



Rivergreens : The Ravine Park at Kharadi Pune, India

IFLA ASIA-PAC LA Awards 2024

Award Category- Wildlife, Biodiversity, Habitat Enhancement or Creation (Built Category)

Project Statement

The Ravine Park at Rivergreens in Kharadi, Pune, India, spans 4.25 acres of resilient landscape. Positioned near the Mula-Mutha river. It is a the linear park that creatively links the sensitive river ecology to the original ravine on site. It serves as a symbol of sustainable water management, utilizing landscape infrastructure to redirect water flow and prevent flooding. The park maintains the existing watershed, trees, and ravine ecology, becoming the hub of passive recreation. Bio-swales are employed to enhance the thriving ravine system, encouraging community interaction with the natural landscape.

Furthermore, an elevated canopy walk built around existing trees on site and an observation deck allow residents to engage closely with nature. The landscape is crafted with locally available stones, native species and steel structures that have a minimal footprint on the sensitive ecology of the ravine.

Amidst challenges like the pandemic, remote coordination with site teams ensured the project's holistic nature. The successful coordination between remote teams and the integration of various disciplines highlights the importance of holistic planning and execution in creating sustainable communities.

The project stands as proof that private developers can contribute to ecologically sensitive initiatives, making it a unique and successful example of resilient landscape urbanism in India.

Project Narrative

The Ravine Park at Rivergreens marks a bold new direction in urban development in India, emphasizing the principles of landscape urbanism. Situated in Kharadi, Pune, this integrated township re-imagines site planning and urban form-making, placing a resilient landscape at its core. This essay explores the design and planning of the Ravine Park, showcasing its commitment to ecological sensitivity and sustainable development.

Rivergreens is a thoughtfully designed community that seamlessly blends residential, commercial, and recreational spaces. At the heart of the township is the Eco-loop, a boomerang-shaped linear park that links the Mula-Mutha river ecosystem to the on-site ravine system. This green corridor is essential for non-motorized movement, offering universally accessible pathways that ensure residents can move safely and have a lighter carbon footprint. The master plan's integration of landscape and infrastructure enhances community life, fostering a deep connection to nature.

Central to Rivergreens is the Ravine Park, an exemplary model of using landscape as infrastructure. The park is designed to manage water flow and prevent flooding while preserving the natural watershed and existing trees. By celebrating the ravine's ecology and incorporating bio-swales, the park's design improves water management and supports the thriving ravine ecosystem. This approach not only addresses environmental challenges but also enriches the local ecosystem, creating a harmonious relationship between nature and the community.

Ecological sensitivity is at the core of the township's design. The planning process involved meticulous site surveys and ongoing revisions to conserve existing vegetation and hydrology. The Ravine Park recycles 100% of grey water on-site, reusing it within the landscape to enhance water sustainability. This commitment to ecological principles demonstrates that large-scale projects can prioritize environmental sustainability, setting a new standard for

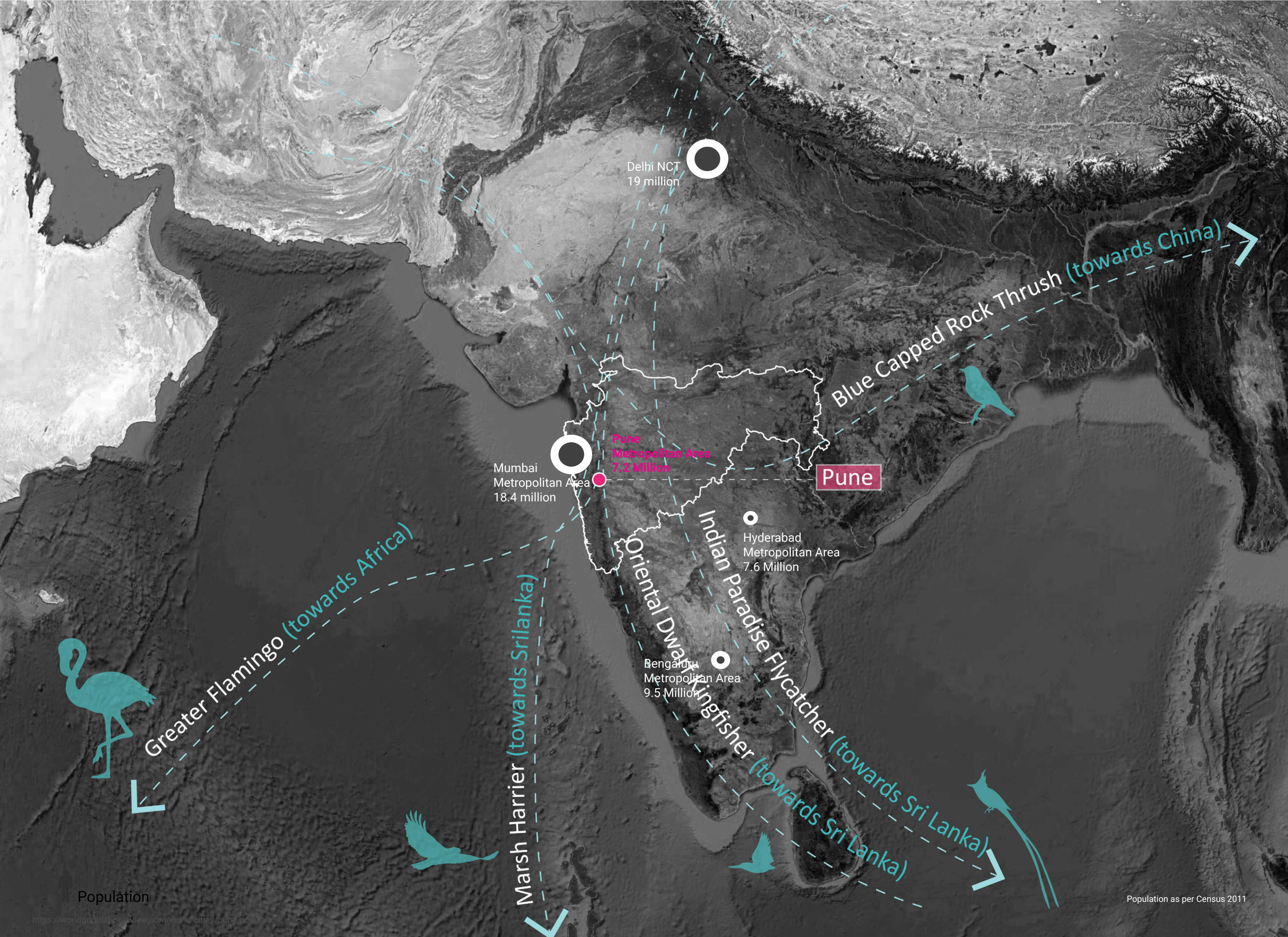
urban development.

The Ravine Park offers a variety of recreational spaces, from serene meditation zones and natural playscapes to camping and picnic areas. The park features an observation tower, or Machaan (a local term for a platform as in a tree used for observation in hunting), which rises 15 meters above the ground and provides sweeping views of the park and the Mula-Mutha river. These diverse spaces are seamlessly integrated into the landscape, encouraging residents to engage with nature and promoting physical and mental well-being.

The park's lighting design enhances safety and aesthetics while minimizing light pollution. Wayfinding and signage celebrate the site's biodiversity, educating visitors about the local flora and fauna and fostering a sense of stewardship. This thoughtful approach enriches the visitor experience, creating a space that is both informative and inspiring.

The Ravine Park at Rivergreens aspires to be a model of resilient urbanism, demonstrating that large-scale, ecologically sensitive developments are both achievable and essential. This project aims to inspire other private sector initiatives to prioritize environmental sustainability, setting a thoughtful benchmark for urban planning. The goal of the Ravine Park is to showcase a holistic approach, integrating landscape and infrastructure to foster a vibrant, resilient community.

This project seeks to illustrate the potential of landscape urbanism to positively influence urban environments. It underscores the importance of integrating nature into urban planning, promoting a harmonious relationship between nature and the community. The Ravine Park at Rivergreens strives to exemplify how careful design and ecological sensitivity can enhance the quality of life, aiming to pave the way for a greener, more sustainable future for other developments to follow.




Population Growth: Pune Region

2031  (8.6 million)

2024  (7.2 million)

2021  (6.8 million)

2011  (5.1 million)

1991  (2.5 million)

1981  (1.7 million)

Pune : A Booming Hub for a Rapidly Urbanizing India

Urbanization and India

India is experiencing an urban transformation on a scale and speed only a handful of countries have witnessed. It is estimated that 11 new cities of the size of New Delhi will have to be built over the next two decades to house India's rapidly urbanizing population. Recent studies estimate that by 2030, cities will generate 70% of net new jobs and generate more than 70% of the nation's GDP. The emerging cities of India are the crucibles of future growth and shall play a critical role in making India a leading world economy.

Pune is one such growth hub in India that is attracting huge migration due to its growth in IT and Automobile Industries. As most India cities Pune is struggling to keep up with this influx of people and is expanding in all directions to provide for it outsized housing demands. As per some estimates the Pune Metro region is about to grow to 10 times it size in 1991. Rivergreens is one of the projects located in Kharadi located today along the fringes of the old pune city but is soon becoming a part of growing metro city area. Pune region enjoys a great setting of Bio diverse habitat with rivers and hills unique tot he region that is being undermined as the new development pressure leves no tie for the government to put in measure to protect or preserve biological assets of the region.

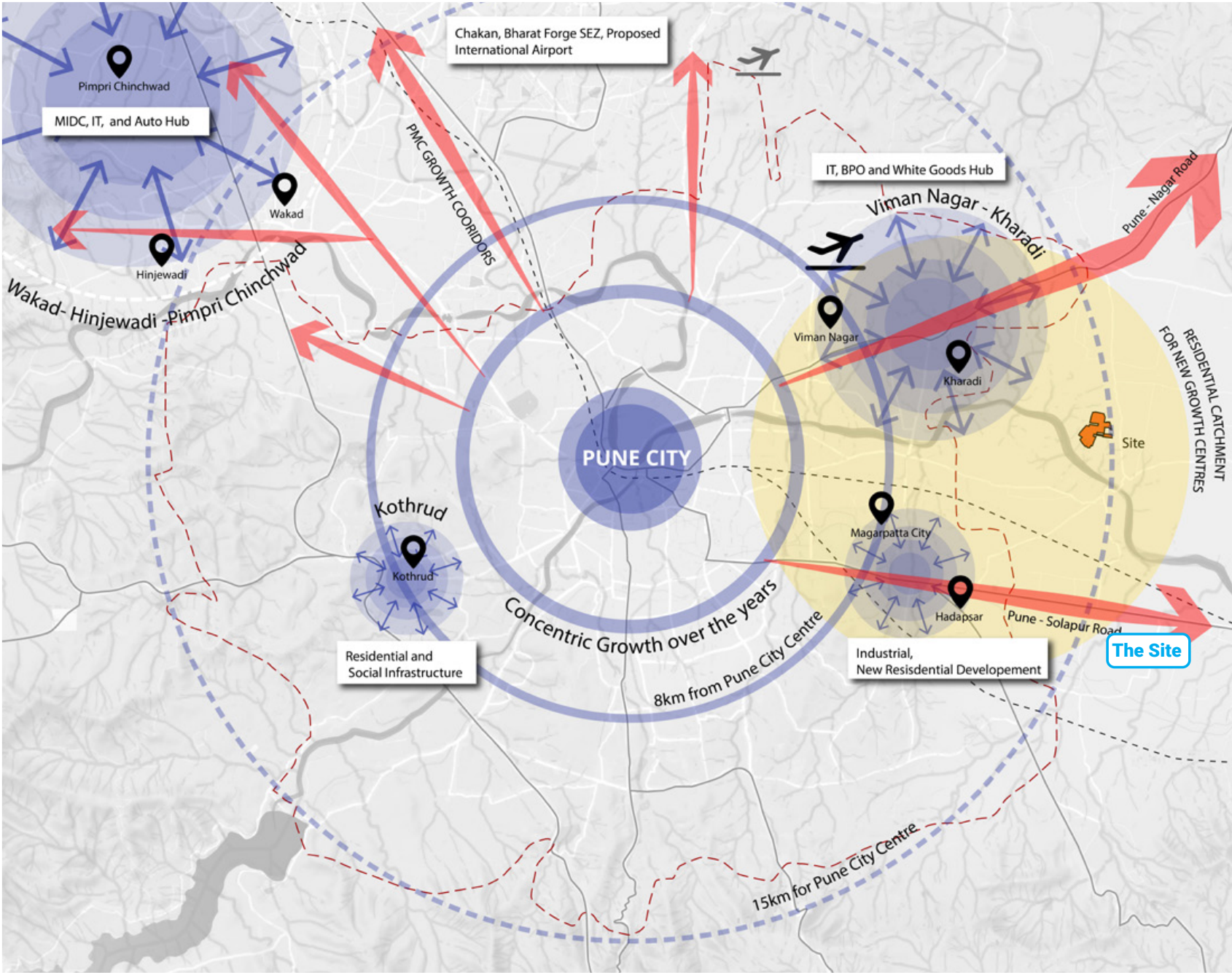
Site Location and Context

Development that lacks imagination: Golf Courses, Lawns, and lack of Trees

The new developments are largely speculative and aimed at attracting financially and socially emerging urban youth of India. The urban expansion of the city is largely driven by private developers with minimal provision for public housing provided by the government in comparison.

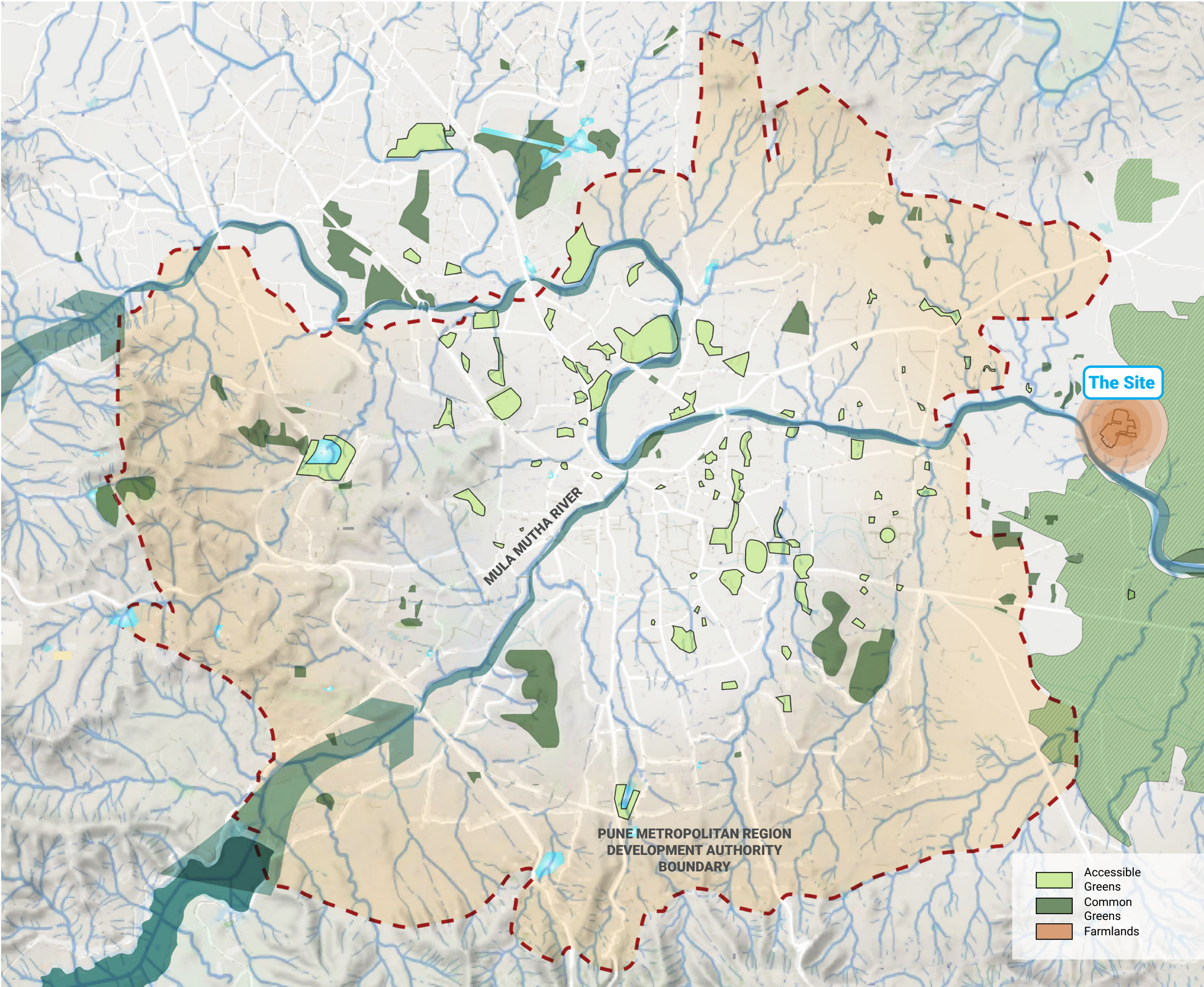
The real estate development pattern has an eerily similar theme of lawn and golf courses and the colonial legacy seen as a great amenity or foreground to the multi-storied housing units organised around these themed gardens and parks.

These great lawns and Golf courses are extremely difficult to maintain as they consume a large amount of water in the hot climatic conditions of Pune region. Another challenge is the lack of trees seen in these landscapes meant to provide a certain aesthetic that cater to unhindered views focusing mainly on under-storey planting and ground cover. This has led to loss of tree cover within the city that once used to pride in itself for its access to forests and its large trees.



The east of the Pune city is rapidly developing with several new residential and commercial under development. As indicated in the figure alongside, there are very few public open spaces for the residents to enjoy.

In the immediate vicinity of the site, the primary land use is farms which are slowly transforming to residential and commercial complexes.





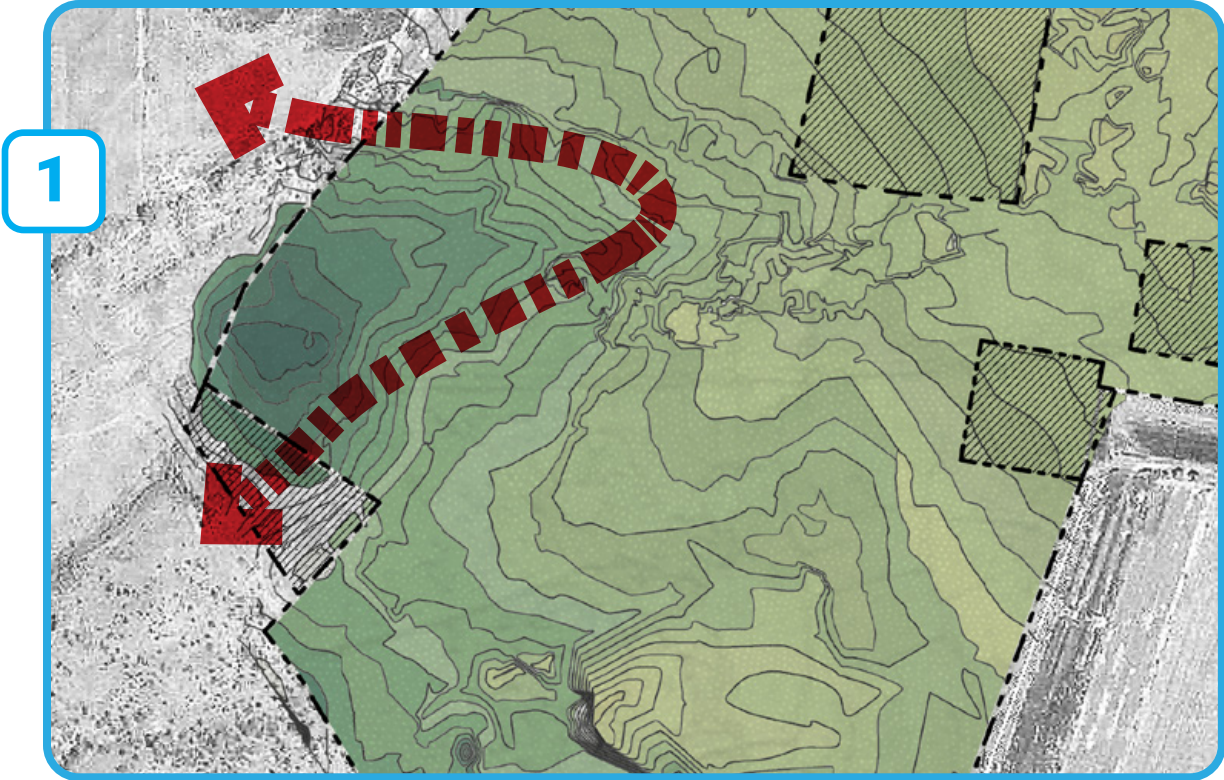
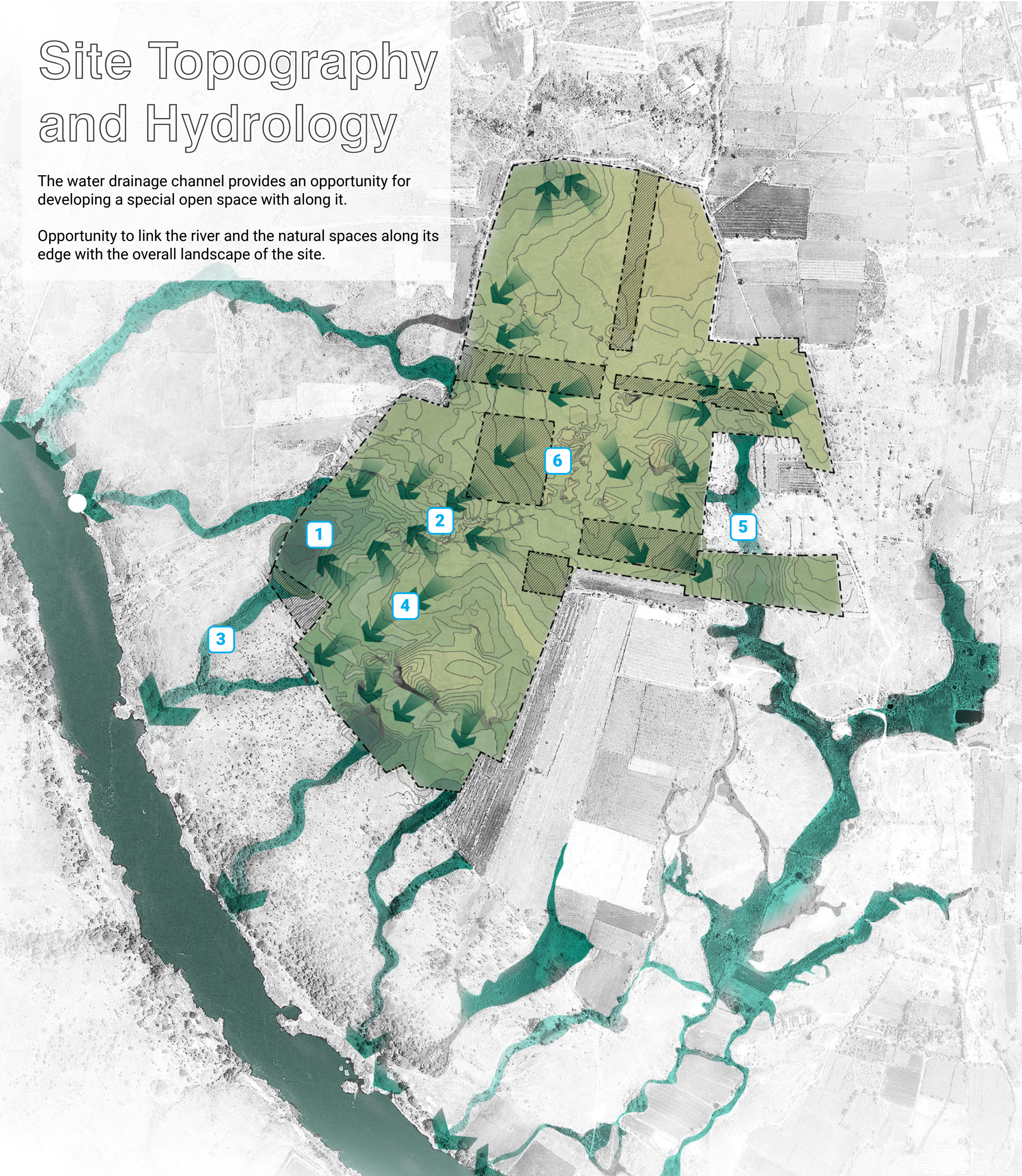
In this context Rivergreens Ravine Park Stands out a unique ecologically sensitive park developed and maintained by a market driven real estate developer.

The Rivergreens project has set a benchmark in the region for others to emulate and get inspired.

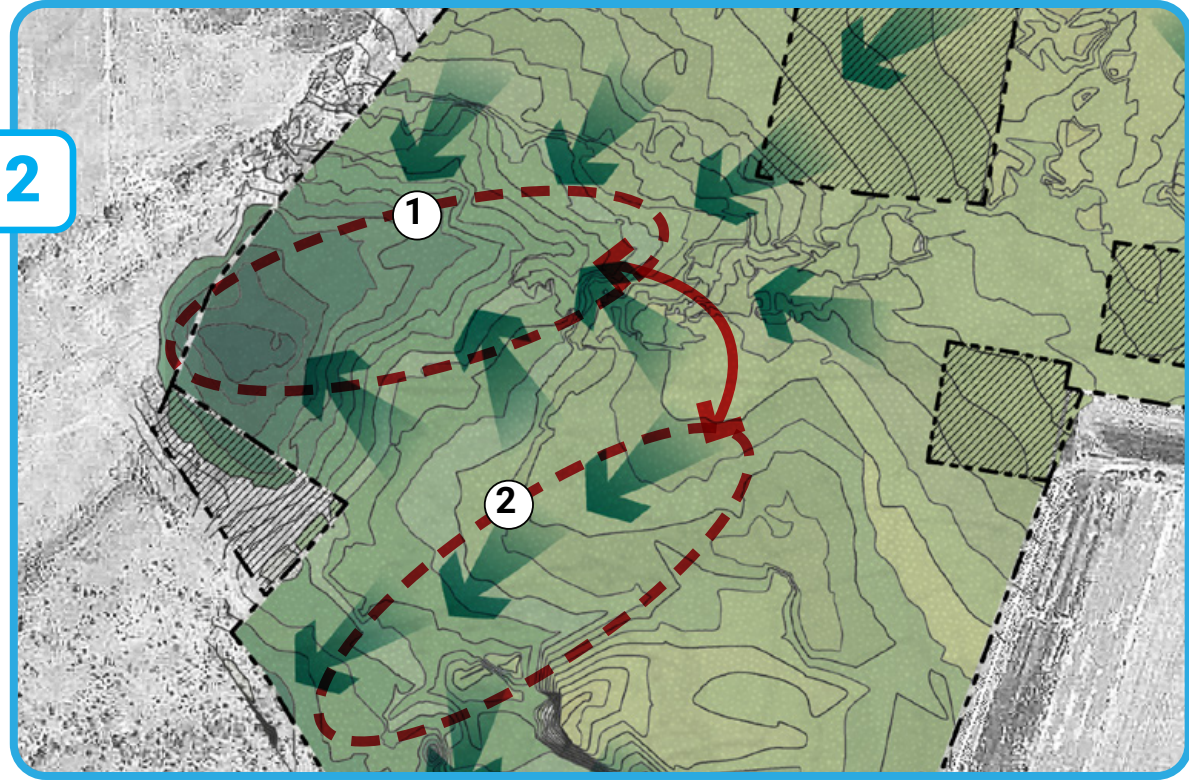
Site Topography and Hydrology

The water drainage channel provides an opportunity for developing a special open space with along it.

Opportunity to link the river and the natural spaces along its edge with the overall landscape of the site.



Topography and water flow analysis indicates the presence of a water channel and the formation of a “Ravine” like depression at the south-west edge of the Site.



Similar to the water channel at the south-West edge there is also a drainage channel running through the central portion of the site.



The proximity to the river provides an opportunity to create physical and notional connections between the site's and the river edge's natural landscape.



The ravine like depression and similar water flow zones retain moisture throughout the year. This allows for vegetation to grow in these zones as indicated in the aerial views of the site above.

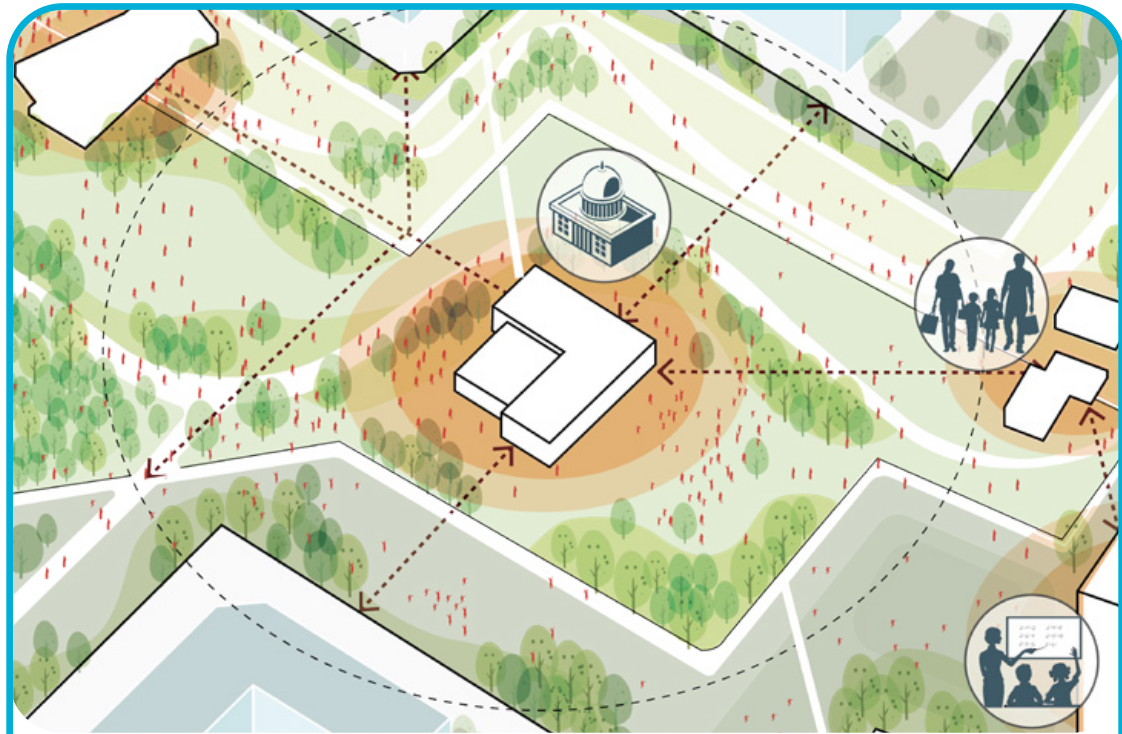


Natural Drainage Channels on site

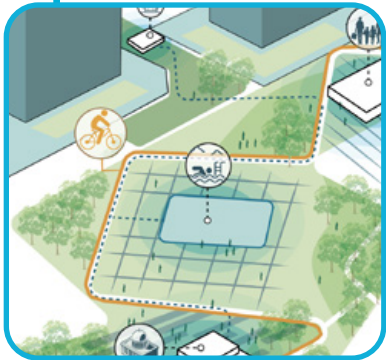


Natural Drainage Channels on site

Principles and Strategies



Identity and Legibility



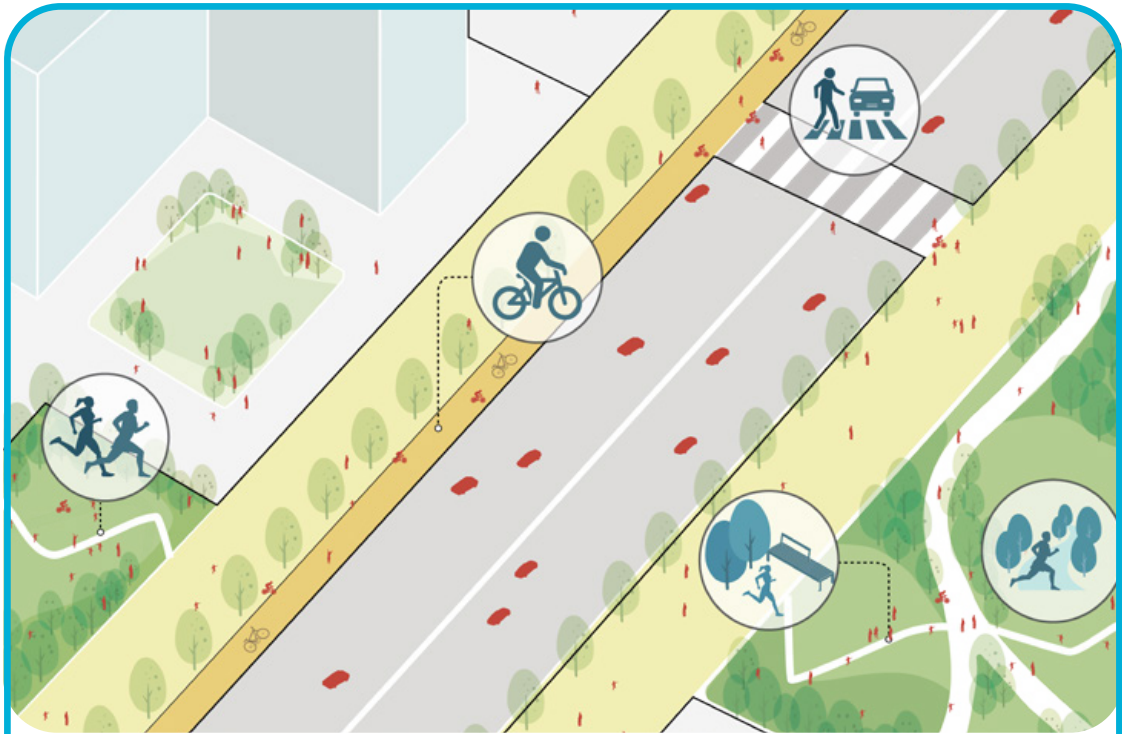
Creating **distinct character zones** with a transition between active to passive forms of recreation; connected by pedestrian and cycling pathways



Programming multiple activities within a **hierarchy of open spaces** depending on the level of intimacy required



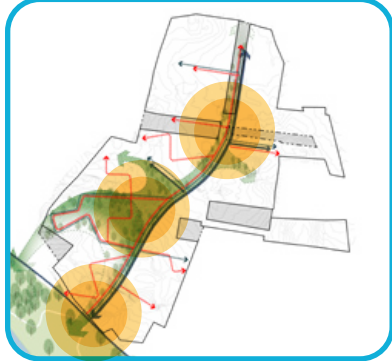
Creating **congregation spaces at different levels** ; from the Sector Level to the contiguous green level



Integrated Mobility



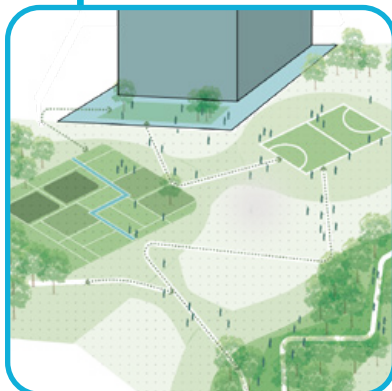
A **multi-modal transit approach** is to be taken in Master Planning ; cycling , pedestrian and vehicular networks are to be integrated.



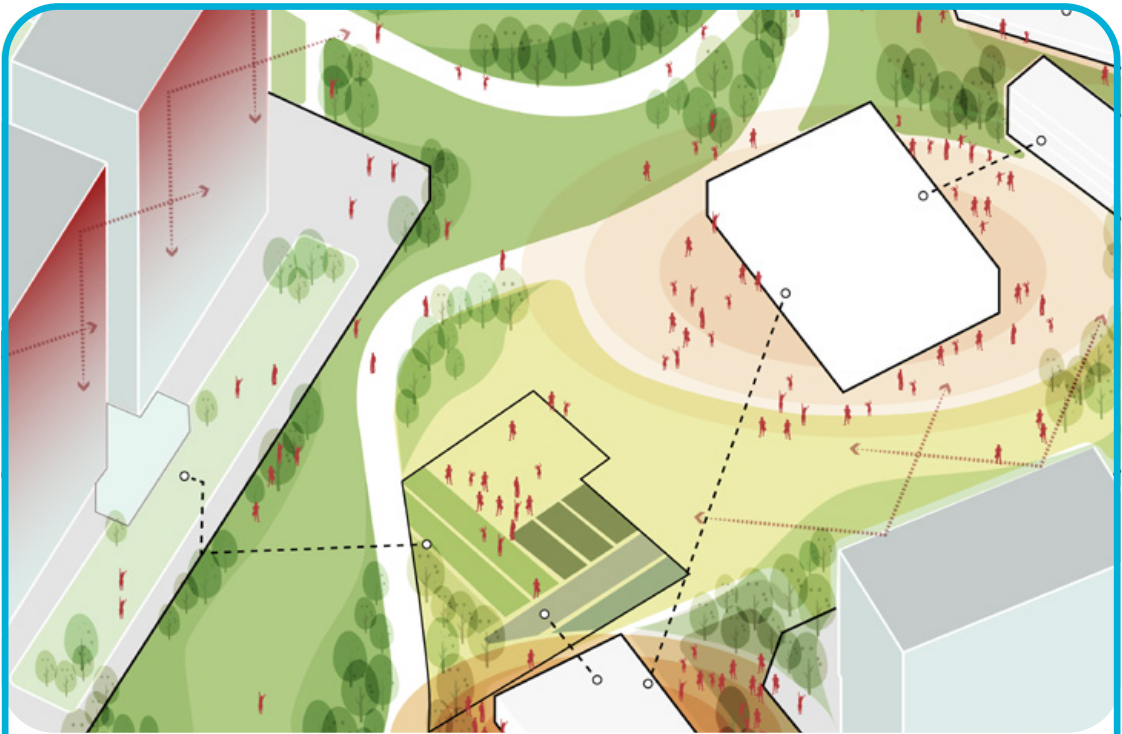
Strategically **create nodes of unique identity** that become pause points within the circulation network



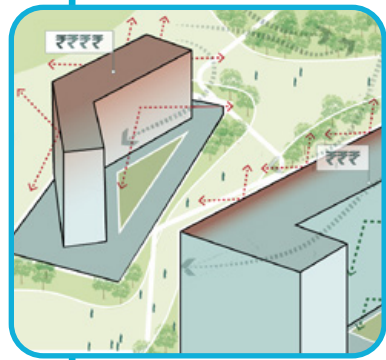
Complete Streets : The streets shall be designed with adequate vegetation for shading, signage and urban furniture to make it safe for everyone; pedestrians as well as drivers.



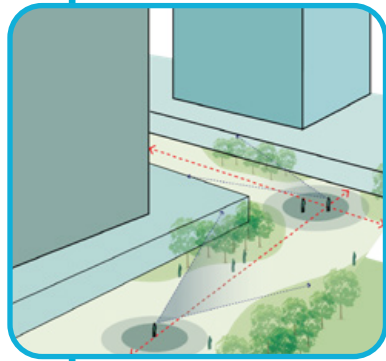
Using the **contiguous green** to connect different open spaces and programmes, both notionally and physically through both pedestrian and cycling routes



Placement of Builtforms



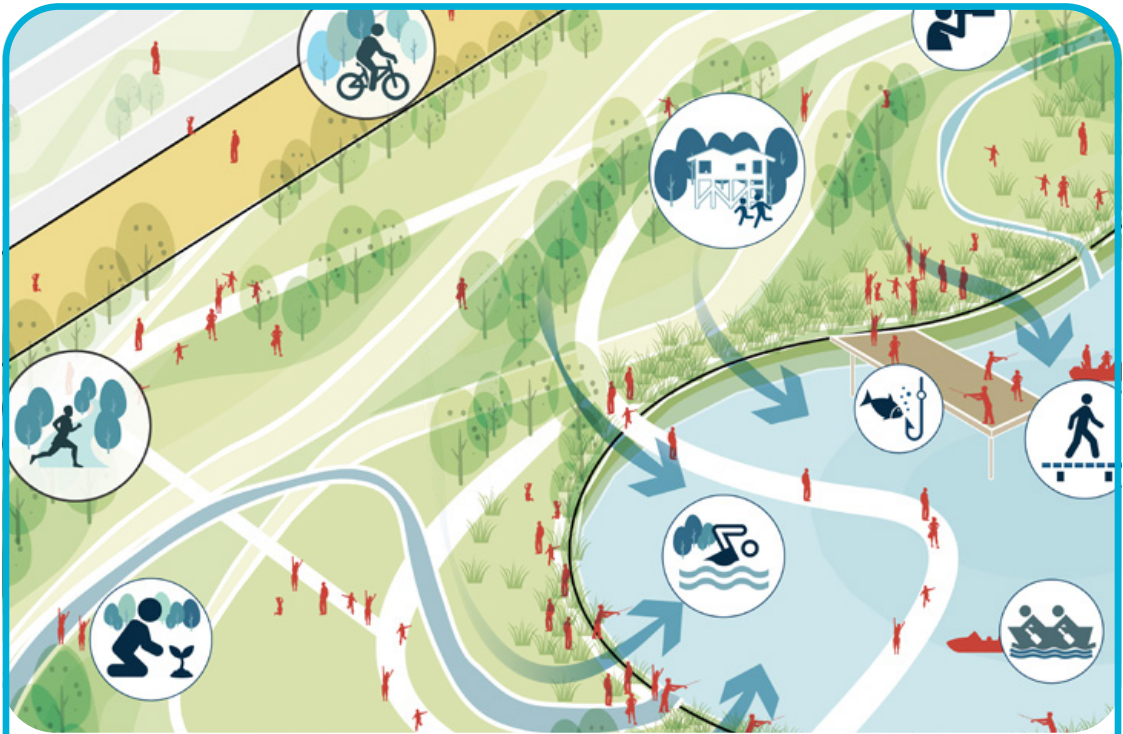
The orientation of the buildings is to aid in premium **value creation** and allow **Wind flow**



The built forms are to be strategically placed to create a **strong visual axes and increase legibility** ; They should aid in anchoring the Master Plan



The edges between built and unbuilt components should provide a **sense of security while also allowing visual permeability**



Harmonizing Nature and the Abode



Taking the residents **closer to nature** by creating multiple opportunities for interaction with the natural environment



Integrating the **water management strategy seamlessly with the Landscape design concept** throughout the master plan



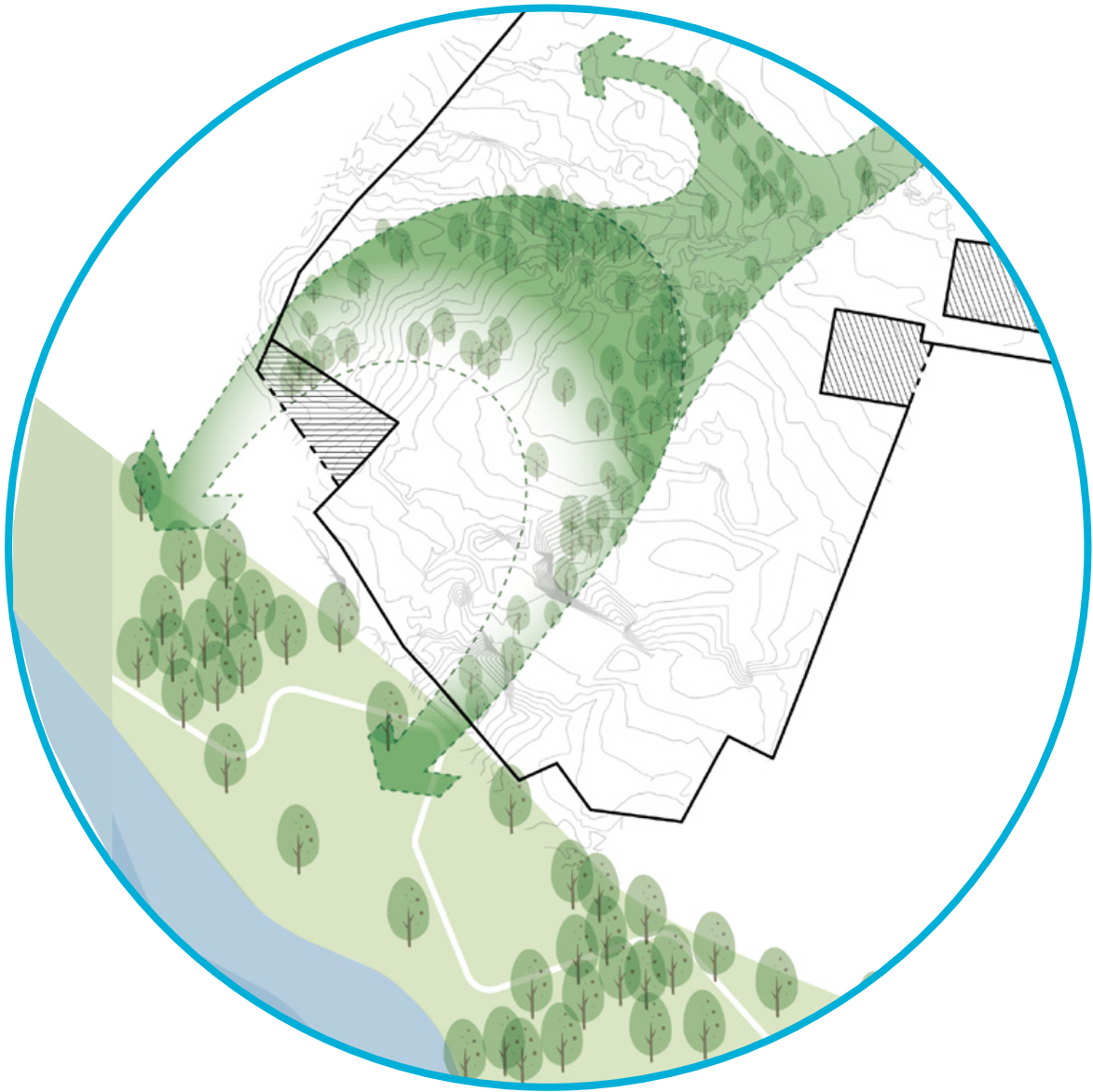
Encouraging **non motorised modes of transit** throughout the contiguous greens and other open spaces

The Big Idea : Embrace

The key planning idea based on which the master plan has been developed is **‘Embrace’**.

“Embrace” refers to the overall concept of integrating the open spaces within the site with the river front as well as linking the built form with the landscape.

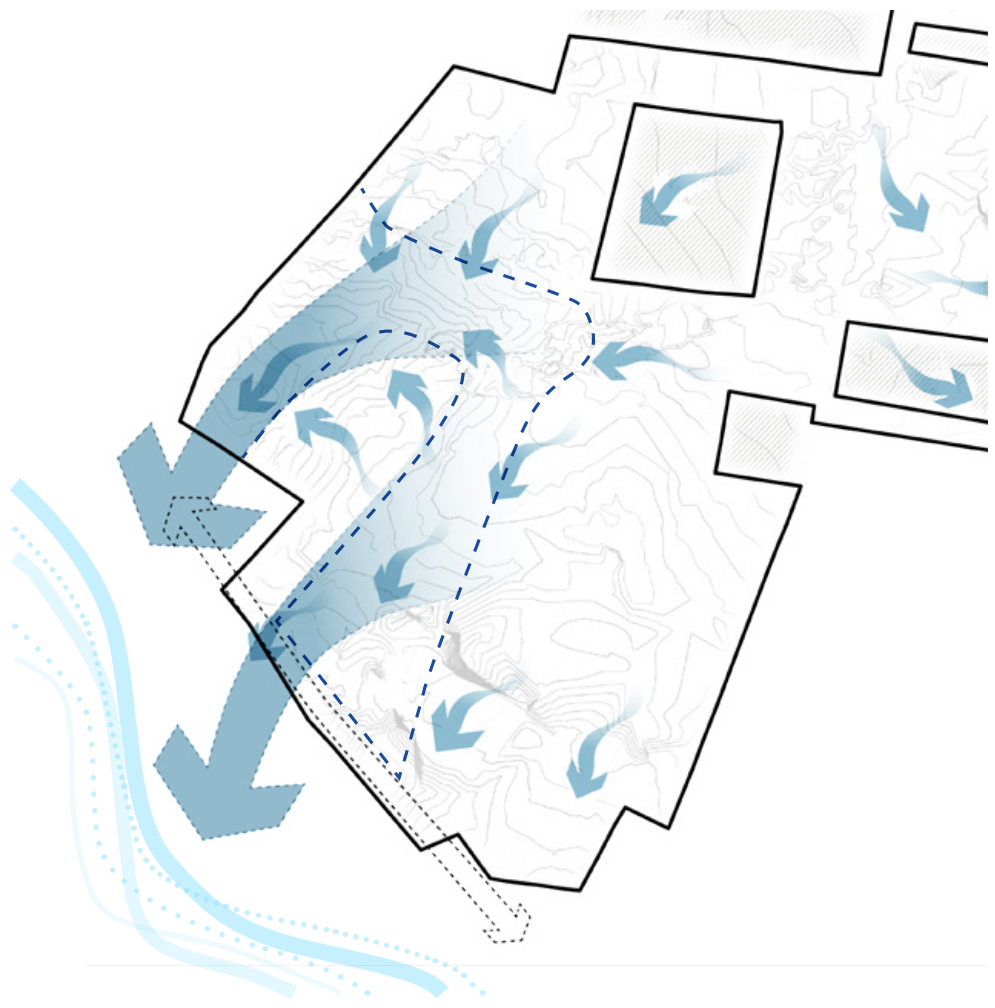
“Embrace” shall become the starting point for the development of the landscape concept, defining distinct character zones within the landscape and programming.



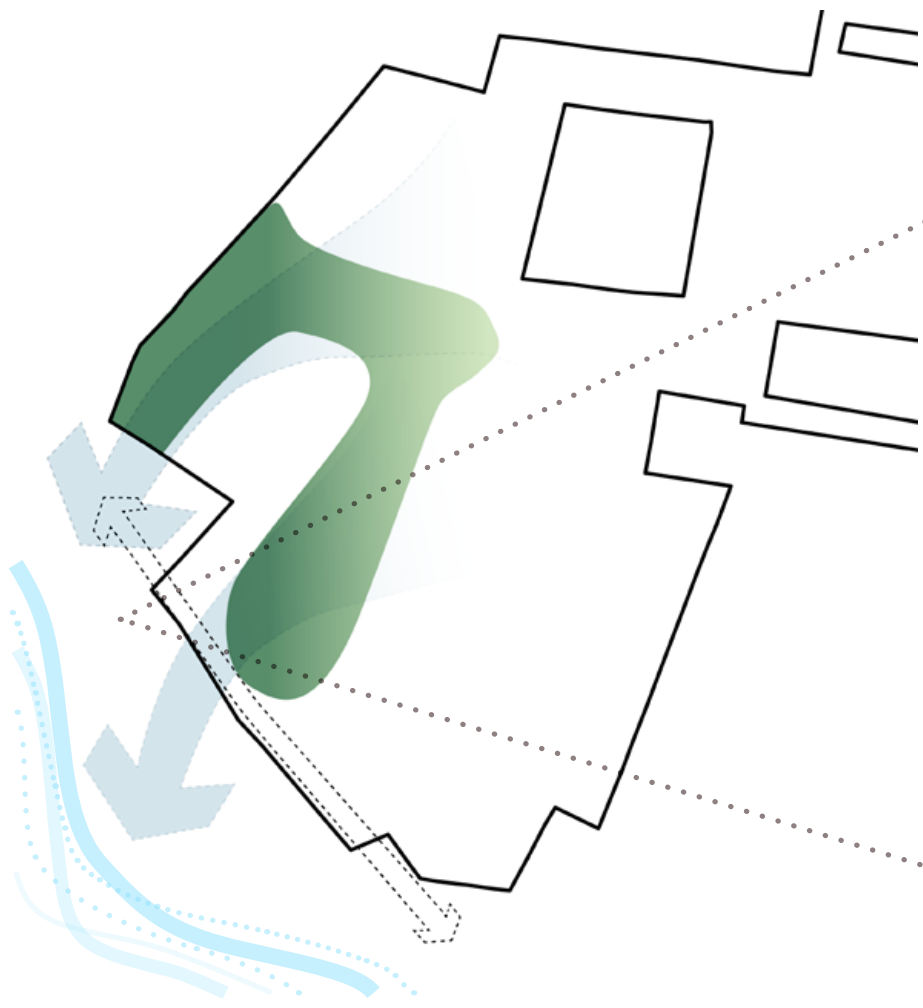
The master plan has been organised around a boomerang shaped linear park, envisioned to be an **Eco-loop connecting the sensitive ecosystem of the Mula-Mutha river to the existing ravine system on site**. Kharadi River Greens plans to redefine master planning in the Indian context with its sensitive ‘people- with-nature’ centric approach.



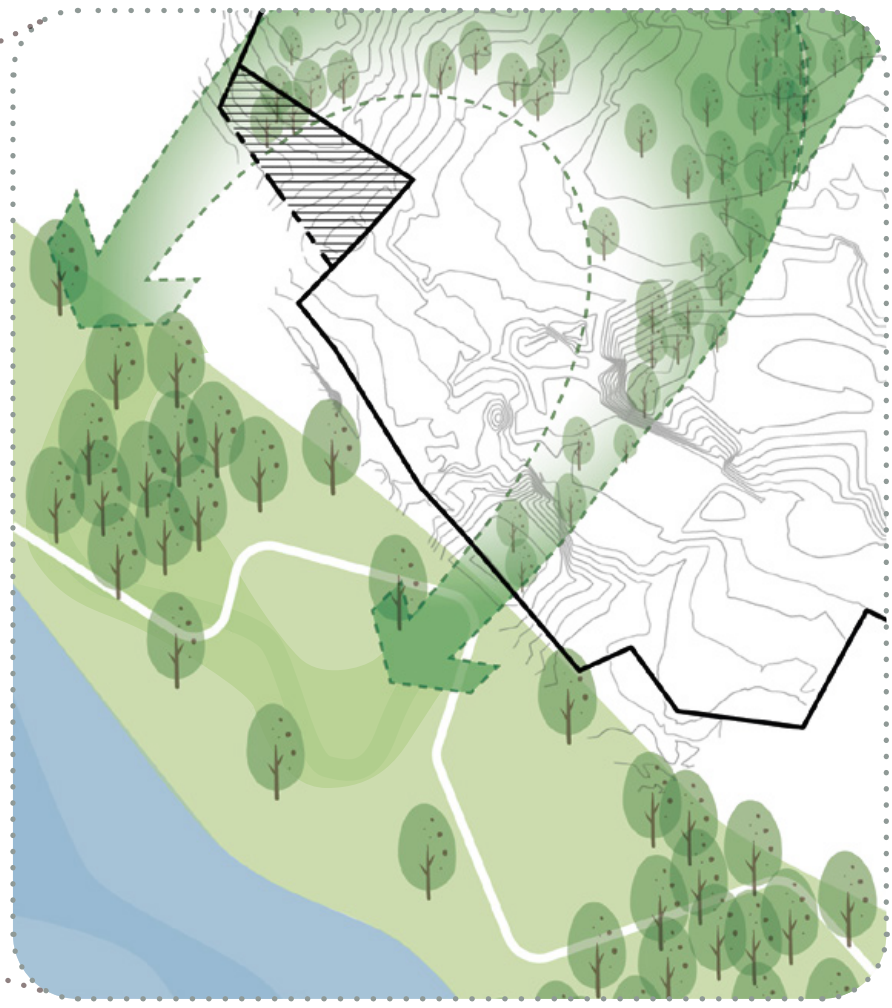
Arriving at the Master Plan



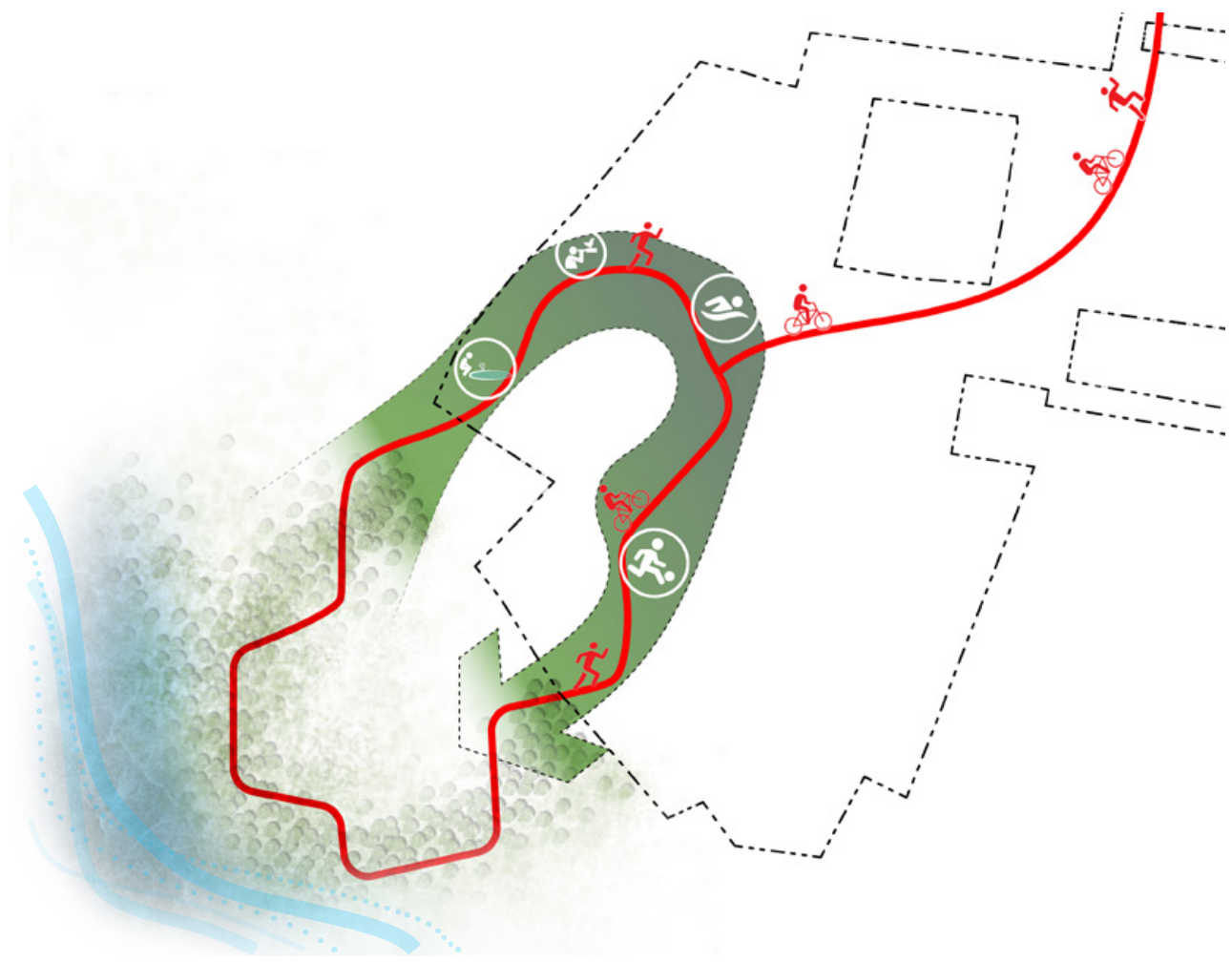
Mapping Existing Hydrology



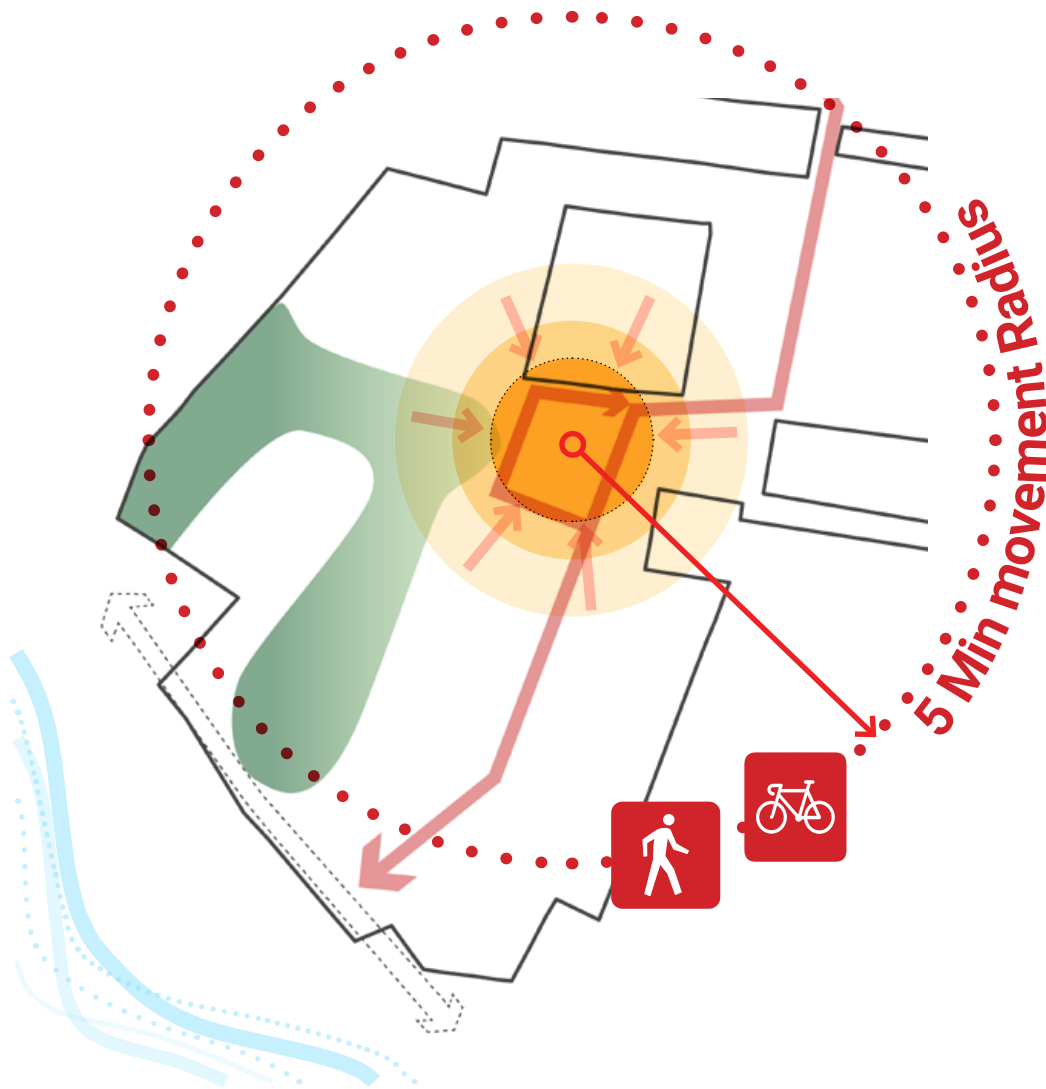
Hydrology Informs the Landscape Armature



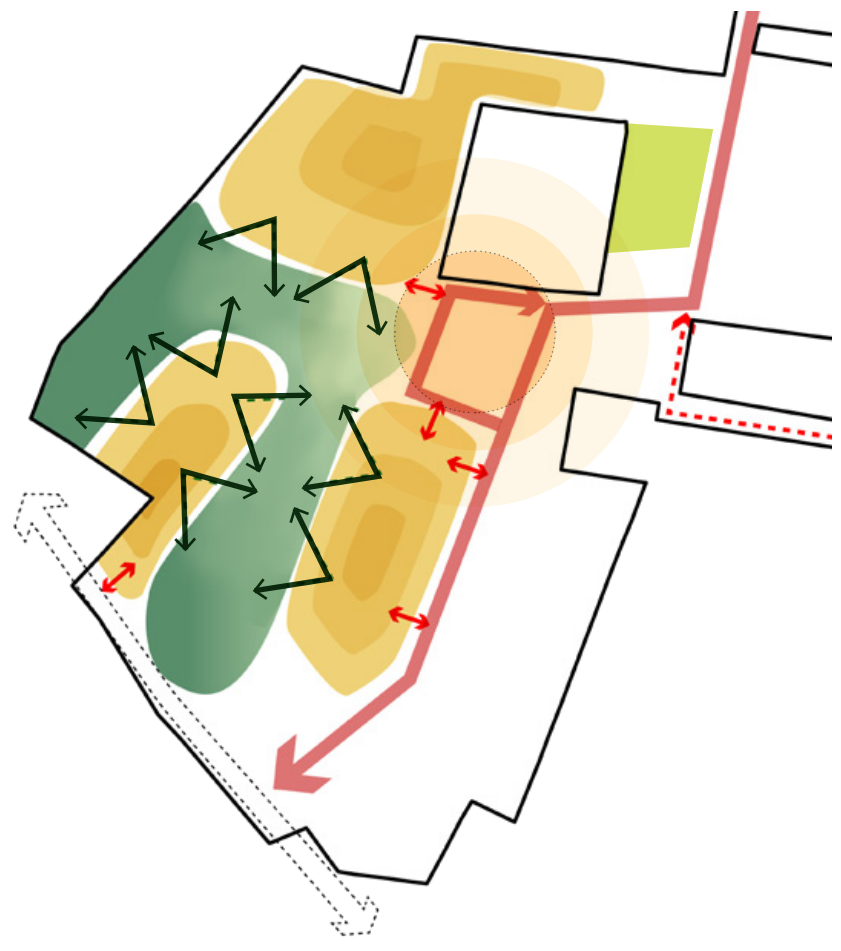
Bio-Loop : Embracing the River Ecosystem



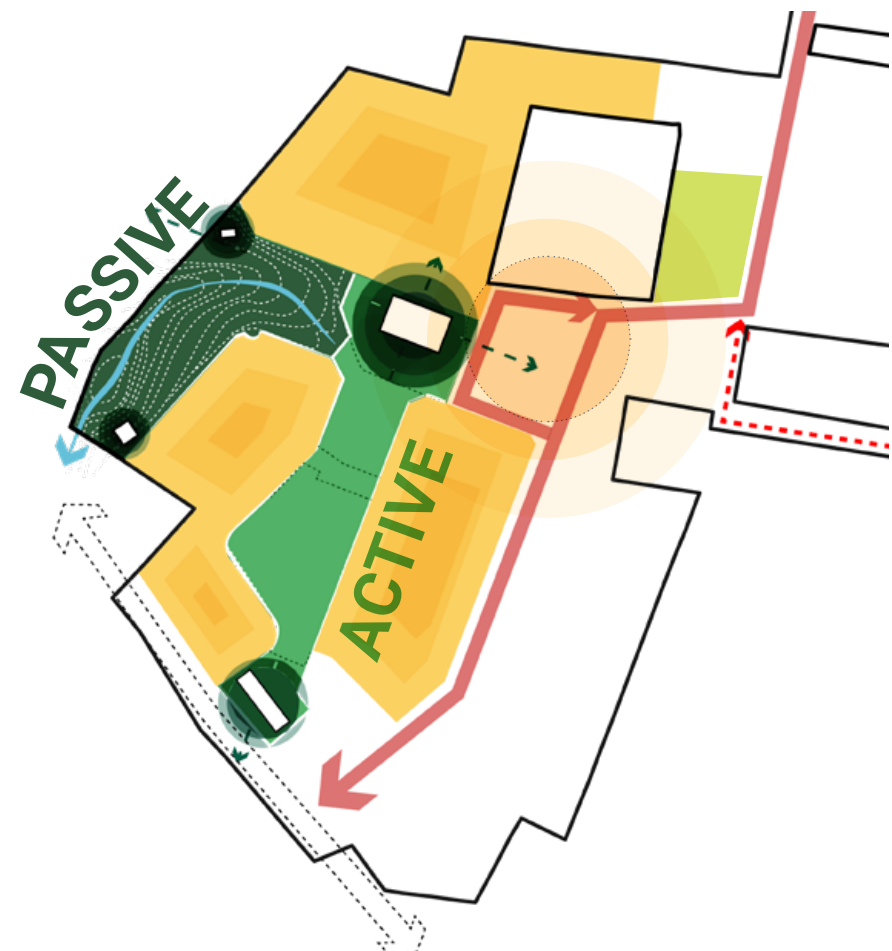
The Green Embrace : Contiguous Open space opening towards the river ; Easy walking and cycling connectivity to the river



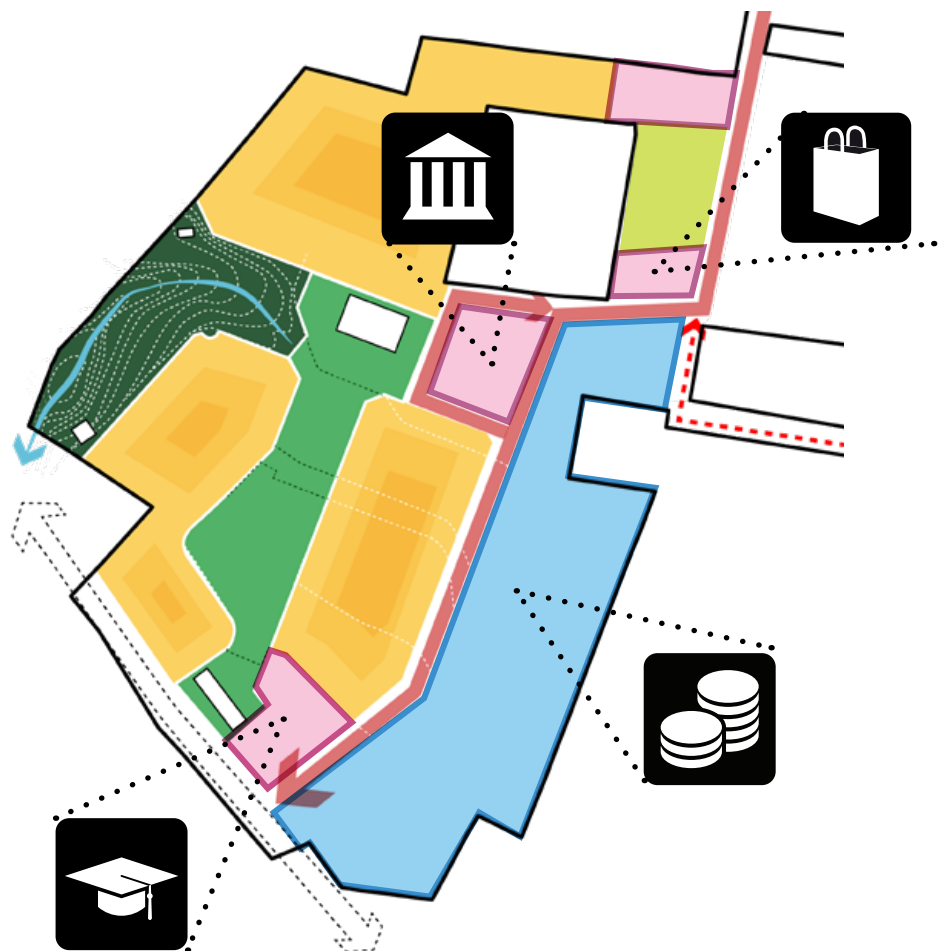
A Vibrant Civic Heart for the Community



Residential Adjacent to Landscape

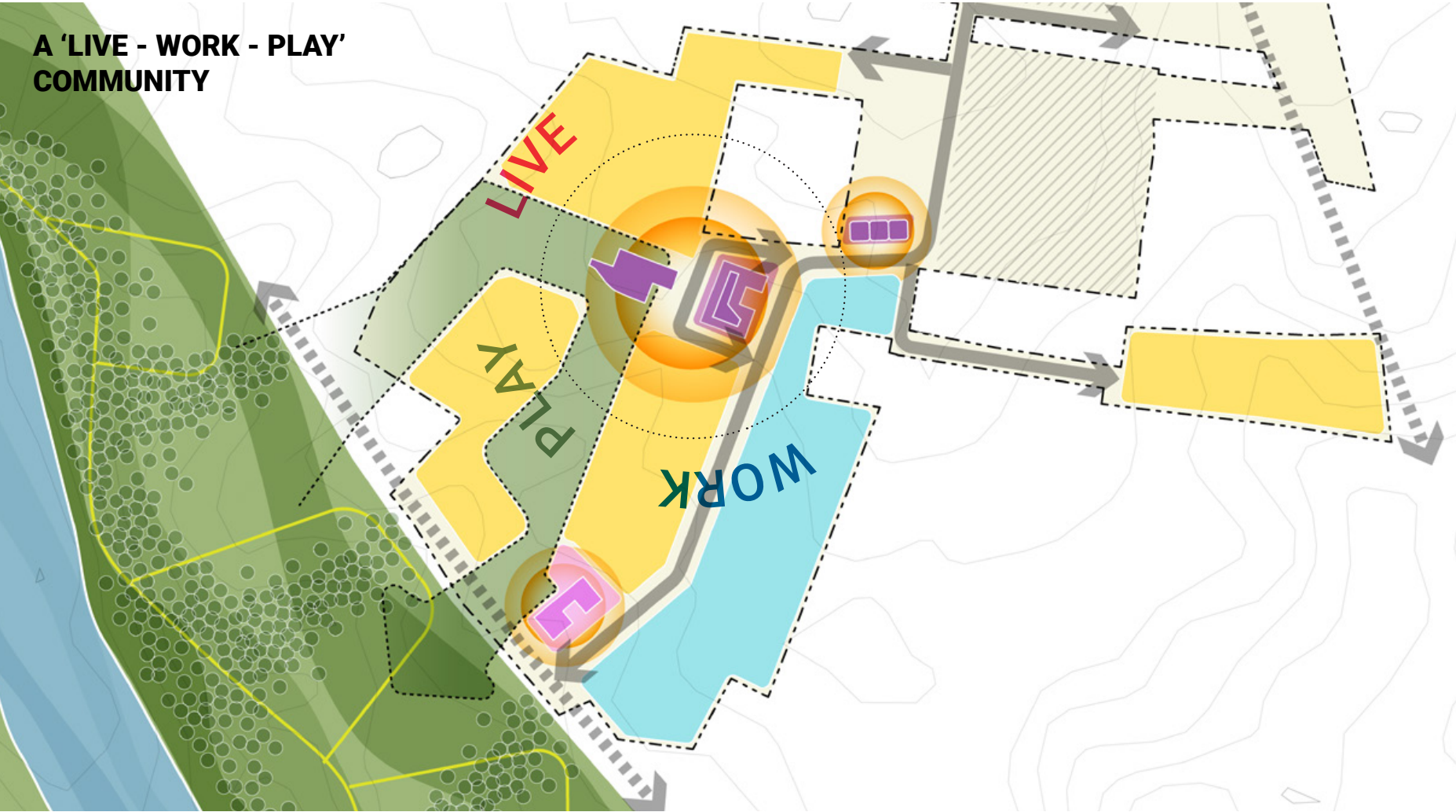


Distinct Landscape Character Zones



Commercial and Amenity Zones

Rivergreens Master Plan



River greens is a unique integrated township community, which is a paradigm shift in site planning and urban form making in India, all of which is centred around a resilient landscape heart.

The site at Kharadi enjoys proximity to the river Mula-Mutha in Pune and its rich ecosystem. The master planning of the new township has been developed as a community that can Live, Work, Play and Learn through landscape and placemaking.

1542
TREES PLANTED WITHIN THE MASTER PLAN

68%
SOFTSCAPE COVER WITHIN
OVERALL MASTER PLAN

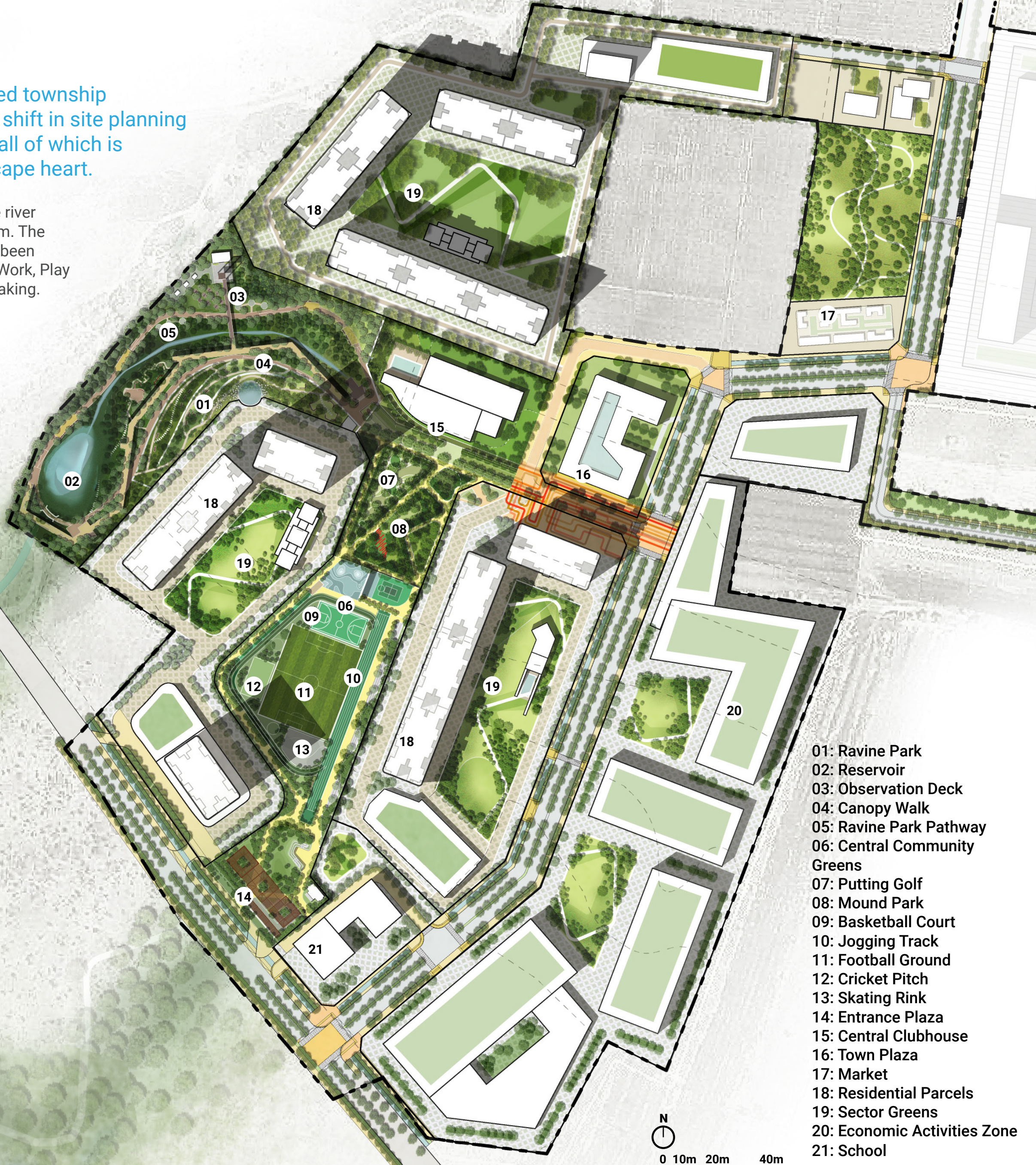


1 RAVINE PARK
Contiguous Open space opening towards the river ; Easy walking and cycling connectivity to the river

2 CENTRAL COMMUNITY GREENS
Central linear park surrounded by residences and interspersed with community activities such as sports and recreation

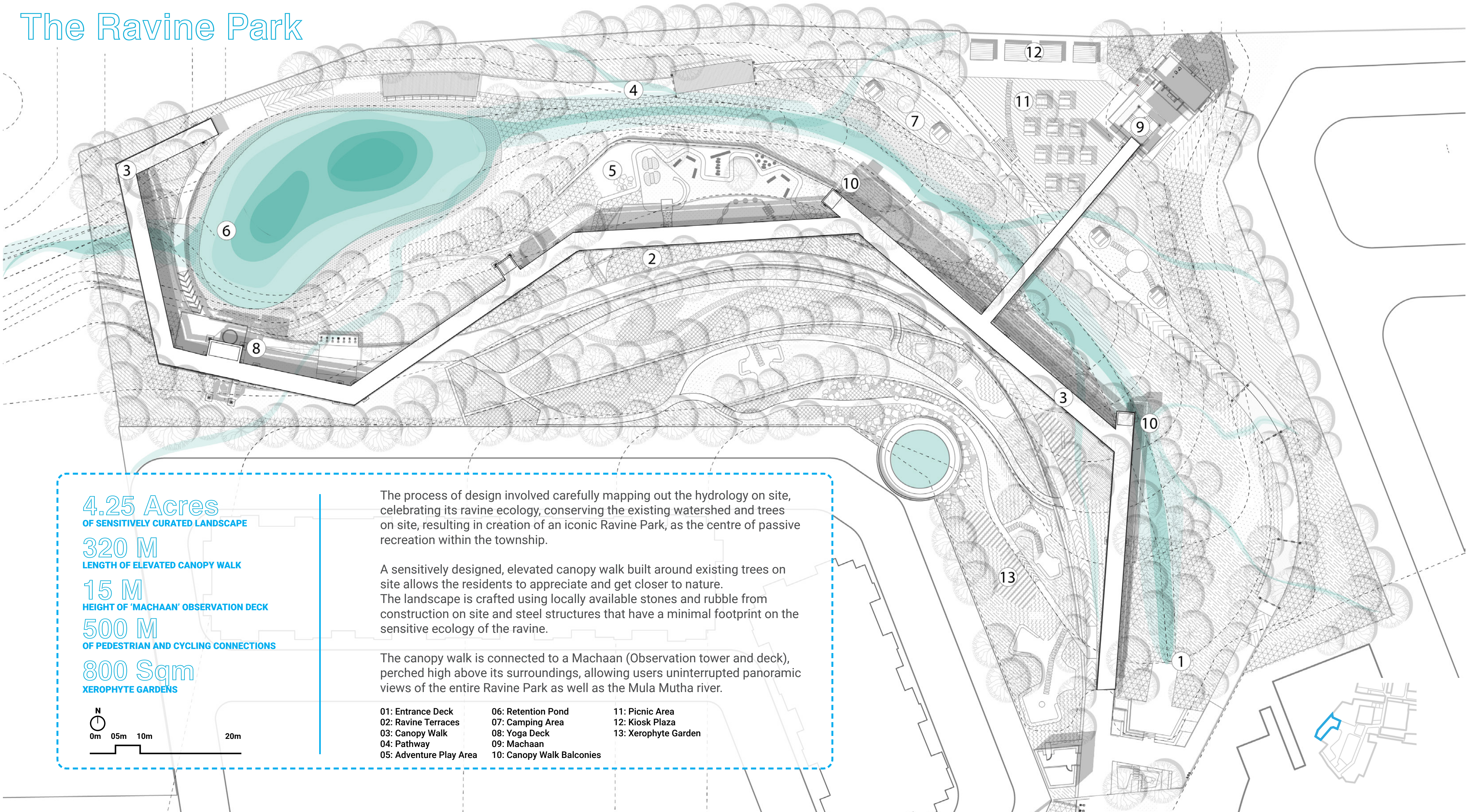
3 CENTRAL PLAZA
Lies in front of the community market and the town hall, Congregation, informal retail and performance arts related activities

RIVER MULA MUTHA



- 01: Ravine Park
- 02: Reservoir
- 03: Observation Deck
- 04: Canopy Walk
- 05: Ravine Park Pathway
- 06: Central Community Greens
- 07: Putting Golf
- 08: Mound Park
- 09: Basketball Court
- 10: Jogging Track
- 11: Football Ground
- 12: Cricket Pitch
- 13: Skating Rink
- 14: Entrance Plaza
- 15: Central Clubhouse
- 16: Town Plaza
- 17: Market
- 18: Residential Parcels
- 19: Sector Greens
- 20: Economic Activities Zone
- 21: School

The Ravine Park



4.25 Acres

OF SENSITIVELY CURATED LANDSCAPE

320 M

LENGTH OF ELEVATED CANOPY WALK

15 M

HEIGHT OF 'MACHAAN' OBSERVATION DECK

500 M

OF PEDESTRIAN AND CYCLING CONNECTIONS

800 Sqm

XEROPHYTE GARDENS

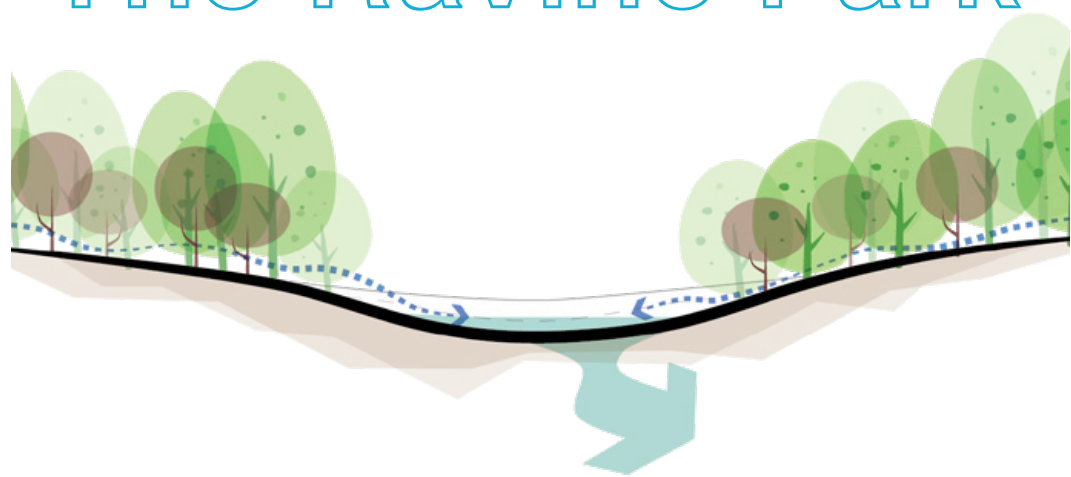
The process of design involved carefully mapping out the hydrology on site, celebrating its ravine ecology, conserving the existing watershed and trees on site, resulting in creation of an iconic Ravine Park, as the centre of passive recreation within the township.

A sensitively designed, elevated canopy walk built around existing trees on site allows the residents to appreciate and get closer to nature. The landscape is crafted using locally available stones and rubble from construction on site and steel structures that have a minimal footprint on the sensitive ecology of the ravine.

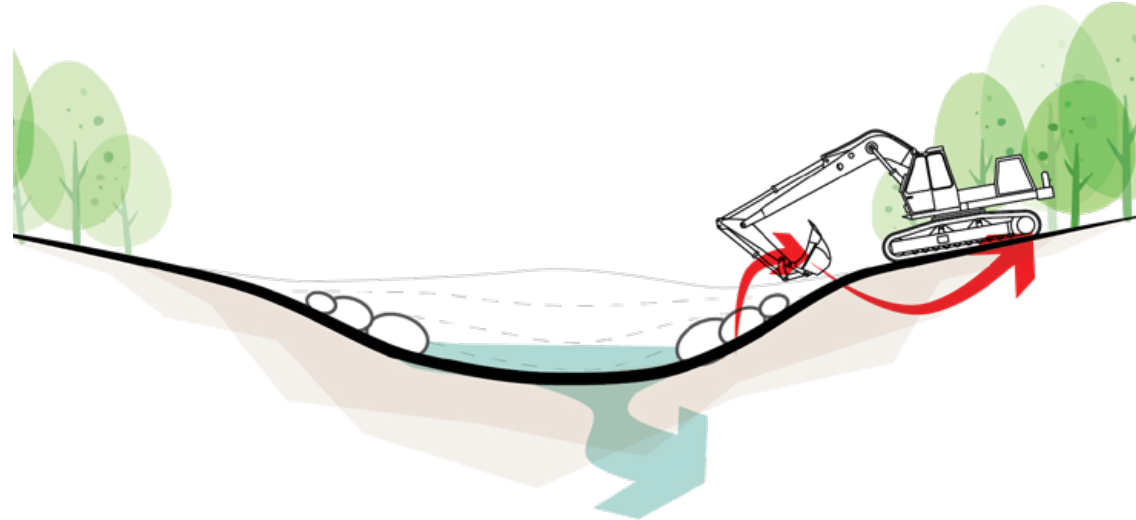
The canopy walk is connected to a Machaan (Observation tower and deck), perched high above its surroundings, allowing users uninterrupted panoramic views of the entire Ravine Park as well as the Mula Mutha river.

- | | | |
|-------------------------|---------------------------|----------------------|
| 01: Entrance Deck | 06: Retention Pond | 11: Picnic Area |
| 02: Ravine Terraces | 07: Camping Area | 12: Kiosk Plaza |
| 03: Canopy Walk | 08: Yoga Deck | 13: Xerophyte Garden |
| 04: Pathway | 09: Machaan | |
| 05: Adventure Play Area | 10: Canopy Walk Balconies | |

The Ravine Park



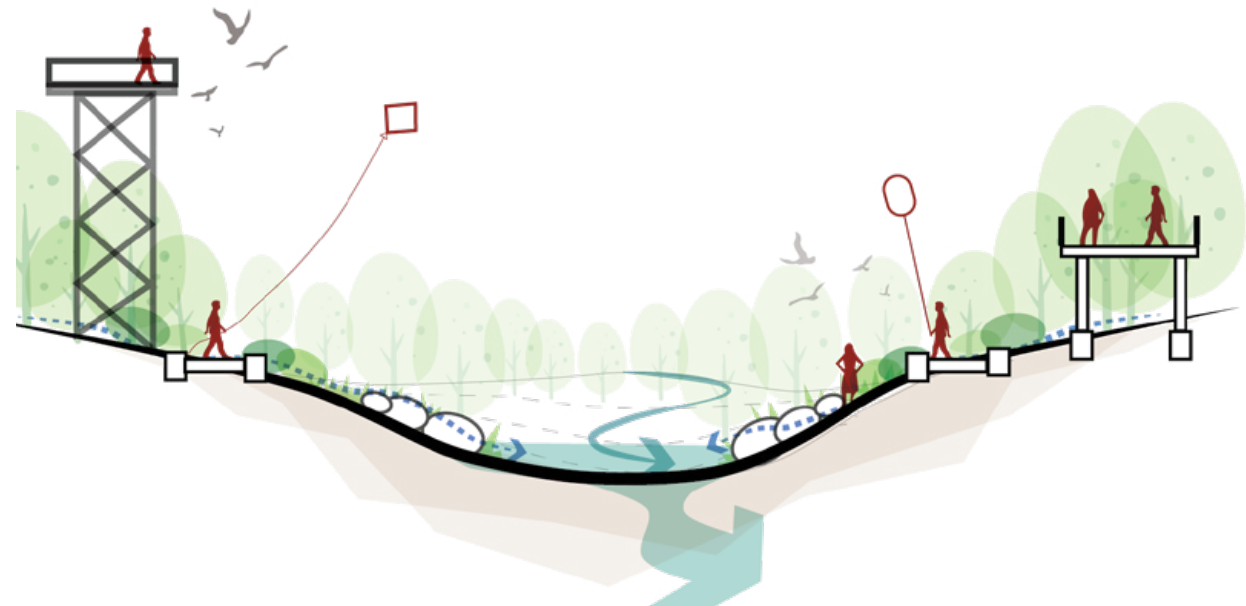
Existing Topography and Ravine like site conditions



Accentuated Ravine Topography and Enhanced Hydrology



Planting and Site Grading Informed by Biodiversity Analysis



Creating Avenues of Passive Recreation and Nature Appreciation



Stormwater Management Strategy

The runoff from the site from the western edge of the site is directed towards the drainage channel in the Ravine Park and from the eastern edge of the site through underground drain towards the River Buffer Park

Pond 1 Collects Storm Water , Pond 2 collects Treated Water. Both Ponds are separated by a wall

The township is designed to recycle 100 % grey water on site and reuse it within the landscape. Water management is further enhanced using bio swales that aim to restore and enhance an already thriving ravine system on site.



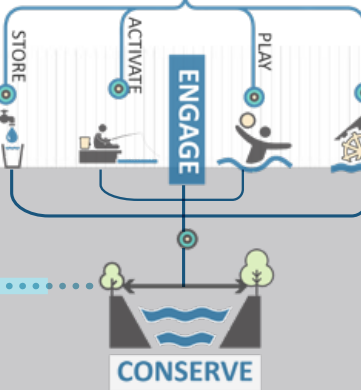
Rain Water Harvesting



Decentralized Sewage Treatment Plant



CLEANSE



CONSERVE

- 01 Entrance Plaza and Deck
- 02 Ravine Terraces
- 03 Canopy Walk
- 04 Pathways
- 05 Riparian Edges
- 06 Ravine Swale
- 07 Connection to Machaan
- 08 Camping Area
- 09 Toilet Block
- 10 Machaan Observation Deck



Adjacencies

The design of edge conditions within the Master Plan and the Ravine park is planned in accordance with the placement of the plots with relation to the open spaces.

Towards larger community open spaces the plots have softer / non built edges. The non-built notional edges shall differentiate different hierarchies and character zones while not compromising on the contiguous nature of the open space

Camping and Picnic



Towards Machaan



Canopy Walk and Shade Canopies

Walking



Pet Walking



Cycling



Meditation



Bird Watching



THE RAVINE PARK

RESIDENTIAL SECTOR

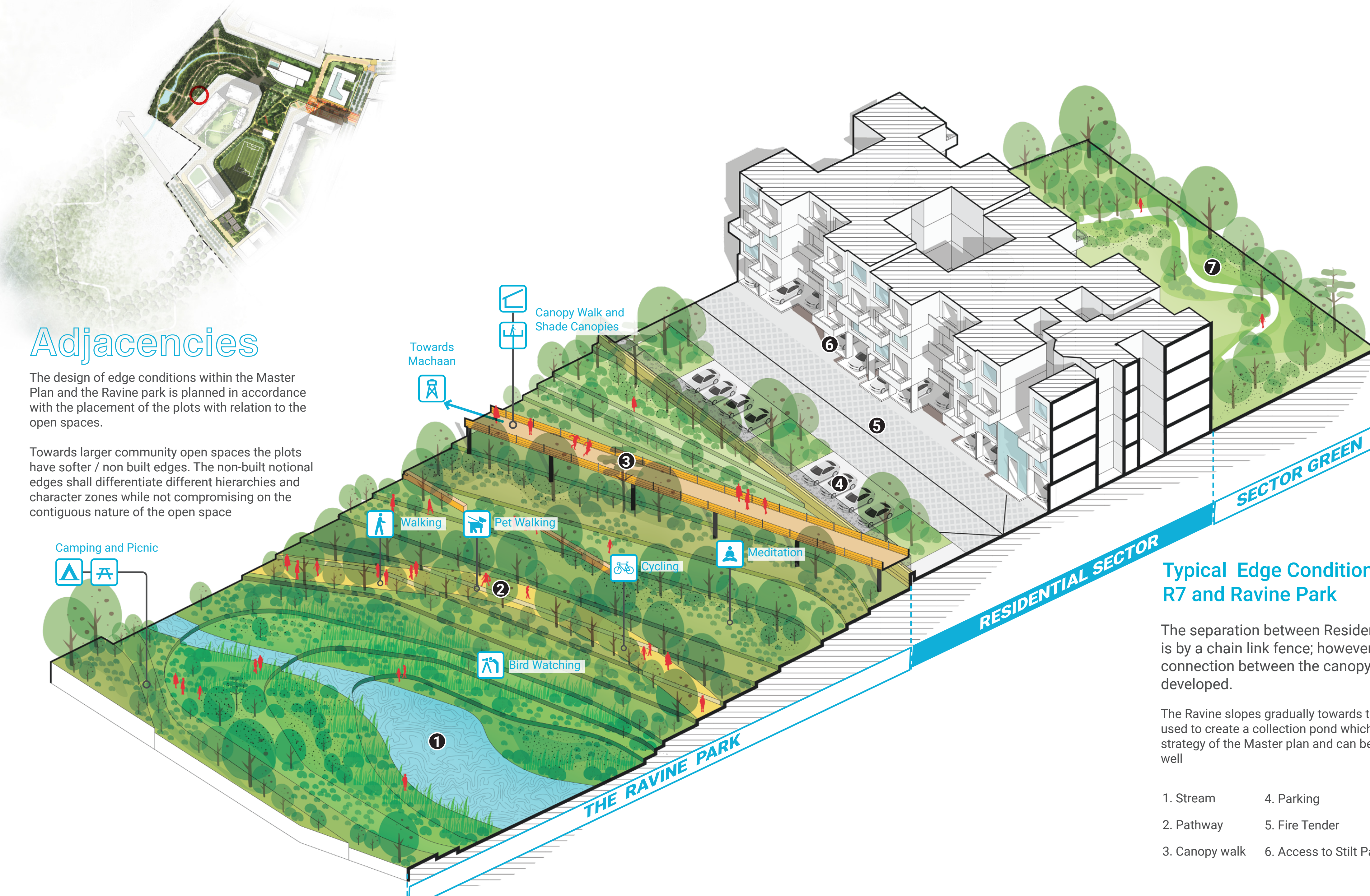
SECTOR GREEN

Typical Edge Condition : Residential Parcel R7 and Ravine Park

The separation between Residential Plot R7 and the Ravine is by a chain link fence; however in the future a controlled connection between the canopy walk and the plot can be developed.

The Ravine slopes gradually towards the Mula Mutha river. This slope is used to create a collection pond which aids in the water management strategy of the Master plan and can be used for recreational purposes as well

- | | | |
|----------------|----------------------------|-------------------|
| 1. Stream | 4. Parking | 7. Sectoral Green |
| 2. Pathway | 5. Fire Tender | |
| 3. Canopy walk | 6. Access to Stilt Parking | |



Rich Bio-Diversity

The planting strategy for the Ravine Park was carefully curated based on mapping existing biodiversity on site and further enhancing it.

19

SPECIES OF TREES

20

SPECIES OF SHRUBS

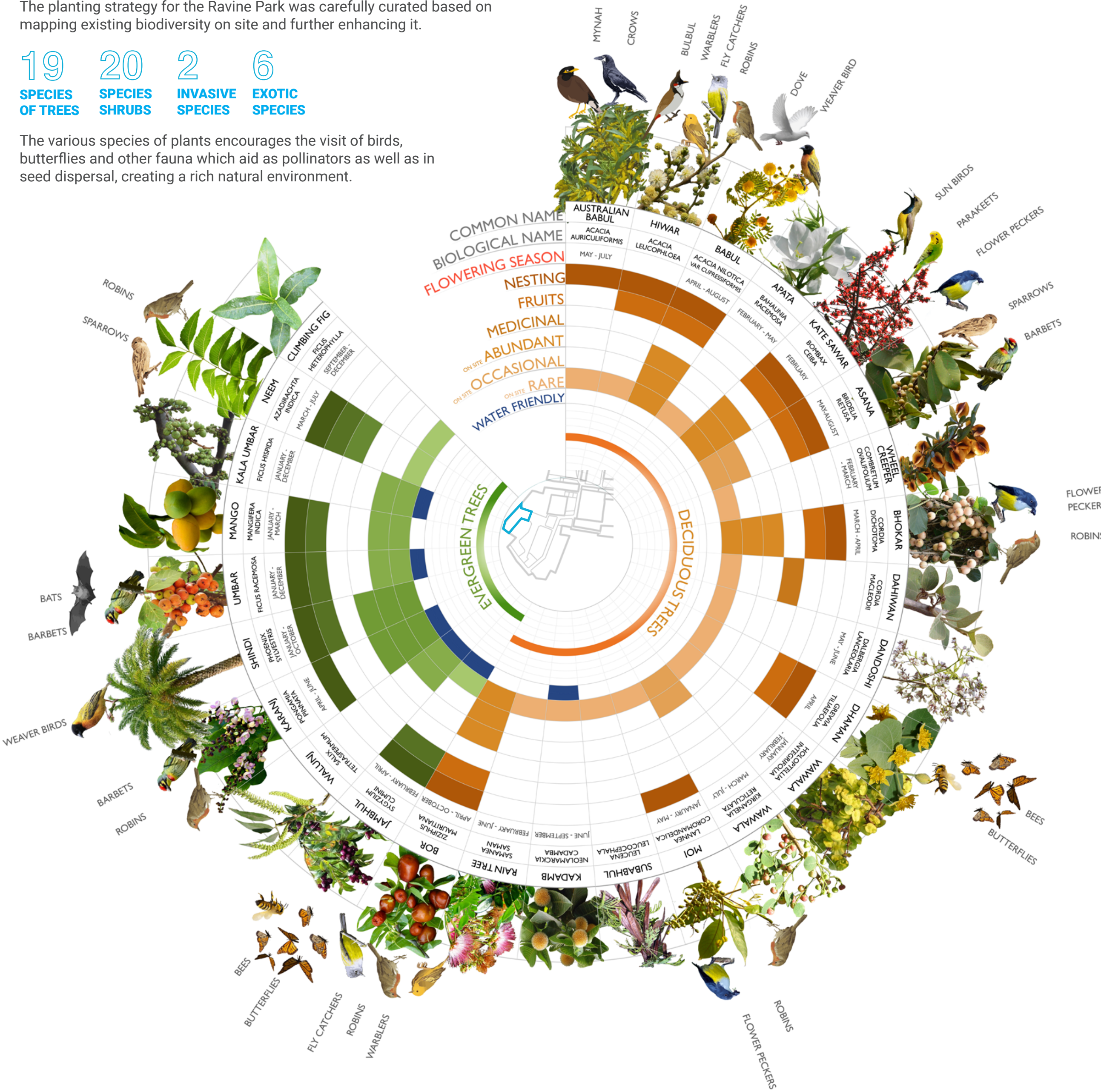
2

INVASIVE SPECIES

6

EXOTIC SPECIES

The various species of plants encourages the visit of birds, butterflies and other fauna which aid as pollinators as well as in seed dispersal, creating a rich natural environment.





1000 SQM
of dedicated Adventure
Play Park



Strategically located
shade canopies on the
elevated Canopy Walk



320 SQM
of Elevated Canopy Walk
taking people closer to nature



20 Species
of flora and many fauna for bird
watching and nature appreciation



500 M
of non motorised
connections for walking,
cycling and pet walking

Multiple Movement

Light Footed Movement

A sensitively designed, elevated canopy walk built around existing trees on site allows the residents to move around the Ravine Park while getting close to nature .Non intrusive construction techniques, with minimum possible obstruction to existing ecology was applied for all construction within the Ravine Park.

Apart from this the pathway and the canopy walk together form an integrated circulation loop within landscape and helps give impetus to non-motorised and sustainable avenues of moving around within the Ravine Park as well as the township.

The Ravine Habitat

Young and Old Trees form a robust habitat support system

The Ravine Park is brought to life using a combination of conserving existing trees and planting a carefully curated planting palette to complement the existing species of flora on site.

The flora is also curated to attract pollinators as well as other fauna, to enhance biodiversity all across the Ravine Park

To remain true to the ecological approach of respecting existing vegetation and hydrology on site, several revisions were made to the design and alignments of various built elements were modified, based on constant updates that were received from the survey and site execution teams.



0.5 Acres
Ravine Terrace gardens and sculpture court



320 SQM
of Elevated Canopy Walk taking people closer to nature



15 M
elevated observation deck, called the 'Machaan' tower



Planted Trees



Planted Trees



Existing Trees



Existing Trees



Strategically located shade canopies on the elevated Canopy Walk



Existing Trees



Planted Trees



0.5 Acres
Ravine Terrace gardens and sculpture court

Strategically located shade canopies on the elevated Canopy Walk



200 SQM
of 'Yoga Deck', a dedicated Meditation zone



1000 SQM
of dedicated Adventure Play Park



230 M
Ravine swale system allowing flow of water



Camping Zone for pitching tent



420 SQM
of Community picnic zone

View from the Machaan

The Sunset Park

The canopy walk is connected to a Machaan (Observation tower and deck), perched 15m above its surroundings, allowing users uninterrupted panoramic views of the entire Ravine Park as well as the Mula Mutha river.

This elevation makes it the perfect spot for observing birds as well as witnessing a beautiful sunset over the city of Pune.

The Ravine Park has dedicated zones for meditation, camping, picnics, exhibitions as well as natural playscapes, creating varied user experiences, all of which are seamlessly integrated within landscape.

The Canopy Walk

and Shade Canopies

The Canopy Walk is designed such that it's steel structure has a minimal footprint on the sensitive ecology of the ravine. Perched 5 M above its surroundings, the canopy walk takes users within the Ravine Park, close to the height of tree canopies.

The strategically located shade canopies, form small balcony like extensions to the Canopy walk for closer views of its surroundings. These locations have integrated seating, which also allows users to have quiet contemplative moments within the landscape of the Ravine Park.



Canopy Walk and the Residential Community

Harmonising Nature and Abode

The Canopy walk also forms an important linkage between the residential community within the master plan and the Ravine Park. The Ravine Park with its natural and bio-sensitive planning forms the centre of passive recreation within Rivergreens.

The Ravine Park creates multiple moments and avenues of interaction between nature and the residents of the Rivergreens community.

This curated urban forest, based on the principles of resilient landscape, also promotes a healthy and sustainable lifestyle for people of all age groups.



The Yoga Deck

Meditation Zone

The Yoga Deck can be accessed by using both the canopy walk as well as the pathways, and is located towards the end of the Ravine Park. Nestled within a foliage of mango trees and next to the retention ponds, this deck, makes an apt setting for peaceful meditation and Yoga.



Strategically located portal structures with integrated lighting, to create ambient lighting for zones of significance within the Ravine Park



200 SQM of 'Yoga Deck', a dedicated Meditation zone



Bridge connection between the canopy walk and the Machaan Observation tower



15 M
Elevated observation deck, called the 'Machaan' tower



Camping Zone for pitching tent

The Machaan Deck

Observation Deck

The Observation tower and deck form the 'Machaan'. Machaan is a term used primarily in South East Asia for a raised platform, that was traditionally used for animal spotting and hunting.

In the Ravine Park, the Machaan has been reinterpreted to take users high above their surroundings, allowing users uninterrupted panoramic views of the entire Ravine Park as well as the Mula Mutha river.

Low Key Lighting

Lighting the Ravine Park

The lighting design for the Ravine park has a distinct approach from the rest of the township. The philosophy was to maintain a lower lux level across the park reducing the impact on the surrounding habitat. The trees were protected by almost eliminating up lighting fixtures preserving darkness at night for the nesting trees.

The Ravine park has minimal concrete footing for light poles. Existing structures and features like the canopy walk and Machaan are used to integrate light fixtures instead of providing additional light poles.

All the light fixtures are designed to be down firing and a compact dispersion of light. Special light portals were custom designed to eliminate light pollution with targeted lighting along the pathways.





500 M

of non motorised connections for walking, cycling and pet walking

320 SQM
of Elevated Canopy Walk
taking people closer to nature



300 M

of Gabion Walls from locally sourced stones, also used as seating by users

Reused Stone from site for low wall seating

Creating multi purpose ' Gabion Wall '

The landscape and its various elements such as the gabion walls, security cabin, washrooms and even the entrance signage are crafted using locally available stones and rubble from construction on site, which enhances the suitable construction approach used in this project.

Elements like the Gabion Walls are also used for seating apart from soil retention, and add to the natural aesthetic of the Ravine Park.



800 SQM
of Xerophyte Gardens at the Ravine



Amphitheatres and Congregation Points
within the Ravine Park



The Machaan at night
within the Ravine Park