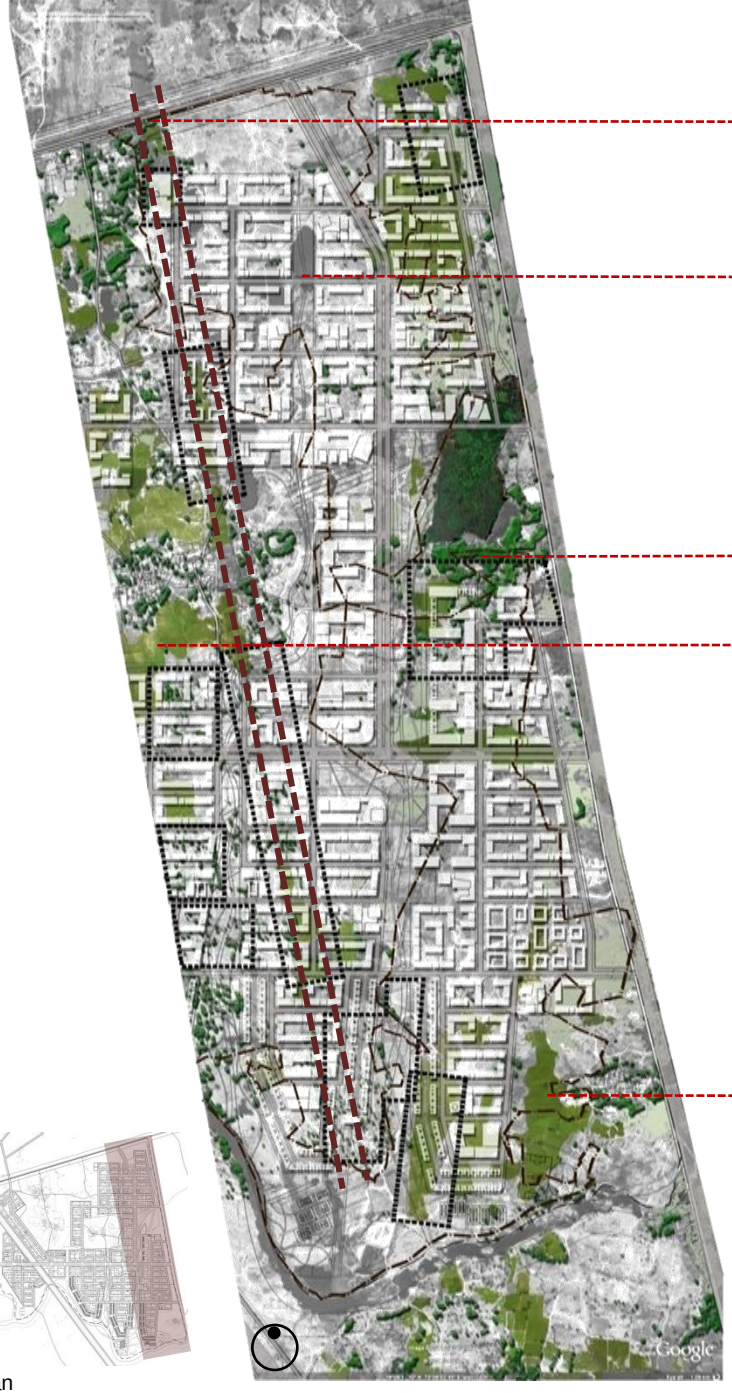
Section CC'



Section DD'



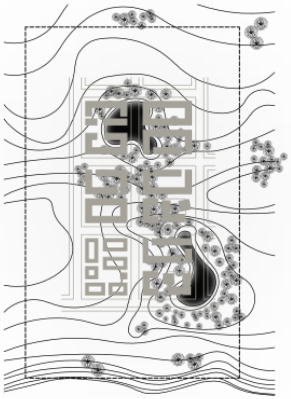
road



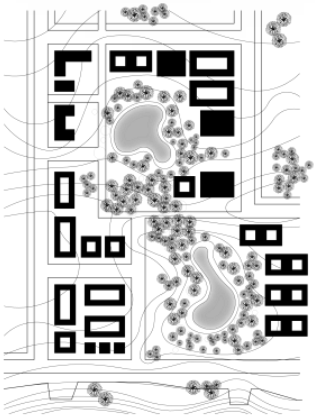
Strong existing line of surface water runoff: strong geometric and functional indicator, should be responded to.

Existing depressions: offer an opportunity for generating a different building type; and an existing water resource. These can also become valuable open space assets.

Existing tree cover: needs to be conserved; can be incorporated in public/institutional spaces and adjoining buildings can be designated public amenities.



Deep to medium soil depth in limited pockets. These need to be conserved and can be incorporated within open spaces.



Key plan

Background studies

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For transitions

A -All roads to buildings

B -All building to building

C -All roads to open spaces

D -All buildings to open spaces

E - All open space to open space





Key plan

Developing kit of parts

For surfaces

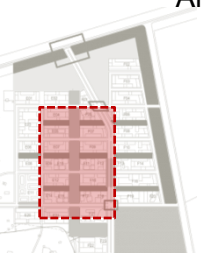
1.Vehicular
- High intensity traffic
- Low intensity traffic
- Cycling tracks

2.Pedestrian
- Footpath
- Trails
- Jogging paths

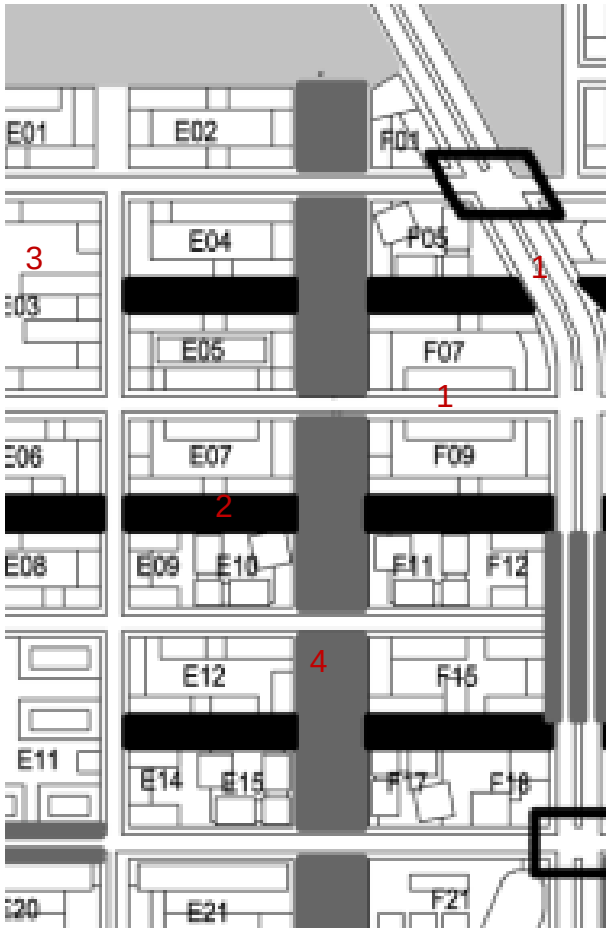
3. Hardscape
- Plaza
- Courts

4. Softscape
- Parks
- Neighborhood areas
- Swale

5. Vertical
- Signage
- Steps
- Railings
- Artists' installations



Key plan



Developing kit of parts

For objects

Barriers and control

Lighting

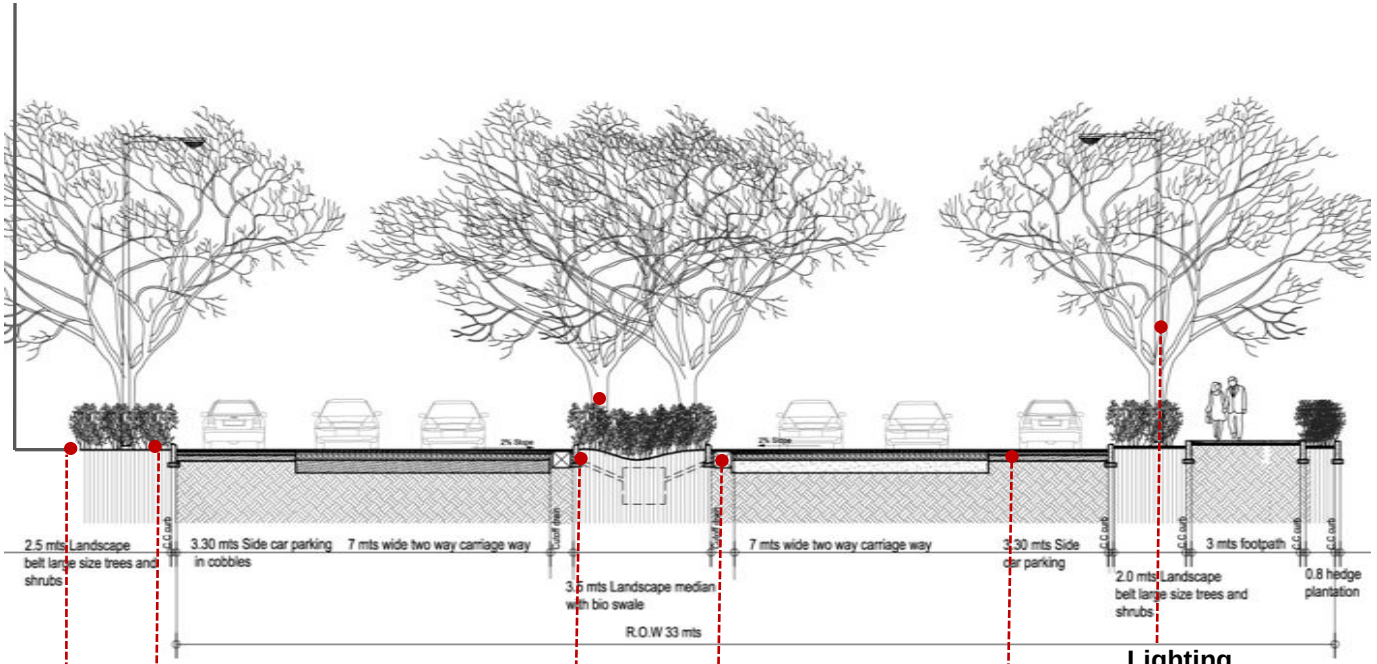
Way finding

Street furniture

Visible utilities
manhole covers,
irrigation heads,
fire hydrants etc.

Planting details
edges,
containers,
planters etc.

Buildings predominantly
in open areas



Side walk
Material:
Cobbles
Stone
Concrete
Paver blocks

Tree guard
Tree pit
Material:
Metal
Wooden
Concrete
Stone
Design articulation

Curb
Material**:**
Concrete
Stone
In situ

Grating
Material:
Metal
Concrete
Design articulation

Parking
Material:
Concrete
Paver block

Lighting
Material:
Metal
Concrete
Lux levels
Height
Location
Light source
Design articulation

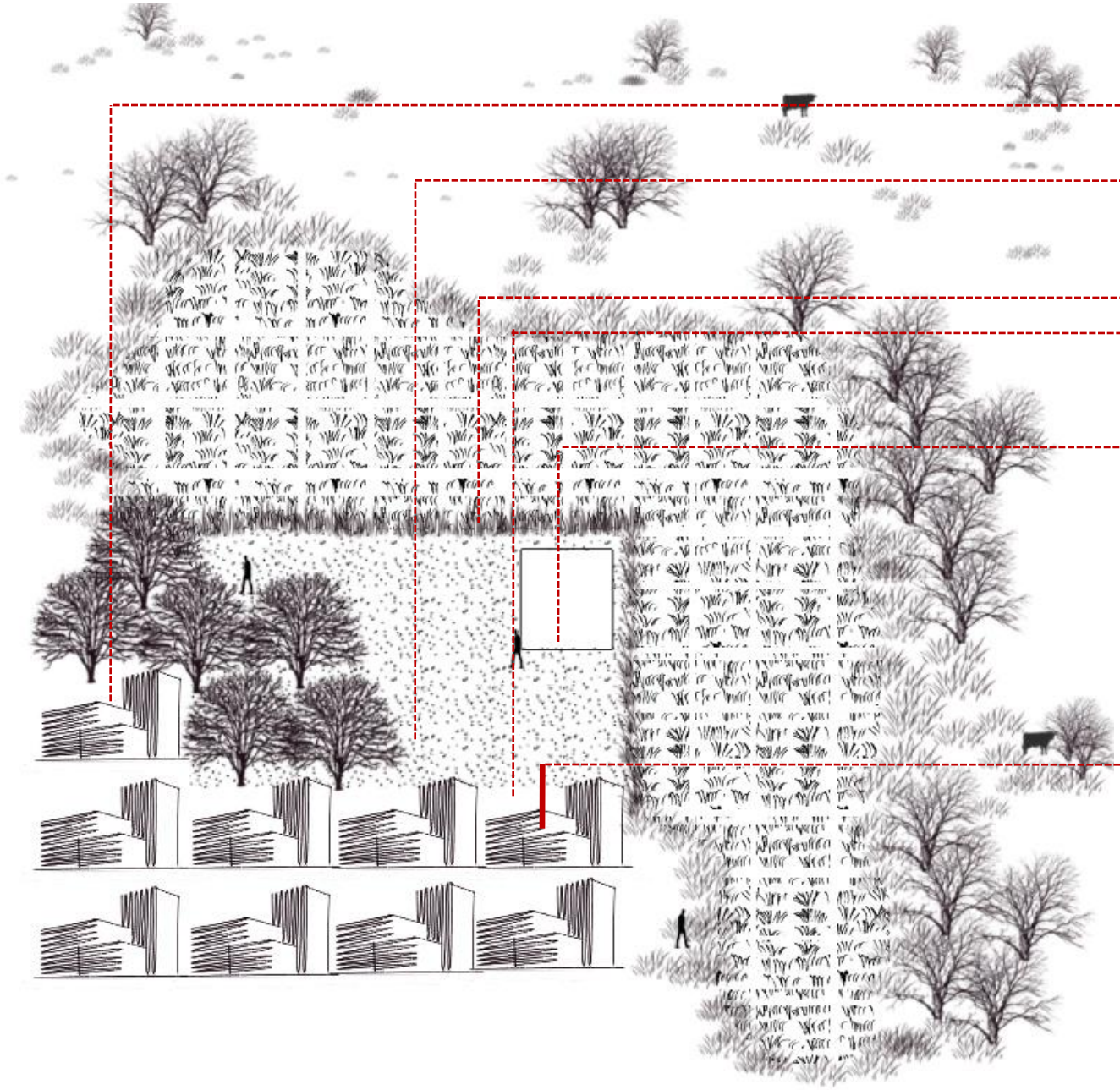


Key plan

Developing kit of parts

Guidelines

Articulating guidelines in terms of:
i) Programme
i) Area
ii) Edges
v) Functions
v) Behaviour
diurnal
seasonal
vi) Kit of parts
vii) Maintenance
viii) Sustainability
ix) Budget



No. of houses/ no. of people
Density

Open space required
Min:
Max:

Edges: soft/ dissolving

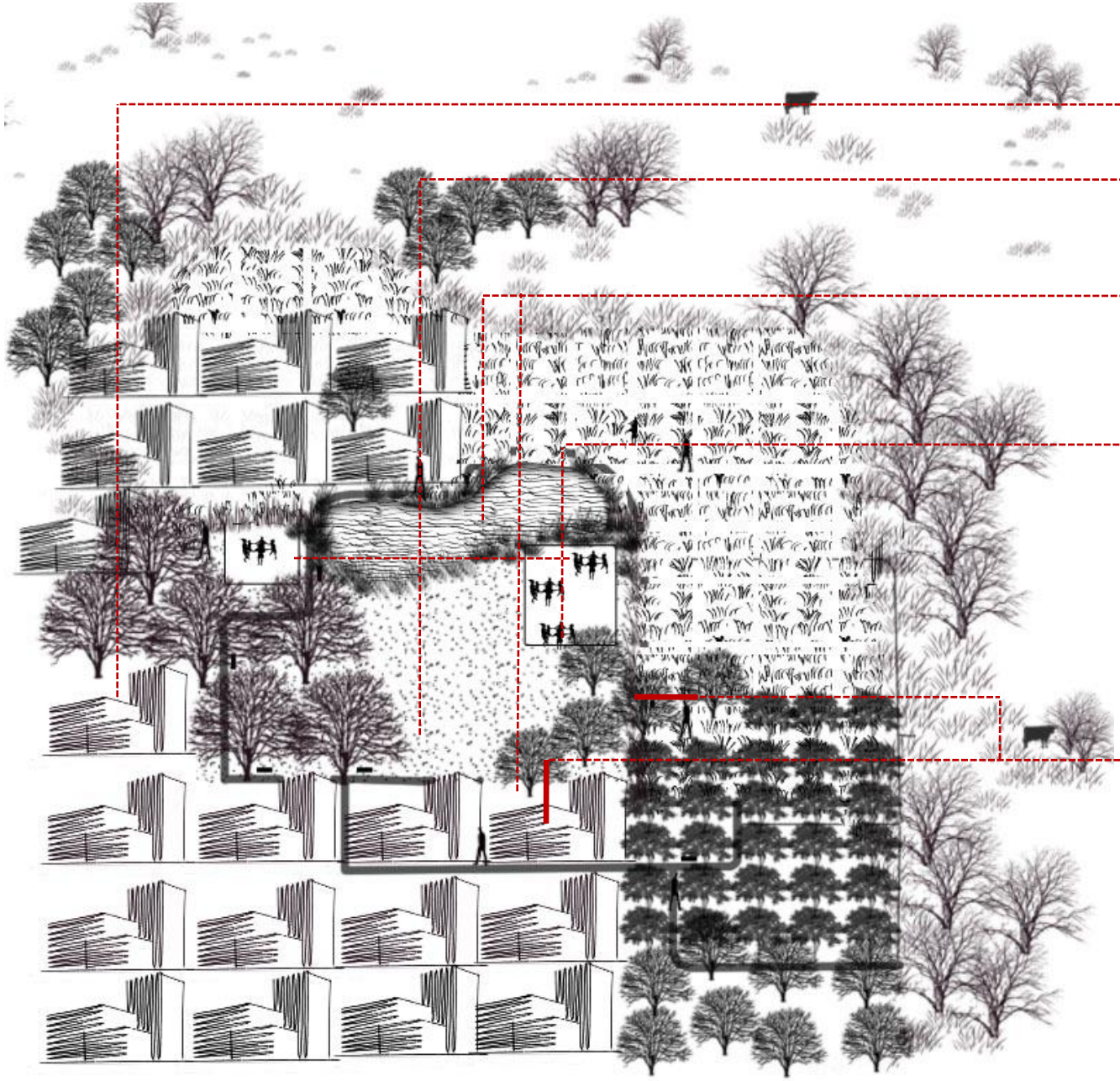
Edges: defined

Functions: play field

Kit of parts
transitional surfaces
lighting
irrigation
furniture

Maintenance
low maintenance

Sustainability



No. of houses/ no. of people
Density

Open space required
Min:
Max:

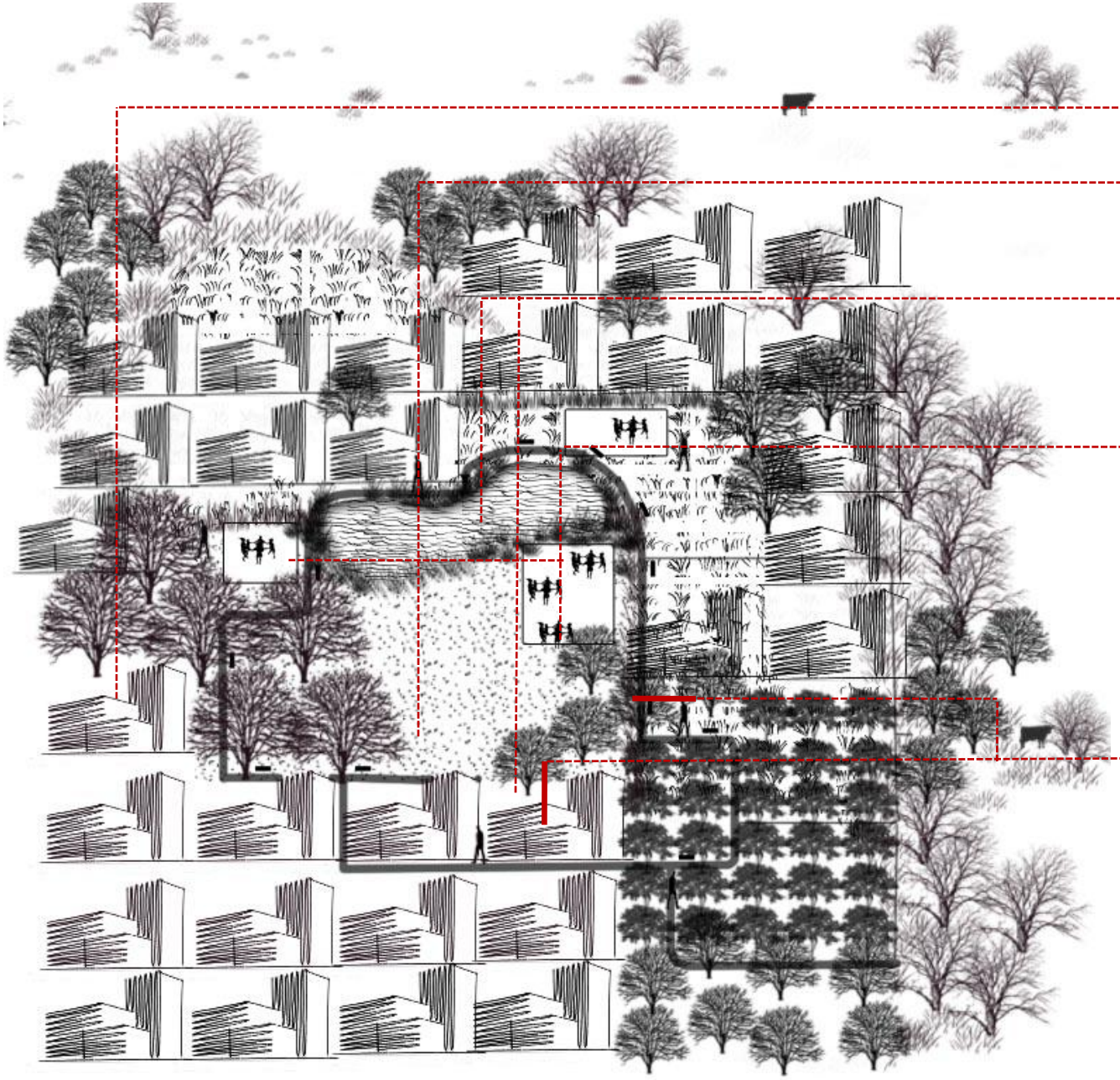
Edges :soft/ defined

Functions: Play field
Maidan
Lake side
recreation
Urban agriculture
Orchard

Kit of parts
transitional surfaces
lighting
irrigation
furniture

Maintenance
low maintenance

Sustainability



No. of houses/ no. of people
Density

Open space required
Min:
Max:

Edges: soft/ defined

Functions: Play field
Maidan
Lake side
recreation
Urban agriculture
Orchard
Jogging track
Play equipment

Kit of parts
transitional surfaces
lighting
irrigation
furniture

Maintenance
low maintenance

Sustainability

***Palava* Development Guidelines**

01. Introduction to project

02. Ground stories

Articulating the master plan

Detailed survey
Broad phasing and product mix
Economic outlay and forecast

03. Recasting

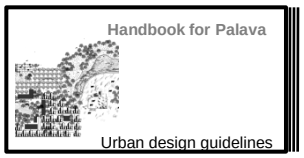
Master Plan

Environmental factors
Density
Accessibility
Infrastructure
Building typology
Construction and building technology
Management
Sustainability

Neighbourhoods

Streets

Units



04. Components

Building units (KAPL)
- Typology
- Materials

Open space systems (PBB)
- Identity
- Typology
- Phasing
- Components

Infrastructure and Engineering (Apptd. consultants)
- Water
- Power
- Sanitation

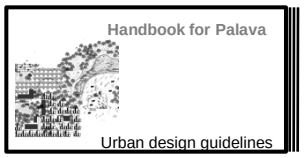
Accessibility and transportation (Anvita Arora)
- Systems
- Details

Sustainability (Sanjay Prakash)
- Master plan
- Infrastructure and Engineering
- Pre development
- Neighbourhoods
- Streets
- Building units
- Post development

Construction technology & management (Lodha group)

Technological connectivity (Anupam Saraph)

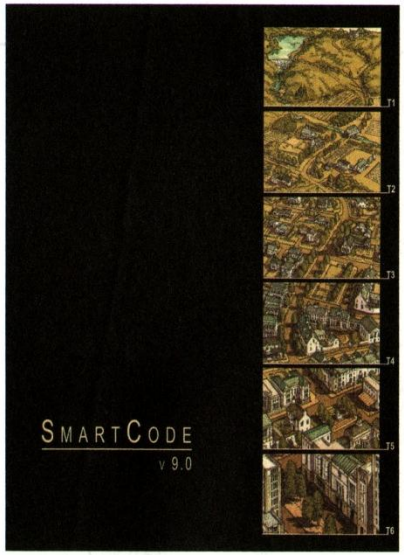
Management and Governance (Lodha group)



Guidelines for development of open spaces for *Palava*

2.10 Adopt a Smart Growth Code

Introduce standards that allow smart growth.



The SmartCode, which makes smart growth legal at every scale, may be downloaded at www.smartcodecentral.org

Suburban sprawl does not just happen. In most places existing codes and public works standards have inadvertently made smart growth illegal. Governments must, at the very least, provide developers a regulatory environment in which smart growth is possible. One such set of rules is now available as freeware: the *SmartCode.* Municipalities are warned that attempting to modify a conventional suburban code into a smart growth code is difficult, if not impossible, as the two models are incompatible. But it is typically neither necessary nor politically possible to completely replace existing regulations, so the SmartCode is conceived to be introduced in parallel as an incentivized alternative. At the time of this writing, many dozens of municipalities are implementing form-based codes, including Denver, Miami, Montgomery, Sarasota, El Paso, and San Antonio.

Source : The Smart Growth Manual, Andress Duany, Jeff Speck, Mike Lyndon

Open space studies for Mumbai.
Detailed site observations and analysis for environmental and ecological factors.
Exhaustive structure of guidelines for open space systems for *Palava.*
Comprehensive compilation of conditions and structure of kit of parts with details in part.
Redrawing up master plan based on environmental factors based on research and site observations.
Detailed programme for two spaces in the project.

Schedule for coming two weeks