

INTEGRATED MASTERPLAN DEVELOPMENT FOR MADH ISLAND, MUMBAI :
FORMALIZING THE INFORMAL

-By Malhar A. Ambekar

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Manchester School of Architecture
Manchester Metropolitan University
University of Manchester

Supervisor:
Edward Taylor
Eamonn Canniffe
Sandeep Menon
Purva Dewoolkar

Author:
Malhar A. Ambekar

A thesis submitted in fulfillment of the degree of Masters in Architecture & Urbansim by Malhar Ambekar
Manchester School of Architecture, UK

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List of Abbreviations

MCGM- Municipal Corporation of Greater Mumbai
SDZ- Special Development Zone
FSI- Floor Space Index
CRZ- Coastal Regulatory Zone
DCR- Development Control Regulations
DP- Development Plan
UDRI- Urban Design Research Institute
SRA- Slum Rehabilitation Authority
SA- Social Amenities

Acknowledgements

I am profoundly grateful to my principal lecturers & mentors Eamonn Canniffe, Edward Taylor, Sandeep Menon, Purva Dewoolkar and Debapriya Chakrabarti, for their unwavering guidance, patience, and expertise. Their mentorship and constructive feedback have been instrumental in shaping the direction of my research and the quality of this dissertation. I am also grateful to the staff at B15 at the University of Manchester Scott Miller, Lara Gerrard, Sarah Carroll, Teagan Dorsch and John Moore for their incredible help and support in the making and experimenting with the physical model in the design process.

I acknowledge Manchester Metropolitan University for providing the resources, facilities, and academic environment necessary for conducting this research. The available database at the library, and the assistance and expertise of the university librarians and research support staff in accessing the resources were invaluable.

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I am eternally grateful to my mentor, colleagues & friends at Munro Acoustics; Director Kapil Thirwani, Vignyan Beera, Utkarsh Naidu, Cyril Thomas, Johan Pais, Rachel Jacob, Vaishnavi Jadhav & Aman Prajapati who have offered their continuous encouragement and have been instrumental in instilling great confidence and professionalism in me to pursue the course and along with sharing their wisdom, experiences and providing an unwavering support to make this endeavour more manageable.

I am also thankful to Production Designer and my design mentor Parul Sondh for taking the time and share her experiences and insights on this topic and the concerned areas of interest which has substantially supported the research and approaches of this dissertation.

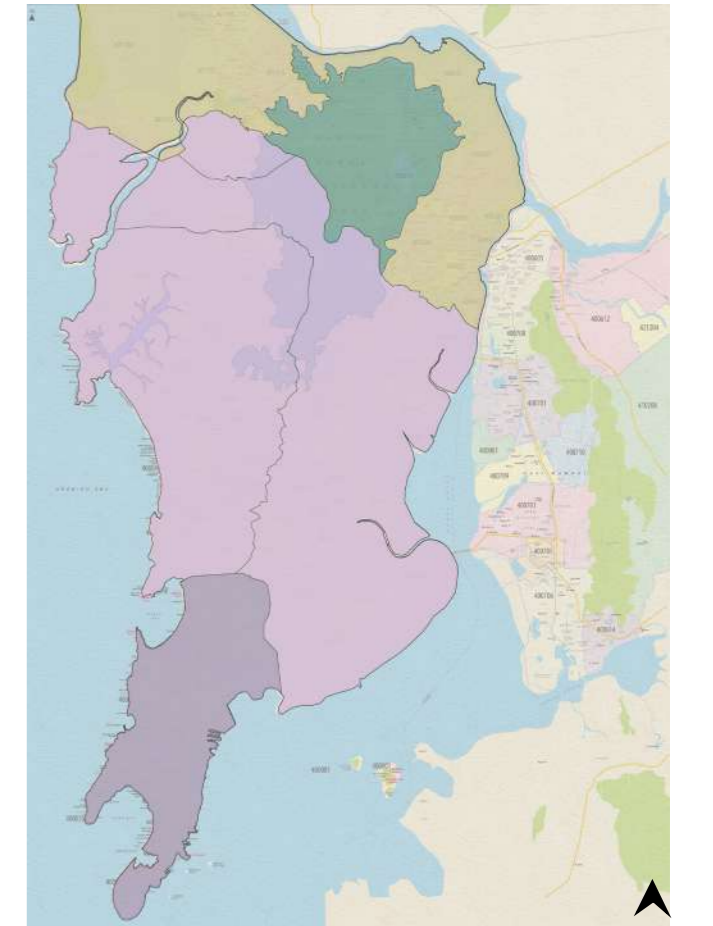
I also wish to pay a tribute to my mentor and one of most celebrated film designers and makers in India Late Mr Nitin Desai.



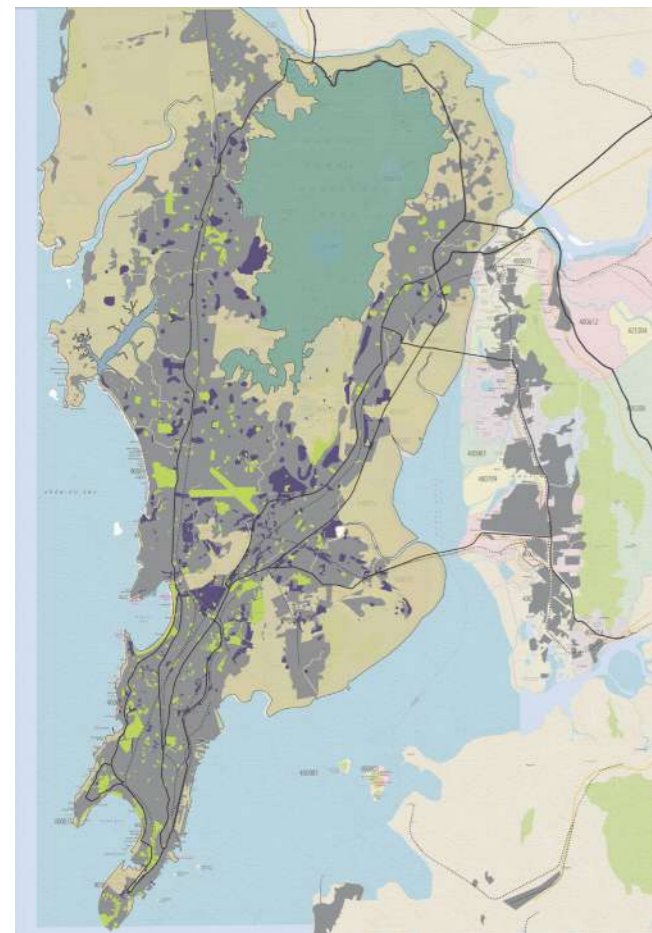
The economic capital of India, Mumbai has always been on the forefront of development and front runner of a urbanization. One of the important cities in the global south and Asian sub continent, its role in shaping India's worldwide presence has been undeniably significant. Particularly post the colonial period in India, Mumbai has advanced itself in a rapid progression and has absorbed almost every new modes of urban regeneration and development thereby making itself an important economic player overall.

However, the constant deliberate attempts of rapid urbanization that have eventualized as a result of this strive for a global city, the repercussions have been observed in the overcrowding and consequent informal settlements and less prioritization towards the existing communities and economies.

MUMBAI

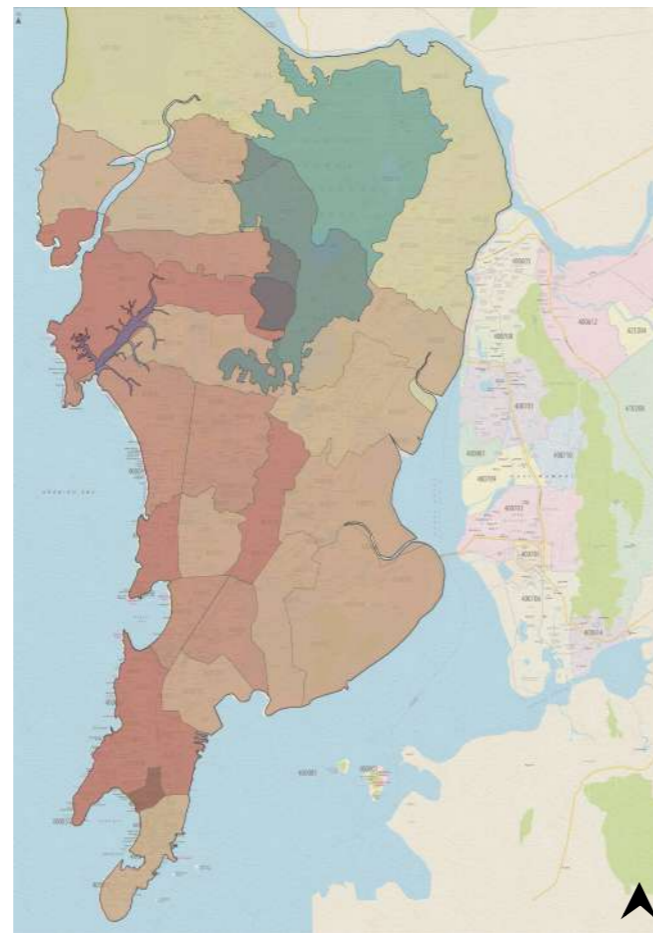


Maps showing the geographical urban subdivisions of Mumbai.



Settlements

- Urban Development
- Informal Settlement
- Open Spaces

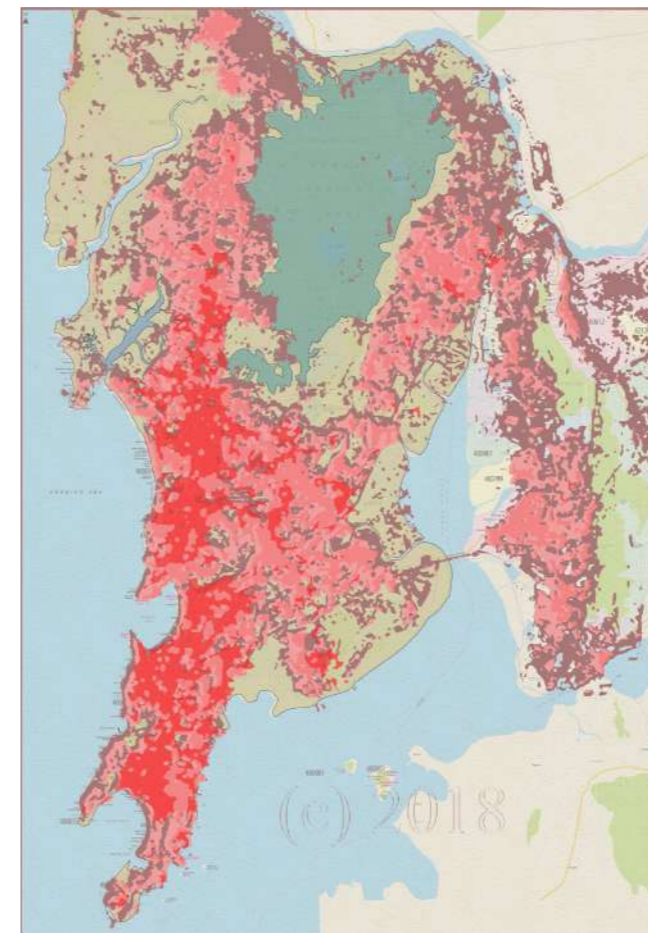


Population Density

- 7520 - 14800
- 14900 - 25800
- 25900 - 41500
- 41600 - 59900
- 60000 - 92300

As an effect of the urban development and the consequent transport network, the urban sprawl along with the population density identifies itself as a supporting response to it. However, a close look informs the lack of urban development in the north western part of the city,

Source: Maps from Nikhil Jain, Abhijeet Ekbote

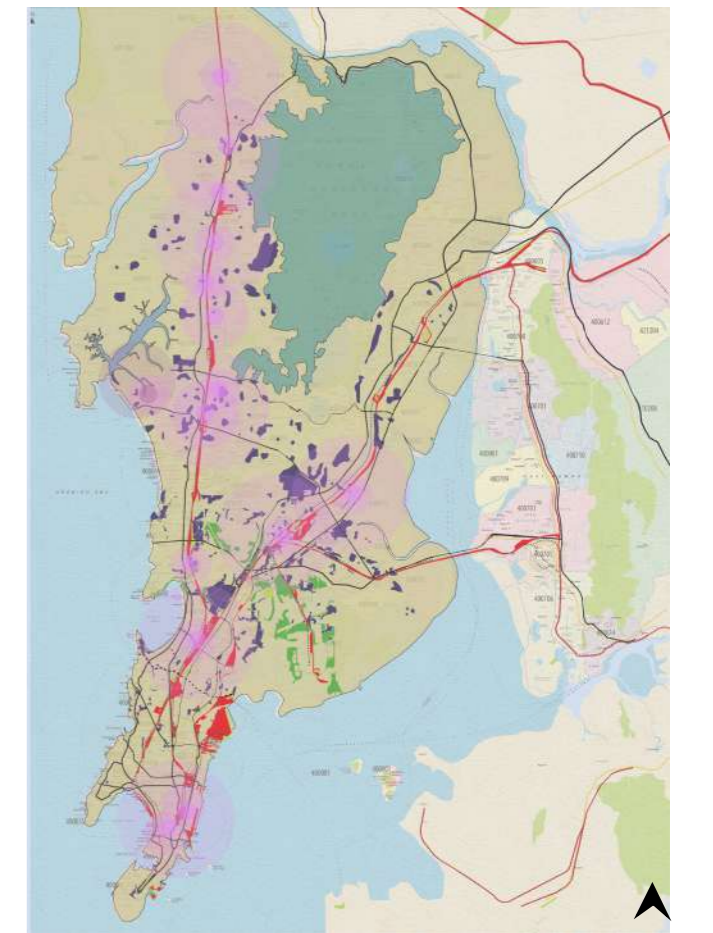


Urban Development

- 1970s
- 1990s
- 2010
- 2018

The process of urban development when mapped with a timeline suggests its spread from the island city in the south of Mumbai and finding its way with time towards the Western & Eastern suburbs. Consequently the transport network supplements to this spread of development.

Source: Maps from Nikhil Jain, Abhijeet Ekbote



Railway

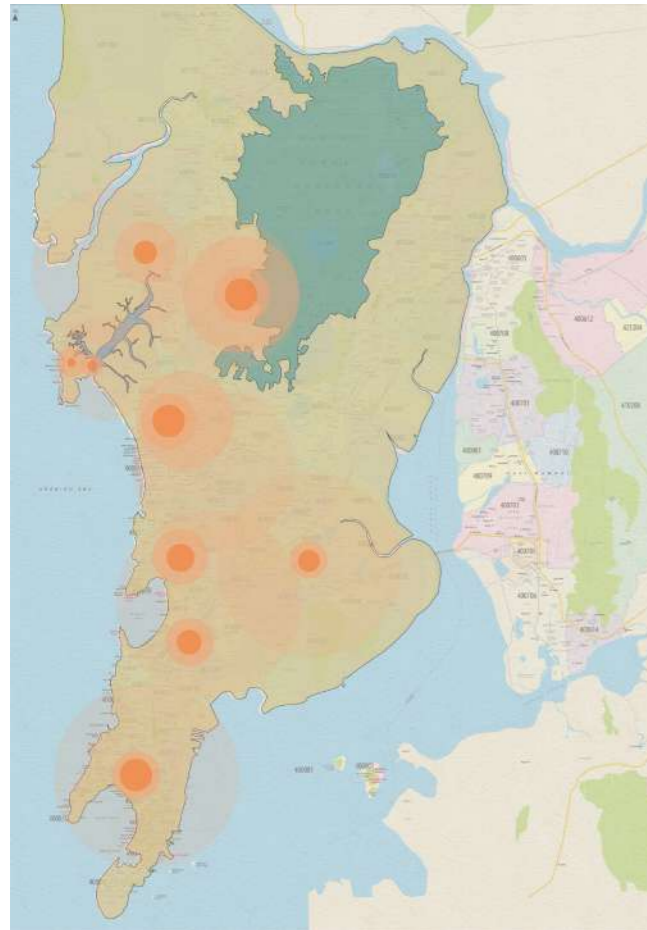
- Railway Stations
- Railway Infrastructure
- Informal Settlement



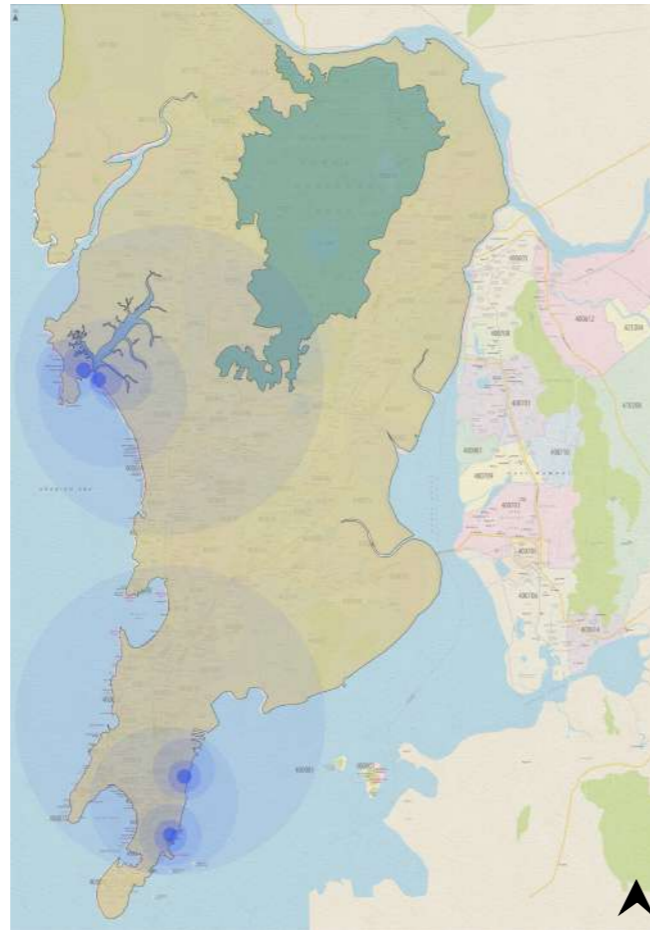
Being a coastal city was always an advantage for the city that it utilized to its fullest potential in not only being the ports of trade during the colonial times, but also in the fishing activity and the consequent economy as one of its earliest occupations.

Mumbai also houses one of the largest industries which is the Indian film industry that not only contributes largely towards the city's and nation's economy but is also responsible for a unique recognition worldwide.





Film Shoot Locations



Fishing

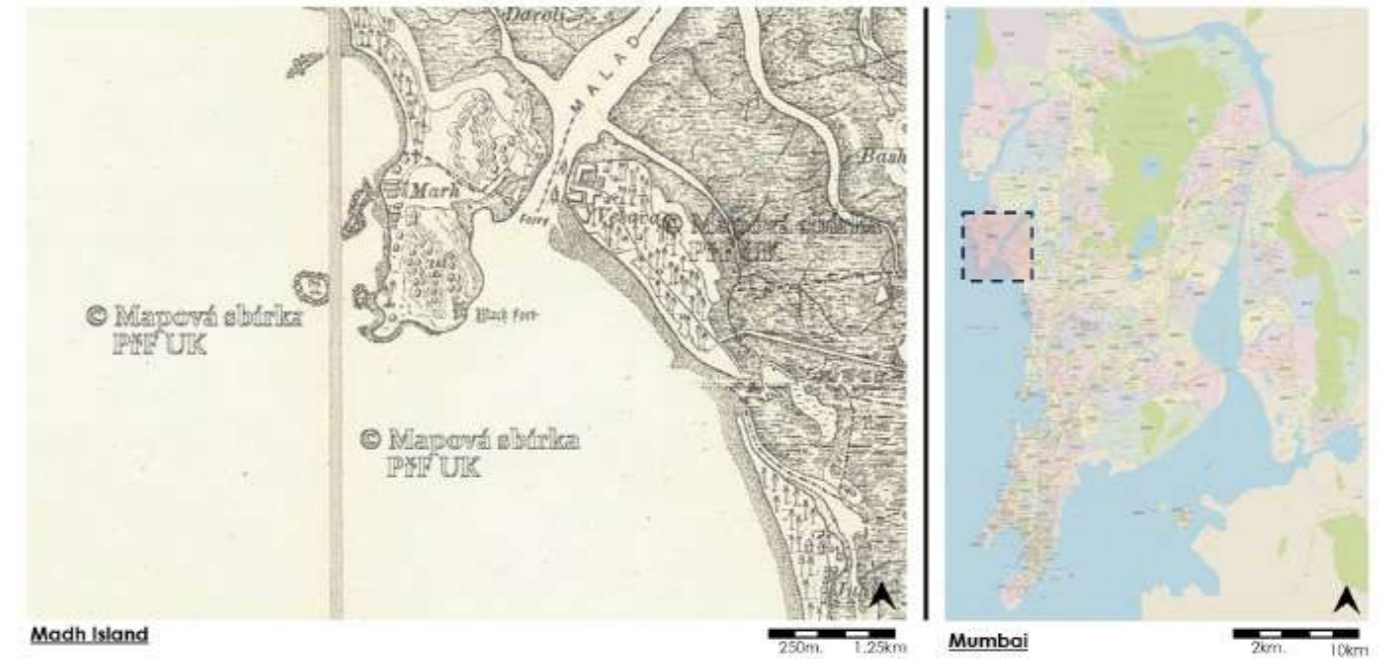
2km. 10km

■ Film Shoot Locations

■ Fishing

An attempt of mapping the several film shoot locations which not only consist of potential locations scouted and utilized for filmings, but also production offices and studios with allied services facilitating these activities, and the most accessed ports for local fishing supplies and economies show that both of these activities have their presence in the north western suburbs of Mumbai.

Source: Maps from Nikhil Jain, Abhijeet Ekbote, Film Companion

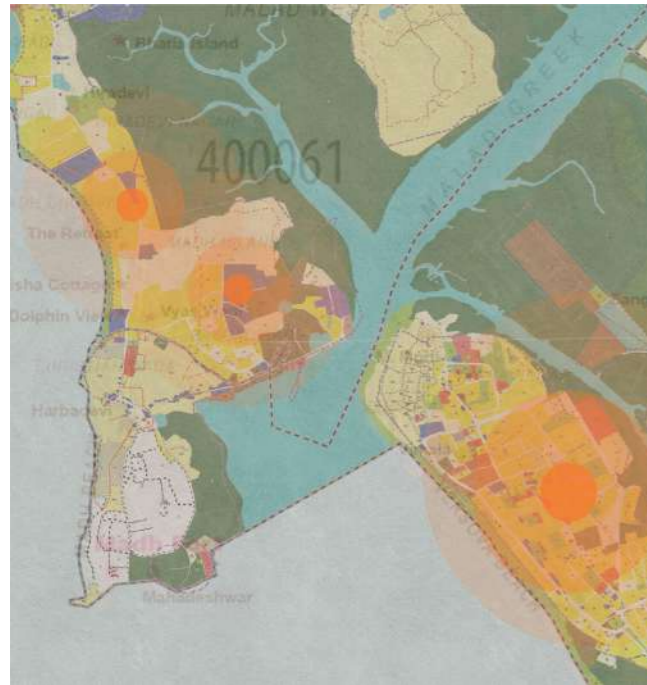


Madh Island

Mumbai

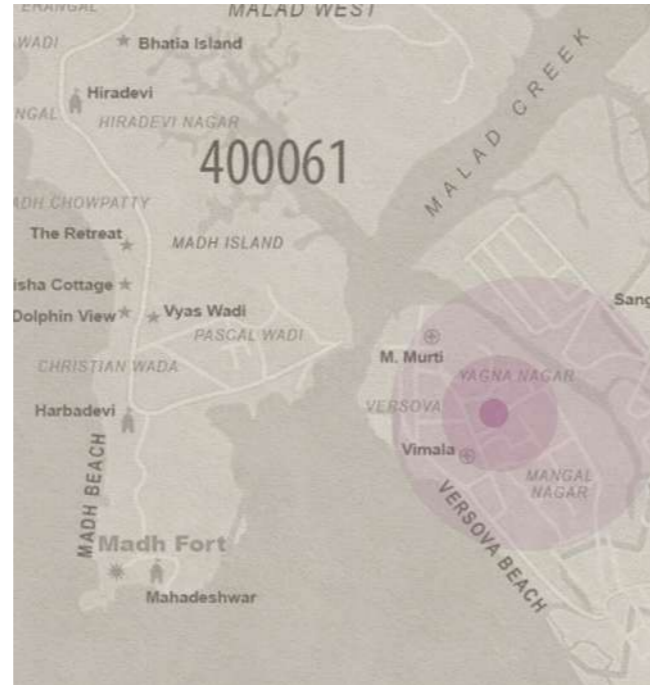
Madh Island is an area separated from the mainland Mumbai suburb by a creek. It is also known as a fishing village and a preferred location for film shoots for the Indian film industry.

Source: Bombay National Archives



Film Shoot Locations

■ Film Shoot Locations



Nearest Rail station

■ Nearest Rail station

A closer look into the area informs of the Versova & Madh Island circuit that is actively involved in fishing and also consist of potential locations for film shoots.

A widely observed phenomenon in this category is the leasing of houses for filming.

Nearest rail network for Madh Island is the Versova metro station.

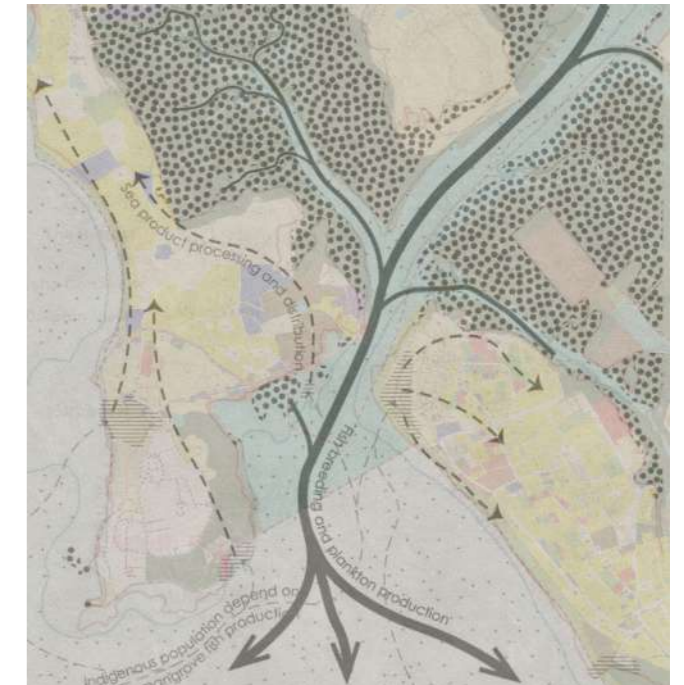
Versova connects with Madh by means of a ferry via the creek.

Source: Urban Design Research Institute (UDRI), Mumbai



Settlement

■ Formal Settlement
■ Informal Settlement



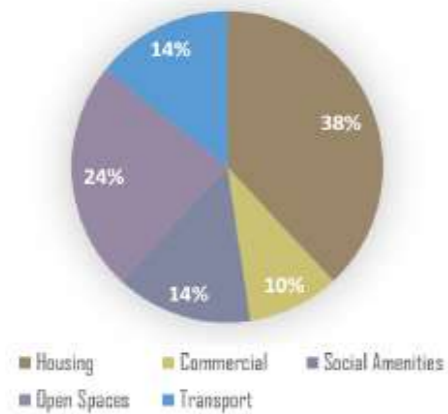
Fishing Activity

A subsequent attempt of mapping the urban sprawl in the area along with the network of the fishing activity with regards to its inward supplies to the city.

Source: Urban Design Research Institute (UDRI), Mumbai



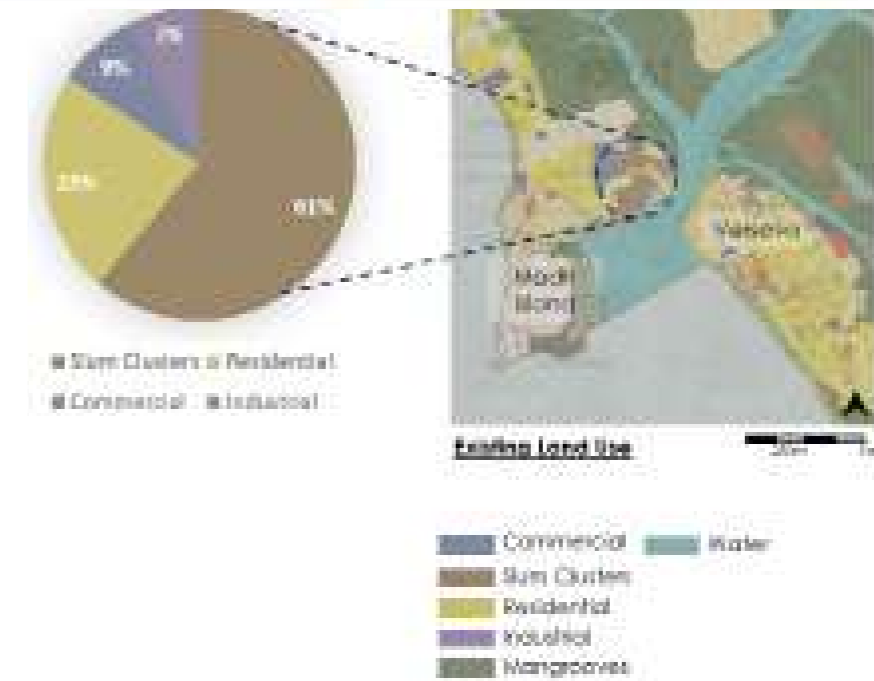
As per DCR (Development Control Regulations)



- As per the new DP2034 (Development Plan), the previously designated NDZ is re-marked as SDZ (Special Development Zone)
- The new framework for the SDZ in the rules stated in the in regulation suggests 40% of it to be for Housing.

The municipal authority of Mumbai along with regional and town planning department in its proposed development plan DP2034 has released certain portions of the land in the city for future development also with an attempt to accommodate the growing population in the city.

Source: UDRI, MCGM 2020

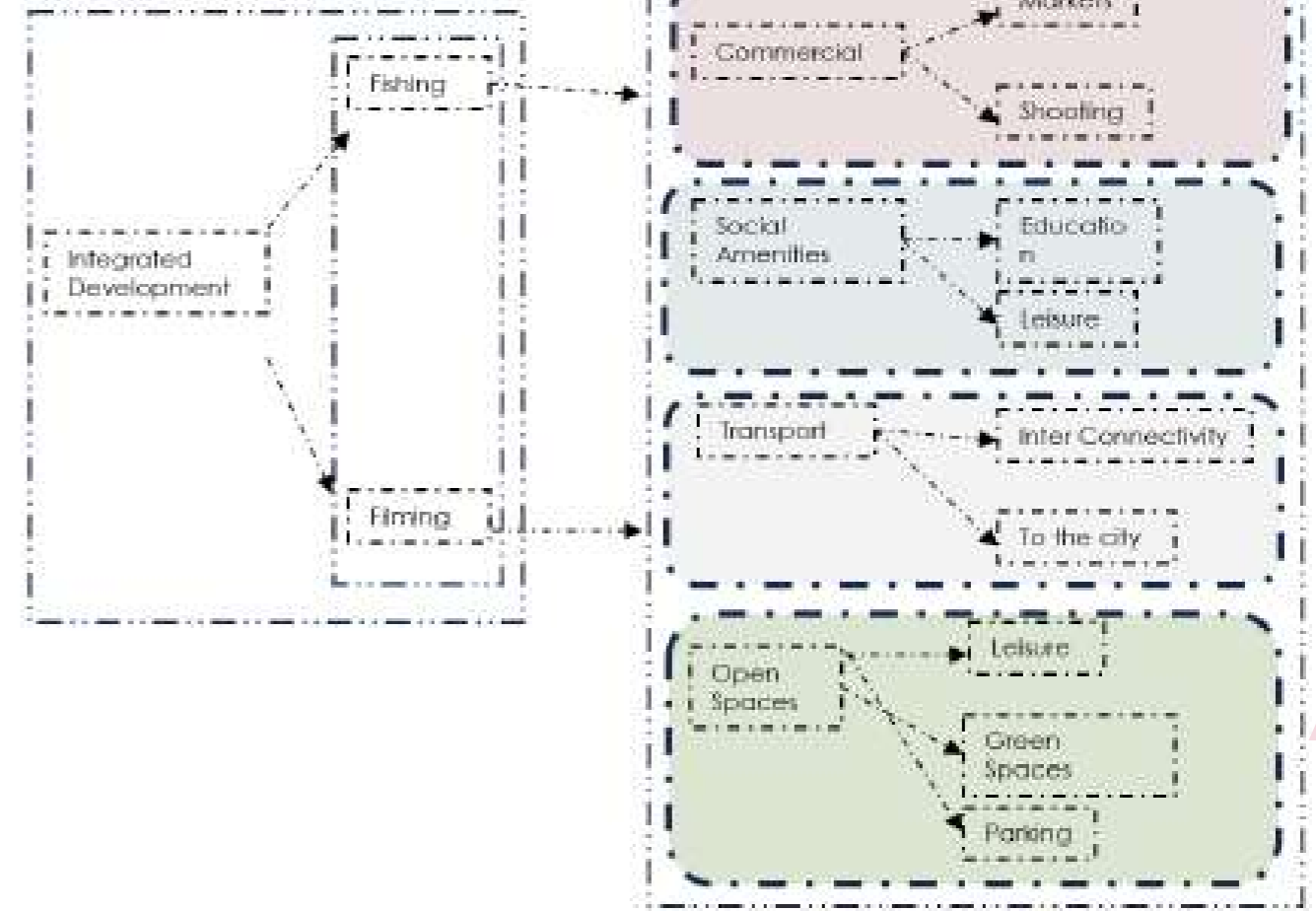


However, a closer look into the existing land use of the area suggests the slum clusters and also supplements to the the informal settlement previously observed.

Source: UDRI, MCGM 2020



Prioritize existing community & occupation



As a history of urbanization in Mumbai suggests, its repercussions reflected upon the existing settlements have resulted in evacuation of the communities and informalized settlements.

Although a proposed development is much welcomed by the communities of Madh Island and the migrating population, it is important for the urban regeneration to be prioritized with the existing communities and economies that would not only formalize the settlements but also provide a better lifestyle for them.



Ref.: Tanner Street Gateway by Peter Barber



Ref.: Preto Lopez House by Luis Barragan



Ref.: Aranya Community Housing by BV Doshi



Ref.: Sheikh Sarai Housing by Raj Rewal



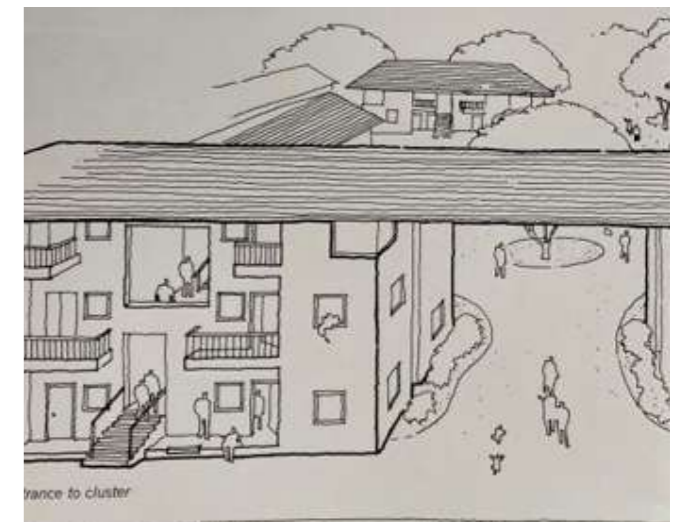
Ref.: La Muralla Roja by Ricardo Bofill



Ref.: Asian Games Villages by Raj Rewal



Ref.: Titan Township by Charles Correa



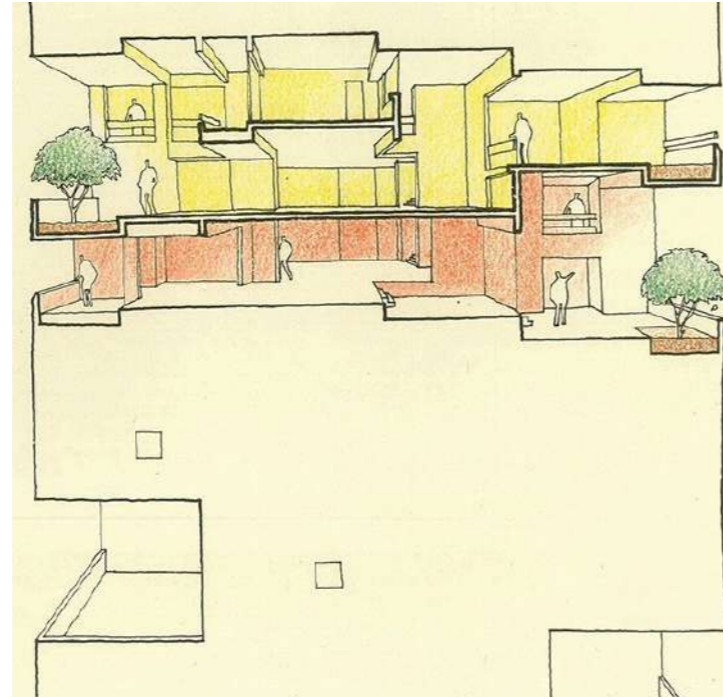
Ref.: Low income housing by Charles Correa

The theoretical underpinnings and precedents for a design language and the practicality of the proposed urban formalized sprawl, particularly with the juxtaposition of the housing blocks, urban commons and the built and unbuilt responses prioritized for a local community.

Source: Barragan Foundation, Ricardo Bofill Projects, Raj Rewal Projects, Peter Barber Architects

The theoretical underpinnings and precedents for a design language and the practicality of the proposed urban formalized sprawl, particularly with the juxtaposition of the housing blocks, urban commons and the built and unbuilt responses prioritized for a local community.

Source: B.V. Doshi Projects, Raj Rewal Projects, Housing & Urbanization: Charles Correa



Ref.: KANCHENJUNGA by Charles Correa

Reference and a precedent establishing context for spatial distribution for housing appartments in the context of Mumbai, India. The precedent particularly help in understanding and implementing the intermediate terraces and alternating balconies.

Source: *Housing & Urbanization: Charles Correa*



Ref.: KALA ACADEMY, GOA by Charles Correa

Reference and a precedent establishing context for spatial distribution of colors and ambience. The precedent also helped setting an imagery of utlization of facades and walls with paintings depicting the nature of the surrounding it resides in.

Source: *Kala Academy, Goa*



Ref.: CASA LUIS BARRAGÁN by Luis Barragan

Reference and a precedent establishing context for spatial distribution of colors and ambience

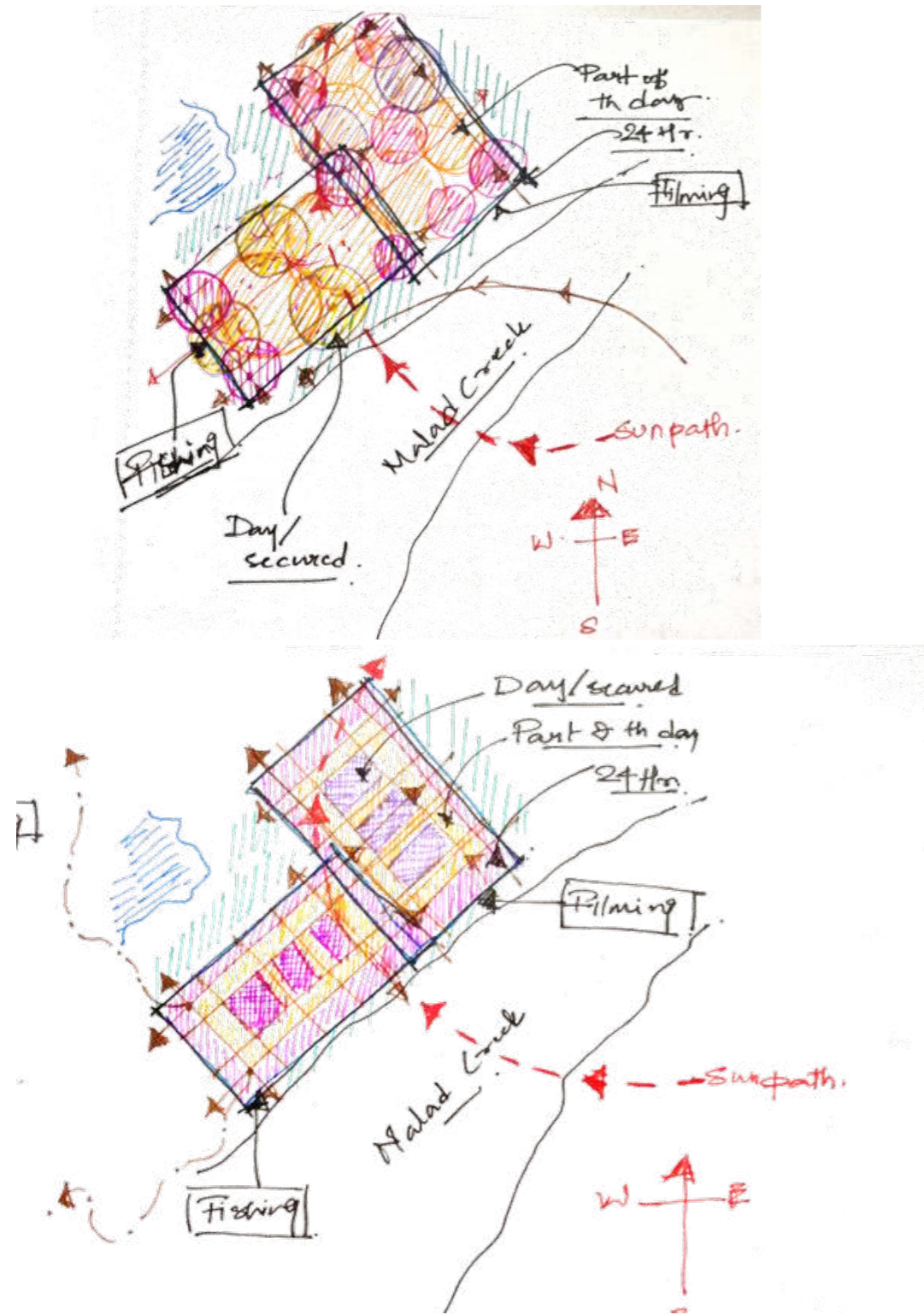
Source: Barragan Foundation



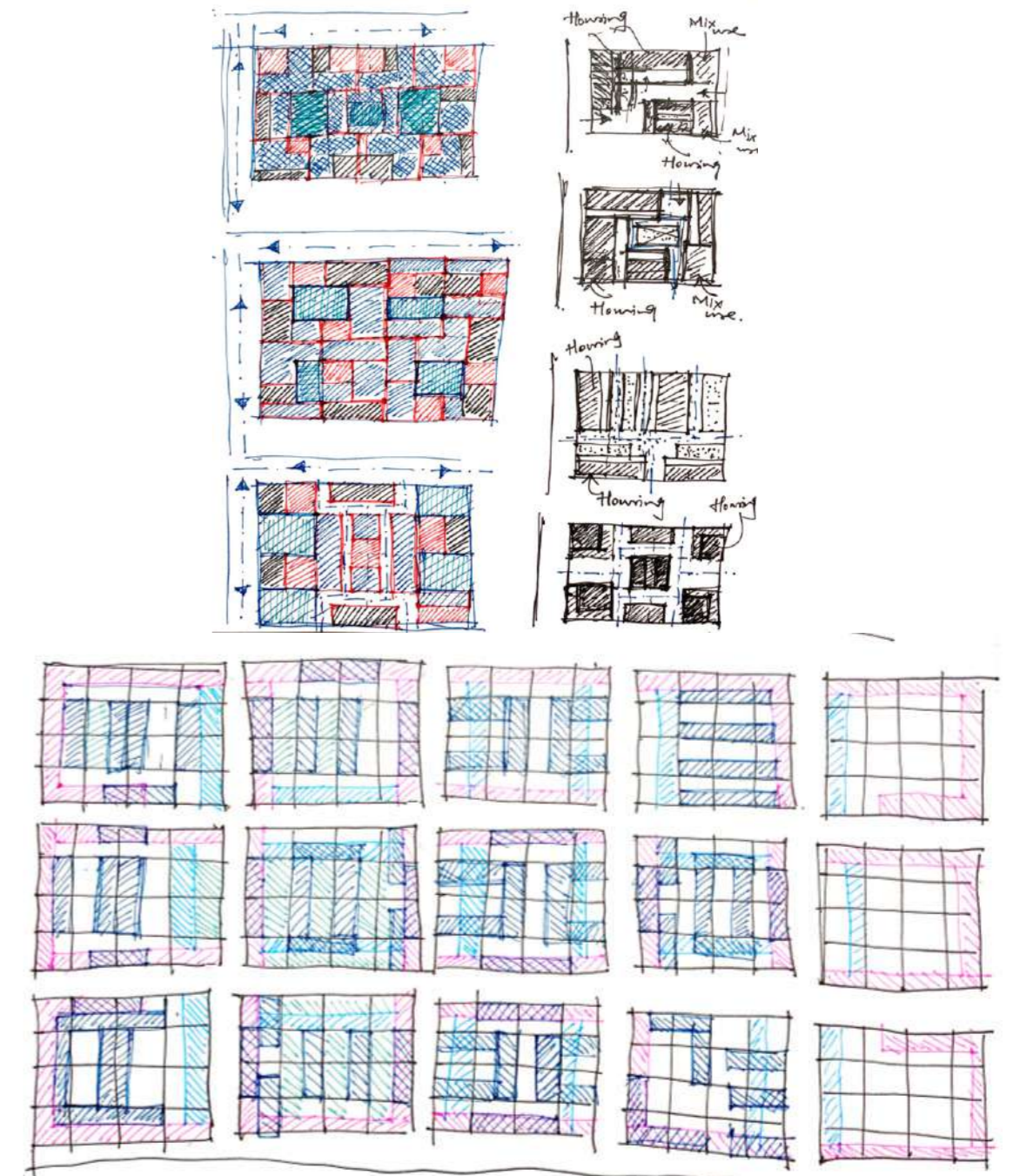
Ref.: Painting by Sudhir Patwardhan

Reference and a precedent establishing the intended nature of the surrounding that needed a due consideration and appropriation in the design and theme of the urban complex.

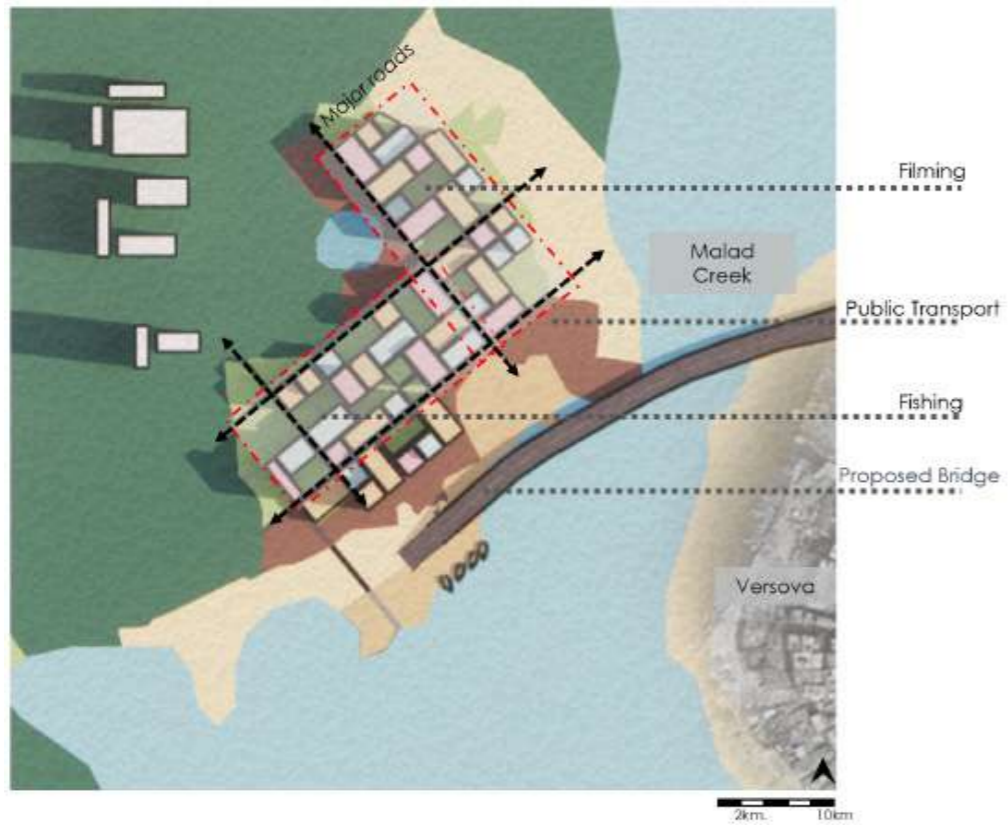
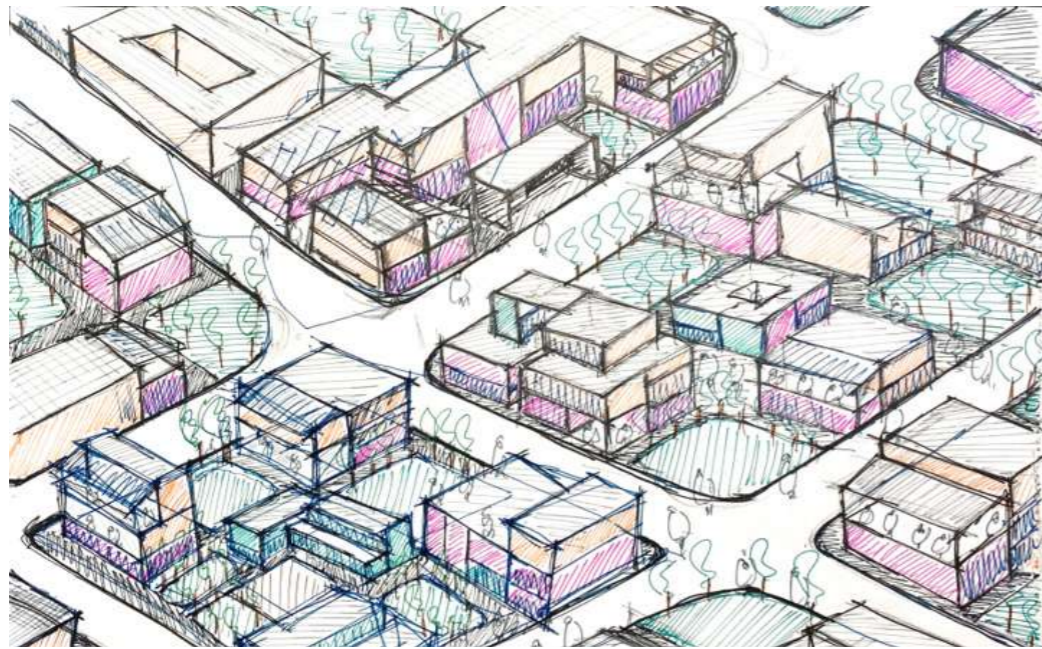
Source: *Three Questions: Amlanjyoti Goswami with Sudhir Patwardhan*



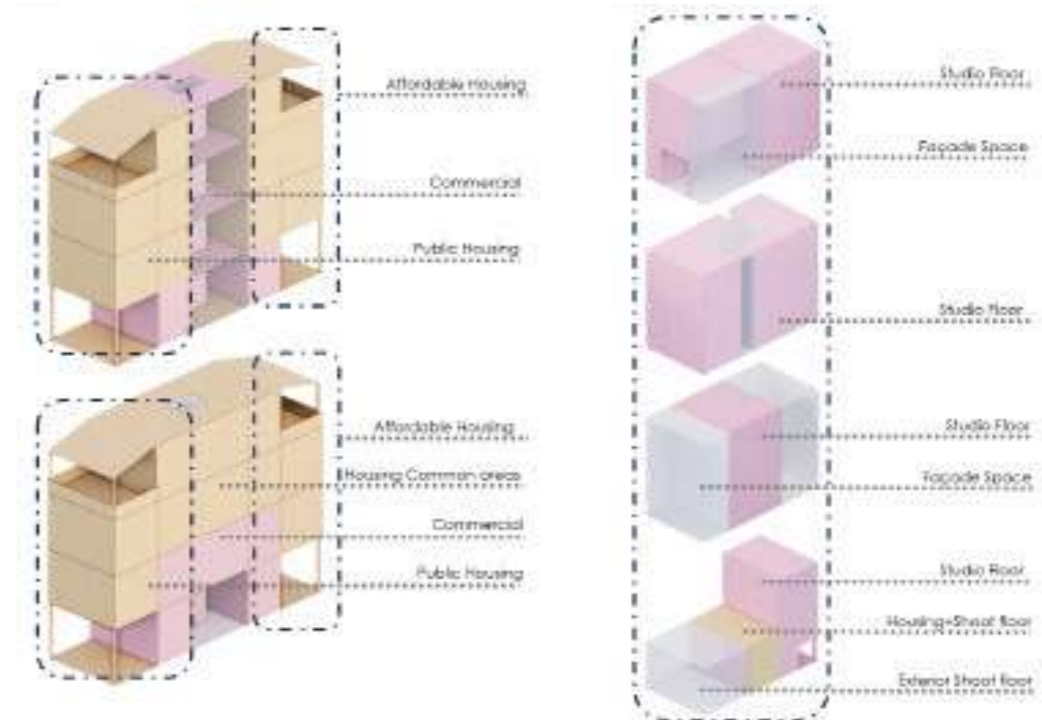
Considering the two active occupations within the area i.e. fishing and filming, the masterplan strategizes on housing these communities and along with the migrating population working within these sectors. Although the masterplan intends to be integrated with the several verticals of amenities for development, for its efficiency the sectors would be distinctly placed in the geography as illustrated.



Different alterations with permutations and combinations of the housing blocks orientations with the open spaces and urban commons.



A more refined illustration suggesting integrated and mixed use development within these sectors.



A masterplan massing and alternatives illustrating combinations of the housing blocks for affordable and public housing and different ways of developing the studio floor spaces for the filming sector considering the usage.



Working site plan model to understand the geographical location of the selected site in relation with the existing context of the surrounding.



MASTERPLAN PROPOSAL



Pascal Wadi

Raheja Exotica

Malad Creek

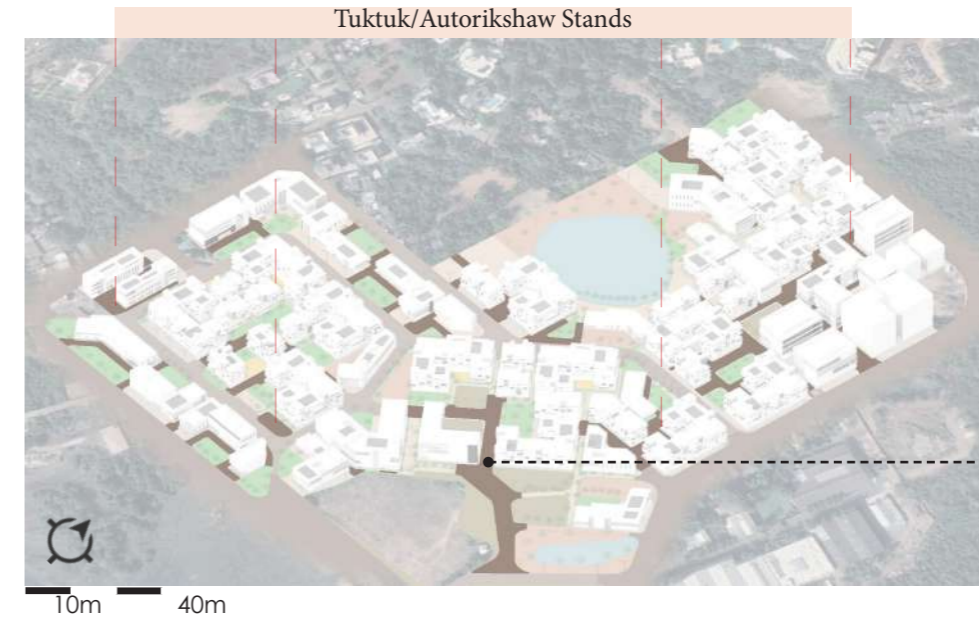
Madh Jetty drop off point

20m 60m





Main road connecting the proposed area to other parts of Madh island and the Western Suburbs of Mumbai via the proposed birdge.



Light Locomotive Vehicle (LMV) route for the three-seator tuktuk/ autorik shaws in Mumbai. Route also accessible for cars and other smaller vehicals including bicycles & bikes



Hight Locomotive Vehicle (HVM) route for bus, trucks etc. routing and encircling the sectors and connecting at designated points .



Pedestrian route within the built structure and open spaces network.



Street Section 2

Public parks & Playgrounds



Ref: Ganesha Festival, Mumbai

Urban Commons // Festivals & Community gatherings



Street Section 3

Open space within housing blocks// private open community space



Ref: Hiranandani, Mumbai

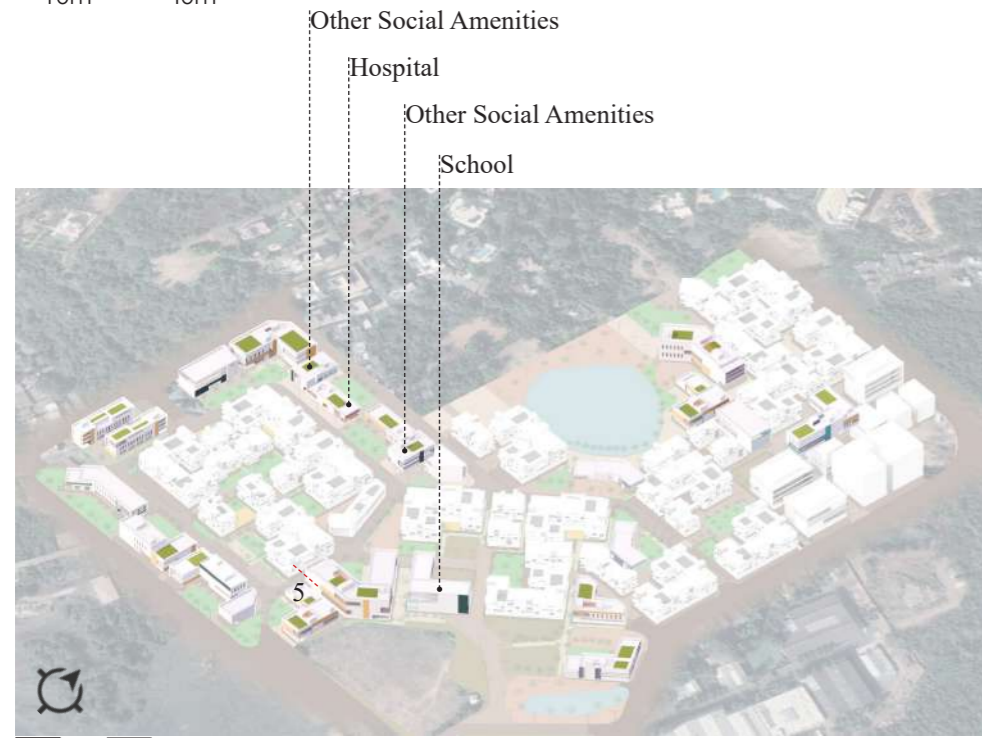
Plazas and open arenas // Hardscaped open spaces

Private open spaces within the housing blocks are accessible open spaces but intimate to be extensively utilised by the community housed within the blocks. It is also a secured open spaces, identifying itself as a verandah to the houses around it.

The positioning of the urban commons is intended to allow it to be accessed by communities from both the sectors within an equal time and distance, also becoming a strategic intersection for the communities. The urban plazas and hardscaped open spaces would balance the built environment around responding and situating itself amidst green spaces also as a material interjection.



Housing Blocks // Public & Affordable Housing



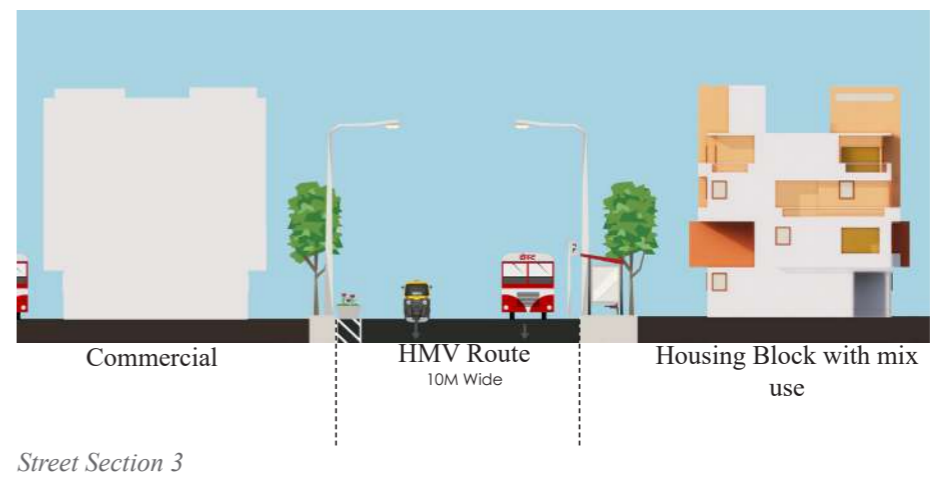
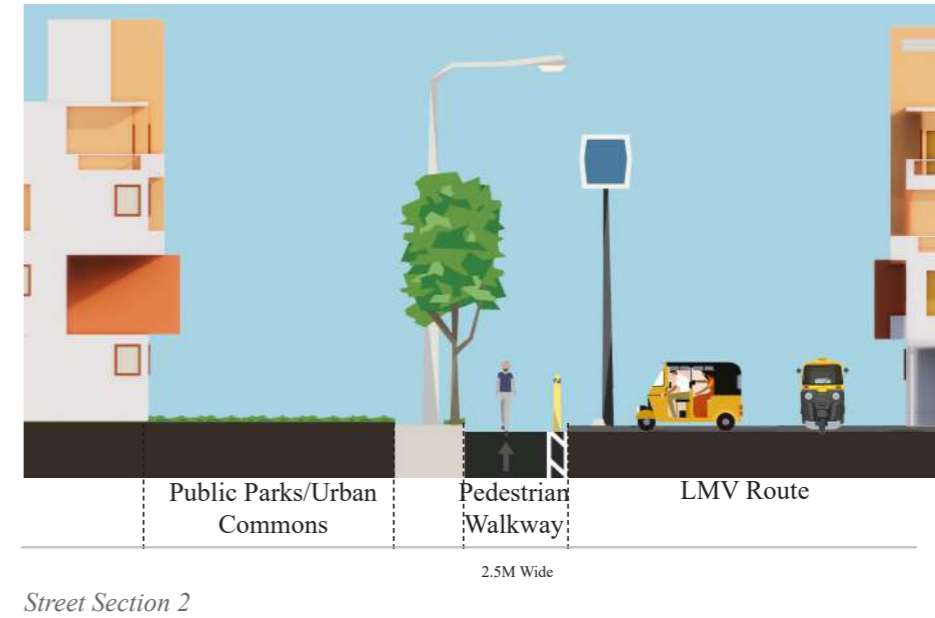
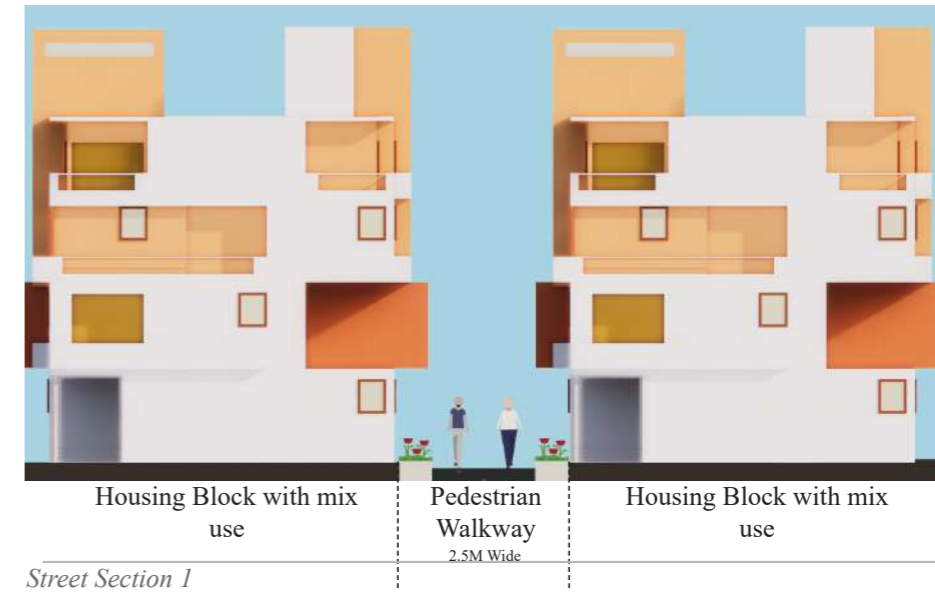
Other Social Amenities
Hospital
Other Social Amenities
School

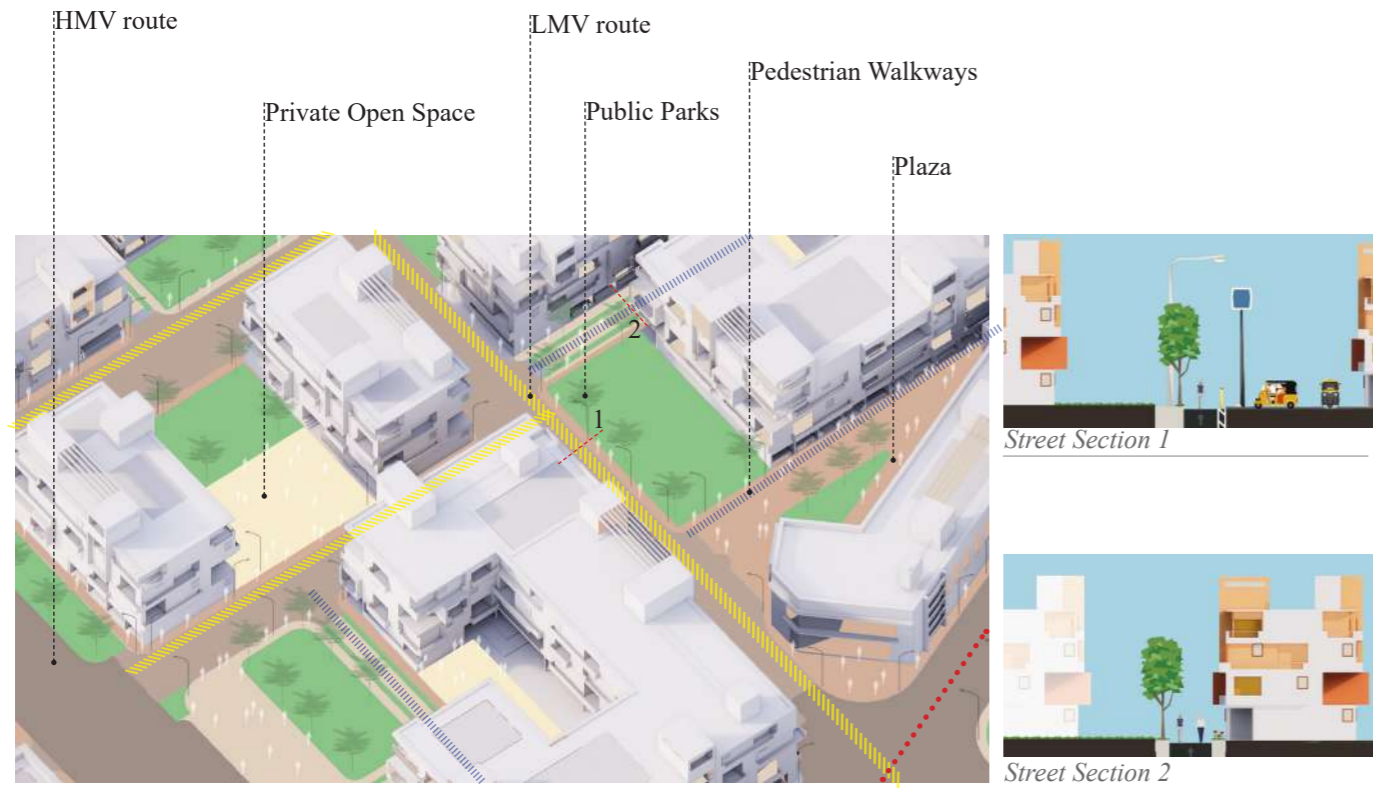


Offices / Theatre
Production offices & Theatres
Shopping Complex
Offices



Parking for the shooting activity
Shooting Studios // Varying sizes and accessible facades





A balanced proposition of road networks within a cluster of built and unbuilt spaces.

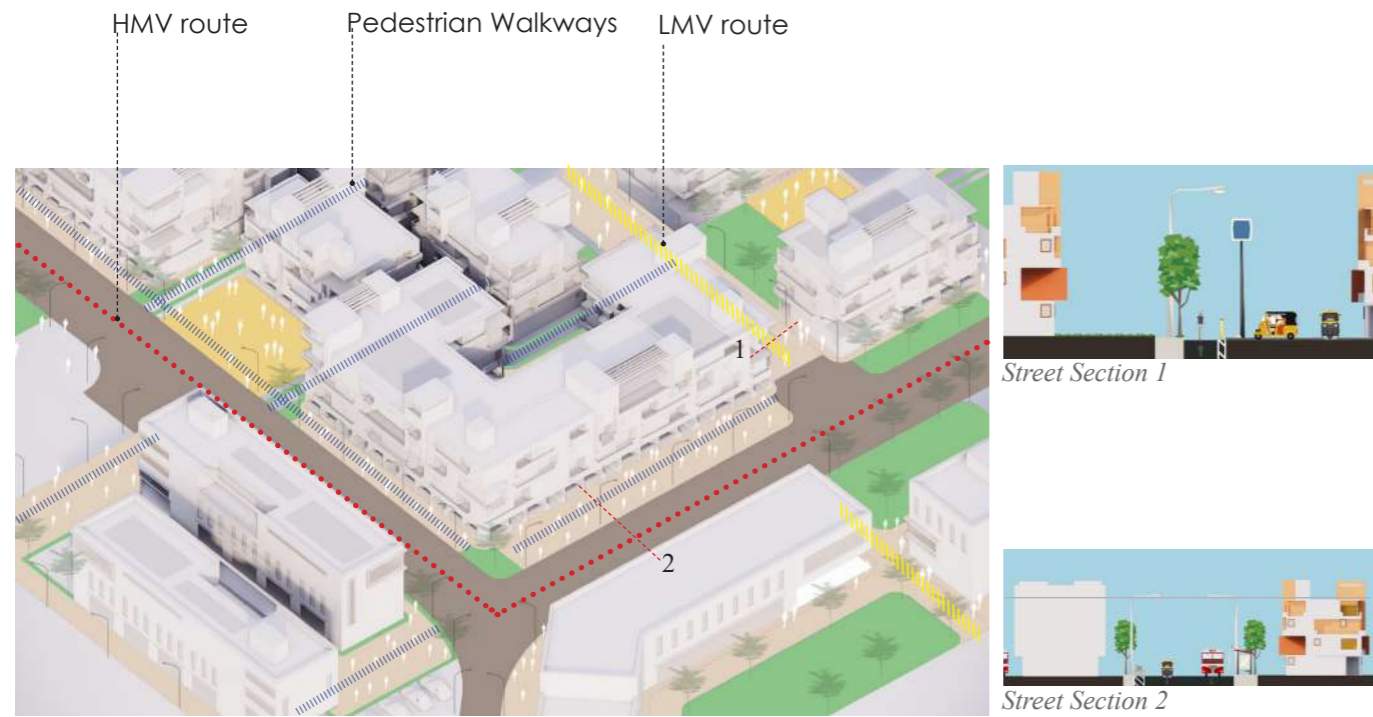


The housing blocks to have terrace gardens advantaged by the flat terraces. The terrace garden would facilitate into rainwater harvesting and also maintain the environment and balance out the green spaces in the city. In a city like Mumbai, these terraces are also accessed as community spaces for various functions and festivals, particularly kite-flying festival during the onset of spring season.



The road network grades itself from the main road to road designated for heavy vehicles and then funnelling into light vehicular roads which further dessimates into pedestrian only network.

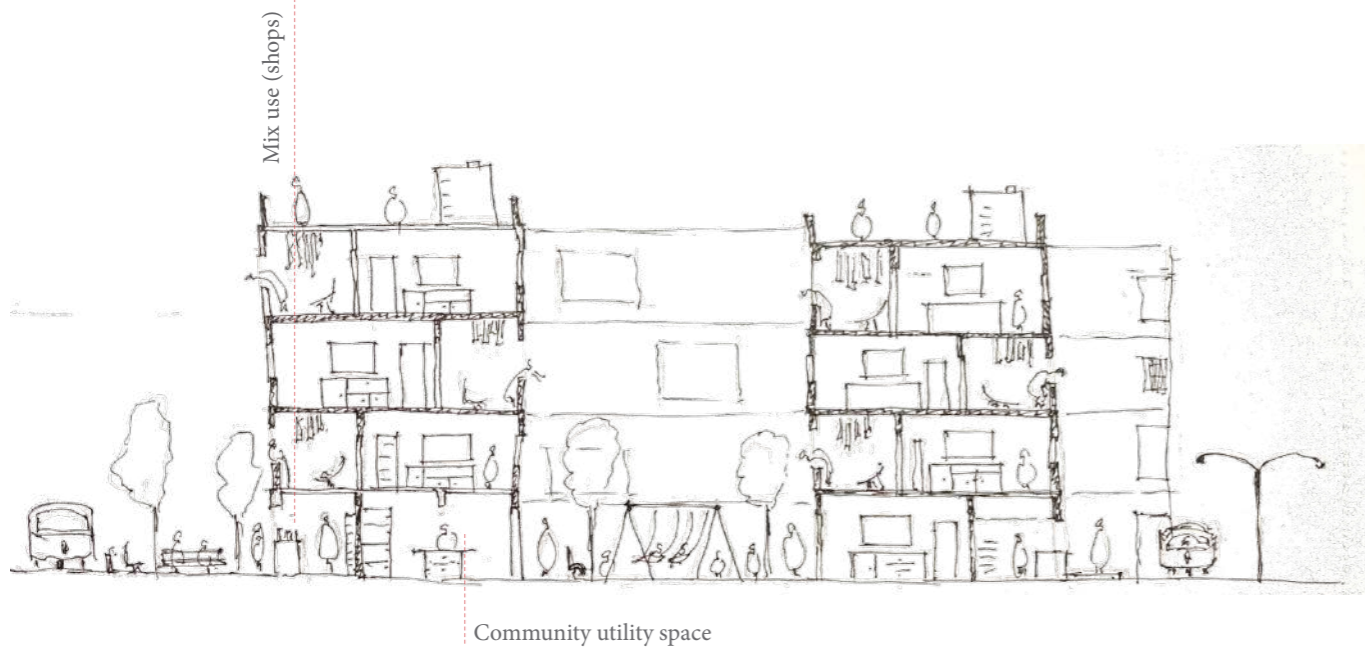
The open spaces grade themselves from public parks and community gardens to private and intimate verandah-like open spaces within housing blocks.



The road network grades itself from the main road to road designated for heavy vehicles and then funnelling into light vehicular roads which further dessimates into pedestrian only network.

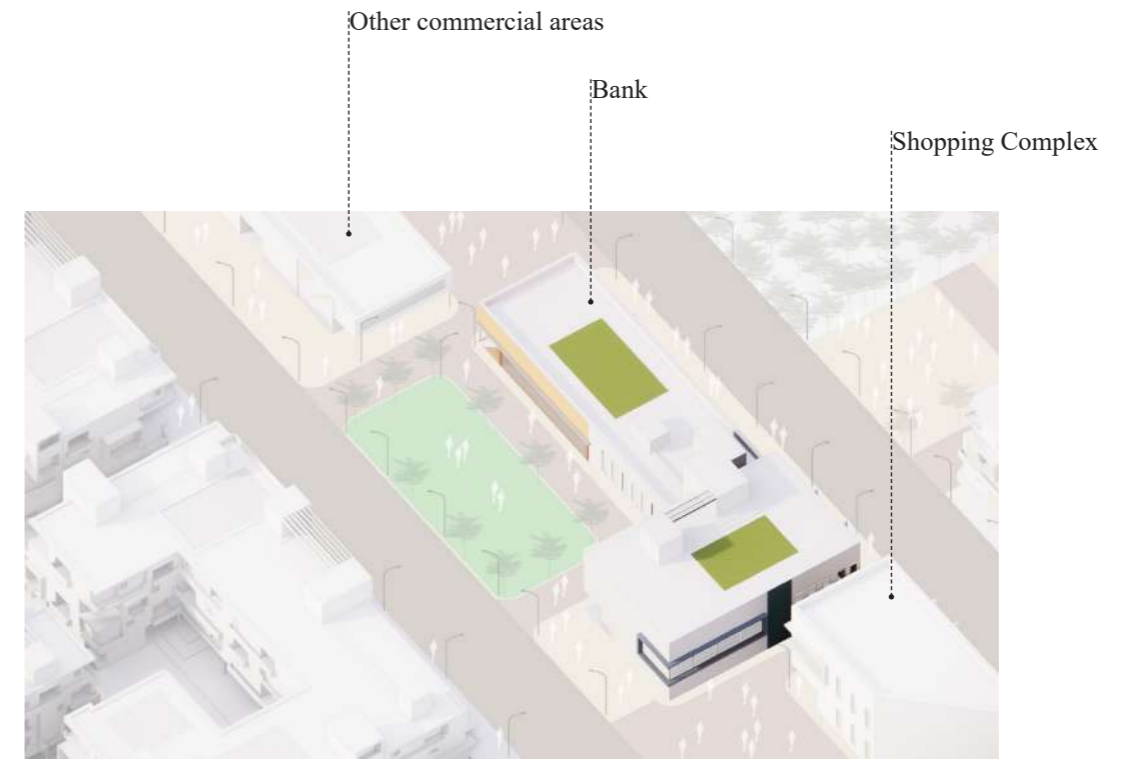
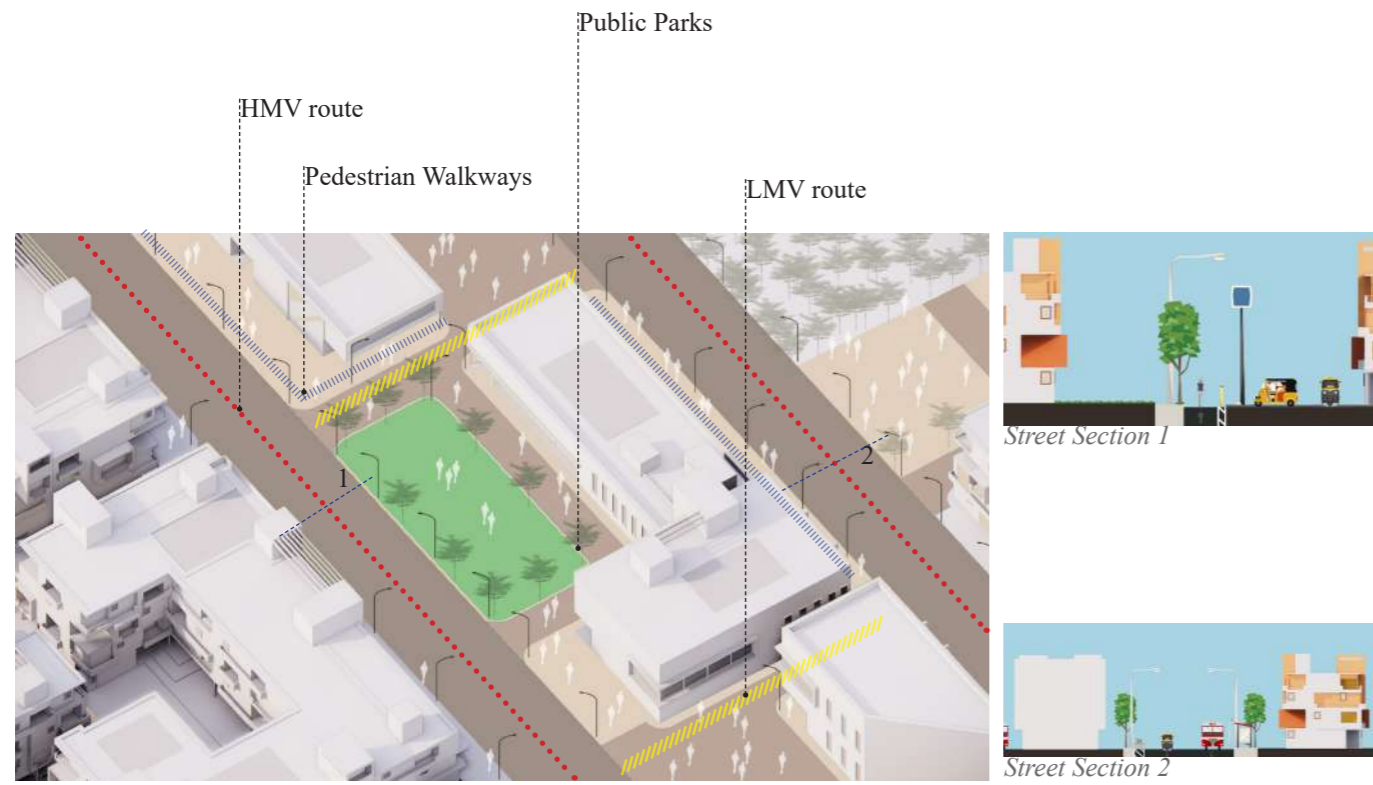


A housing block arrangement carefully seperated from the commercial blocks and grading itself slowly into the housing by means of a mixed-use shops and other amenities under the apartments.



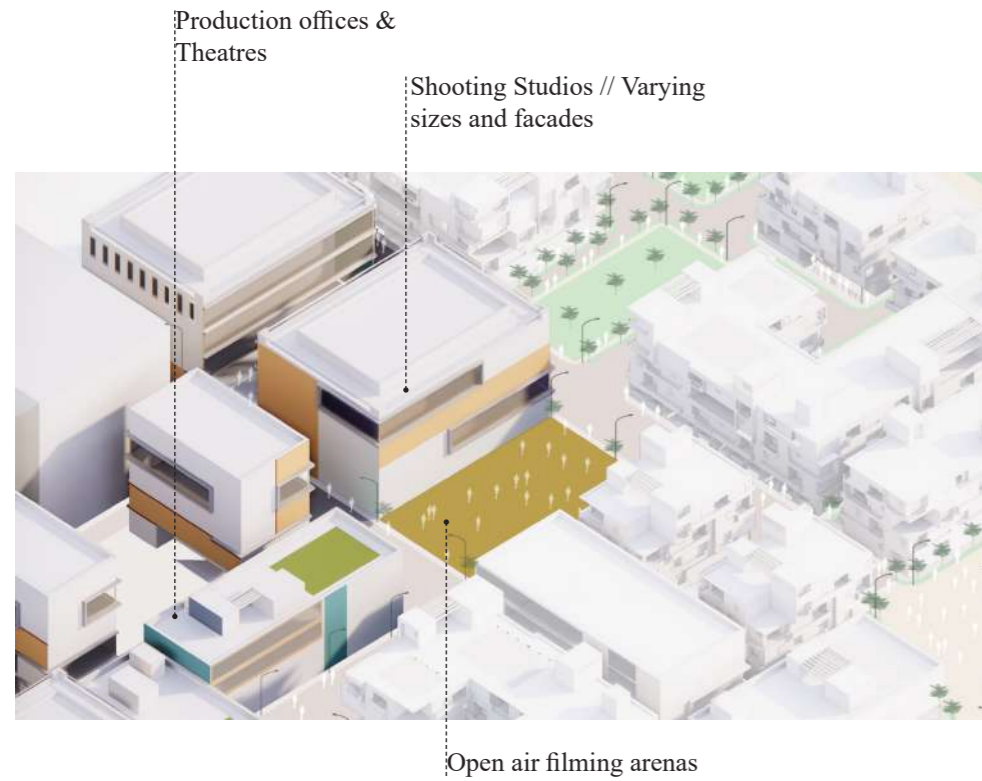
Conceptual sketch indicating mix use shops on the ground floor of the housing block along with the other side of the block having a flexible utility for the community .

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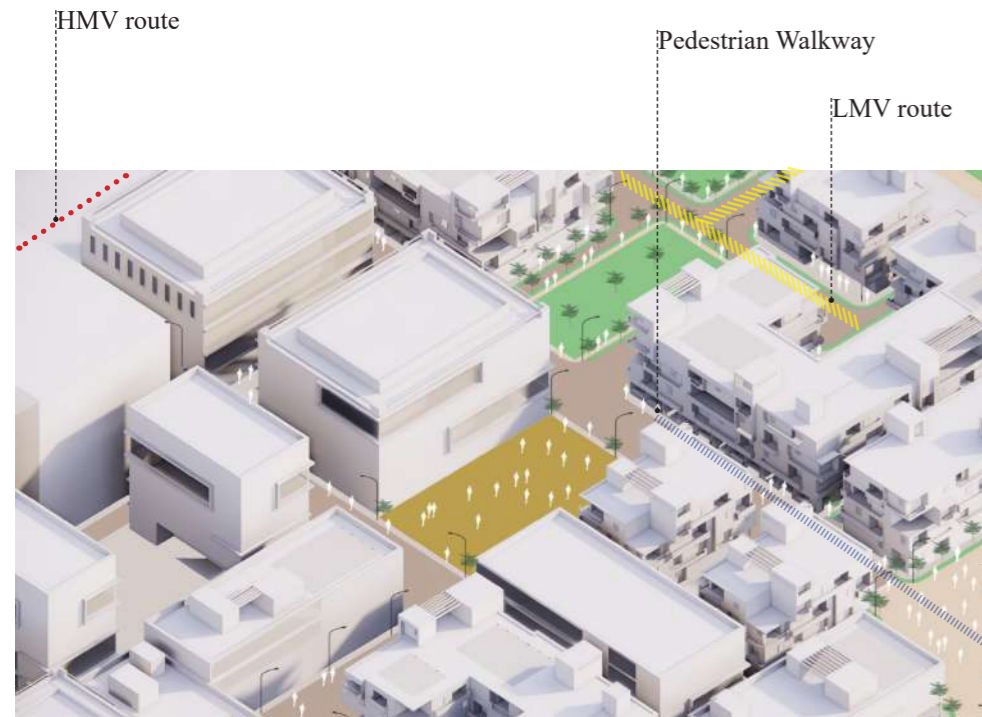
The overall masterplan of the complex with its integrations of commercial, social amenities and particularly mixed use facilitating the existing communities and the migrating population would not intend to generate an identity for the area but also effectively submit to the economic sustainability of the overall complex thereby also making it self sufficient in several ways.



The facades of the studio spaces also become potential backdrops for film sets and locations. The urban commons onto the studios would provide for a flexible use for structures and unbuilt spaces such as these. Activities within these realms would be effective means of economic sustainability of the complex.



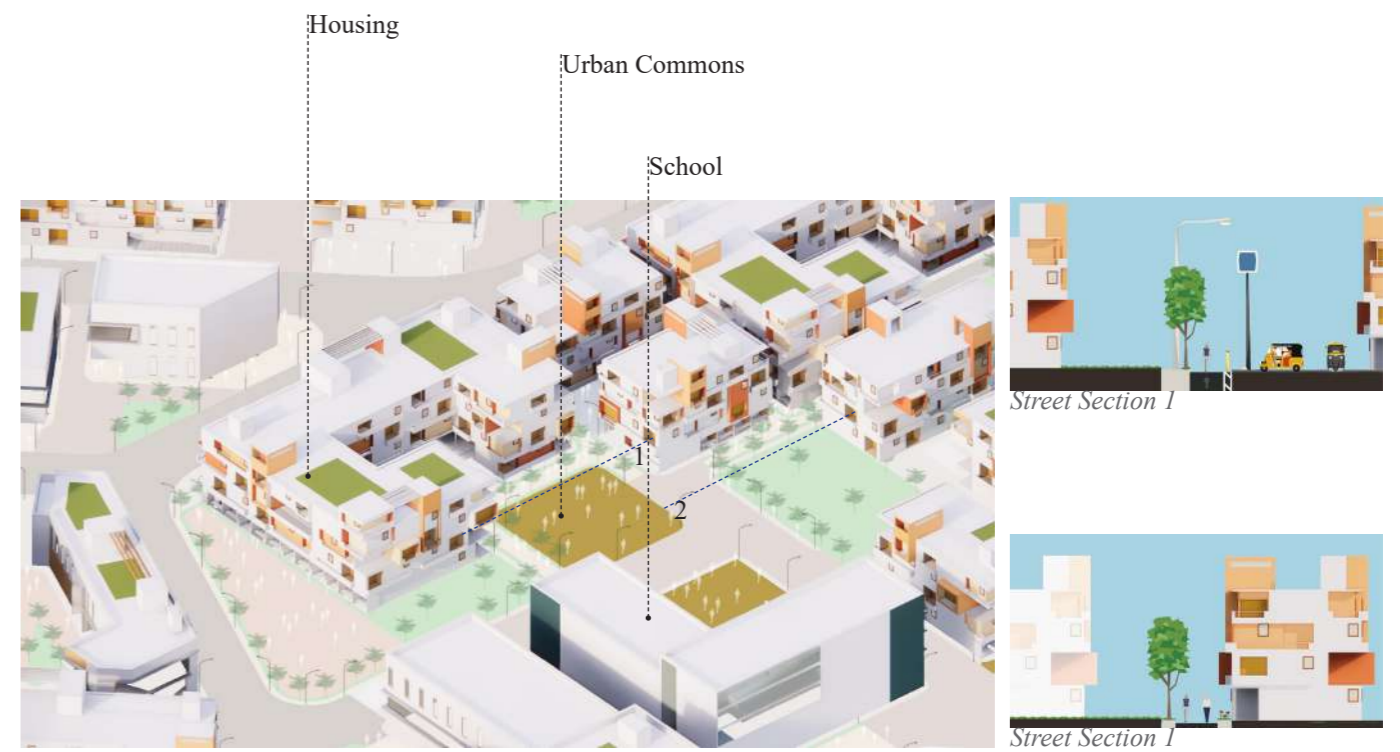
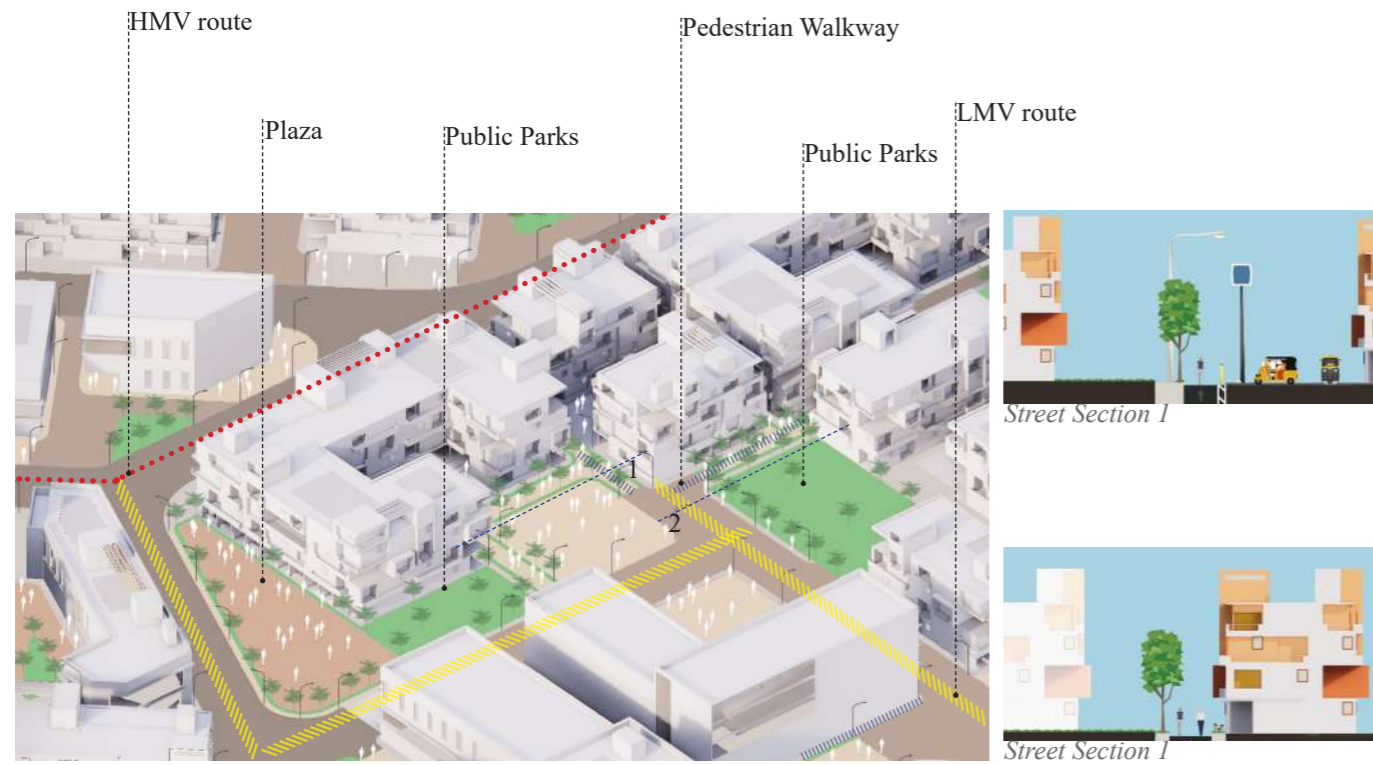
The housing blocks within the filming sector would also potentially be accessed for its geography for filmings and city-like ambiances for locations. The houses would not only lease out for film shoots but essentially house the working community withing the sector and allow an economy to generate as well.



The facades of the studio spaces also become potential backdrops for film sets and locations. The urban commons onto the studios would provide for a flexible use for structures and unbuilt spaces such as these.

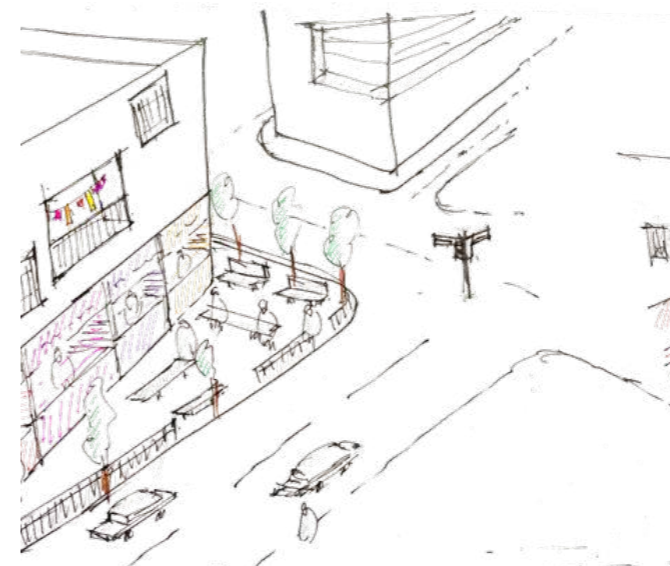


Facades such as these to be flexibly accessed by artists working within the film sector and living in the housing complexes within the area. This would also contribute effectively towards social sustainability of the overall complex.





Plazas and areas of urban commons along with public parks grading themselves into the private and intimate community spaces within the housing blocks.



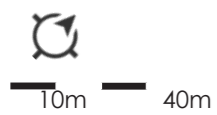
Plazas and areas of urban commons along with public parks grading themselves into the private and intimate community spaces within the housing blocks.

URBAN PROTOTYPE



Selected neighbourhood for the prototype:

The selection consists of all the necessary factors to be addressed through the prototyping i.e. required built and unbuilt spaces along with the segregation of the transport network.



Unbuilt Spaces:

The selected neighbourhood consists of unbuilt spaces that could double up as urban commons, plazas with informal activities, and green areas. The transport network includes main road connectivity, dedicated pedestrian walkways and cycle tracks.





Built Structures// Housing:

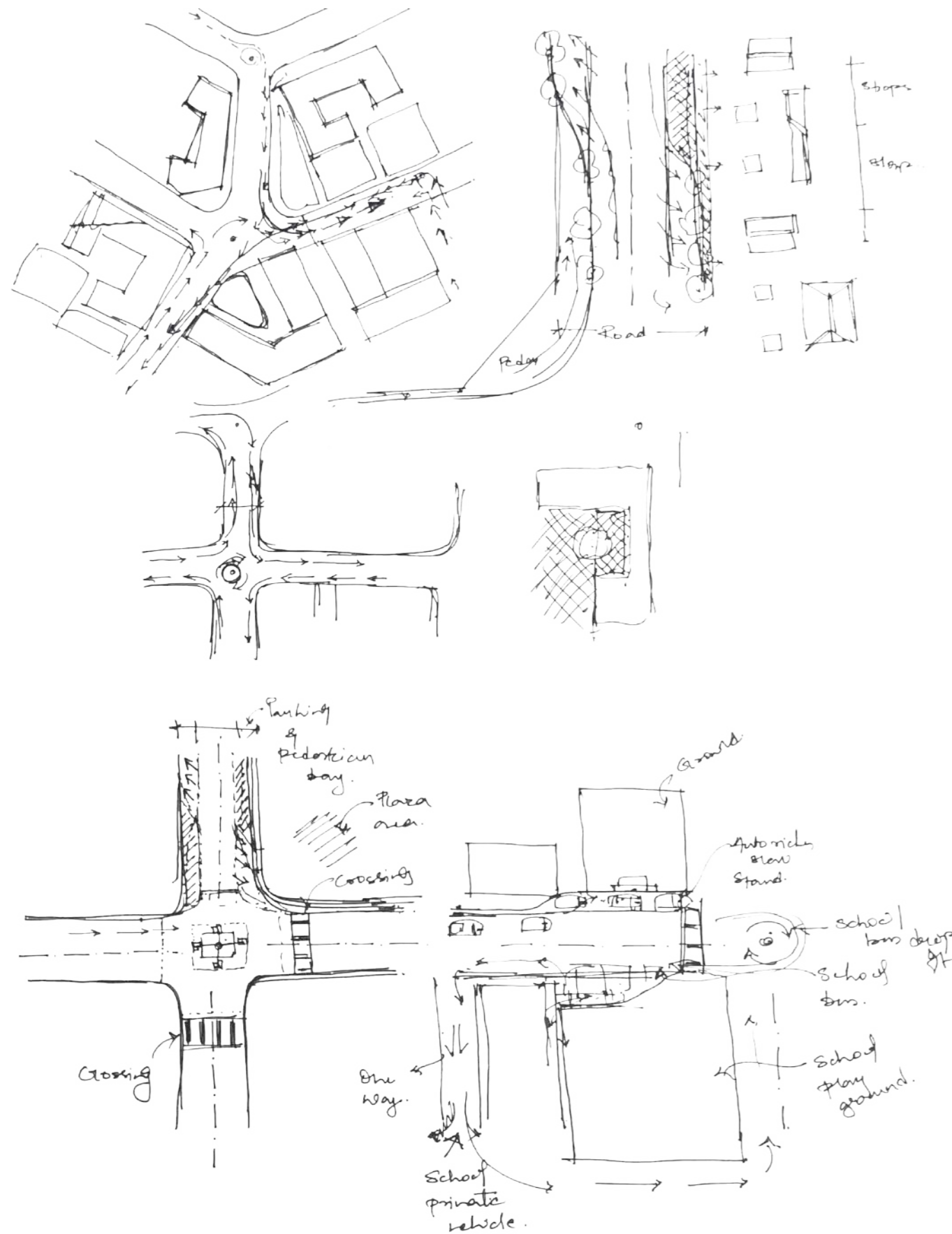
The housing is a typical prototype of the housing block in the overall urban complex.



Built Structures// Commercial & Social Amenities:

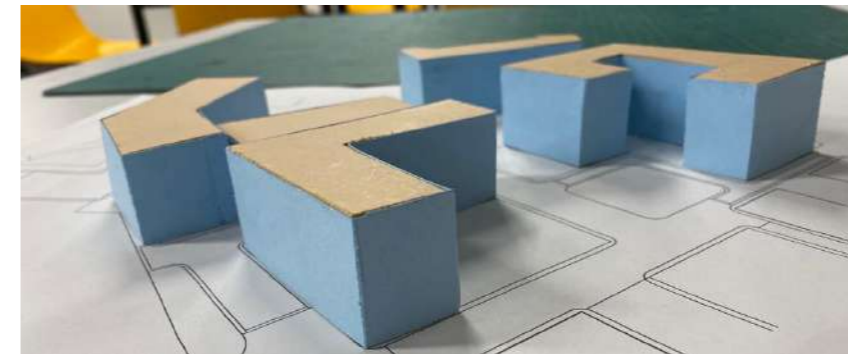
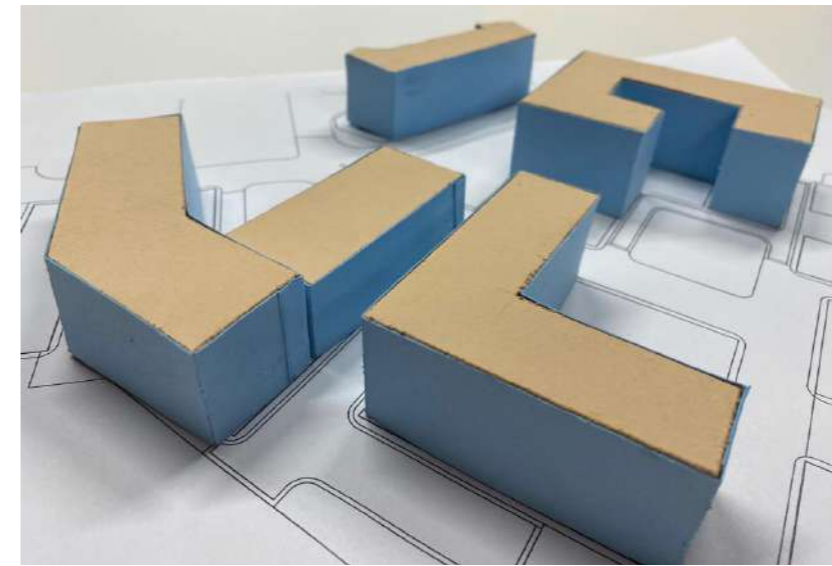
The commercial and social amenities fall in a more strategic location considering the transport connectivity as well as the unuilt spaces surrounding the structures.





Working Sketches:

Brainstorming ideas on navigating transport connectivity and segregation of dedicated road networks around the built and unbuilt spaces.



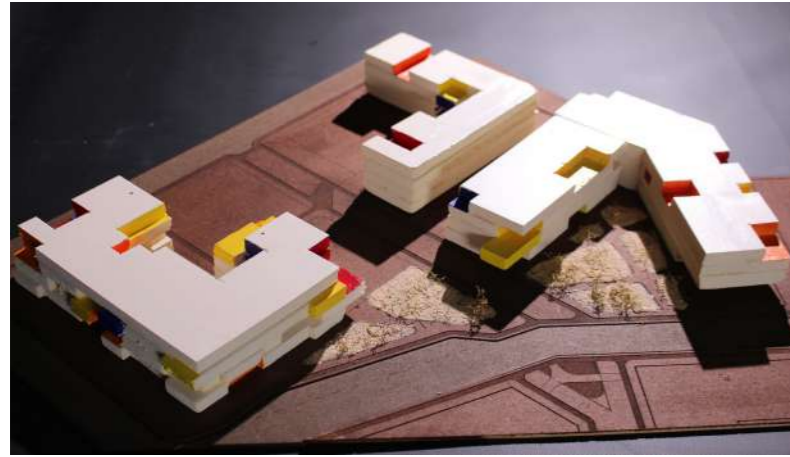
Working Model:

Exploring options for scale and intermediate spaces by means of a block model.

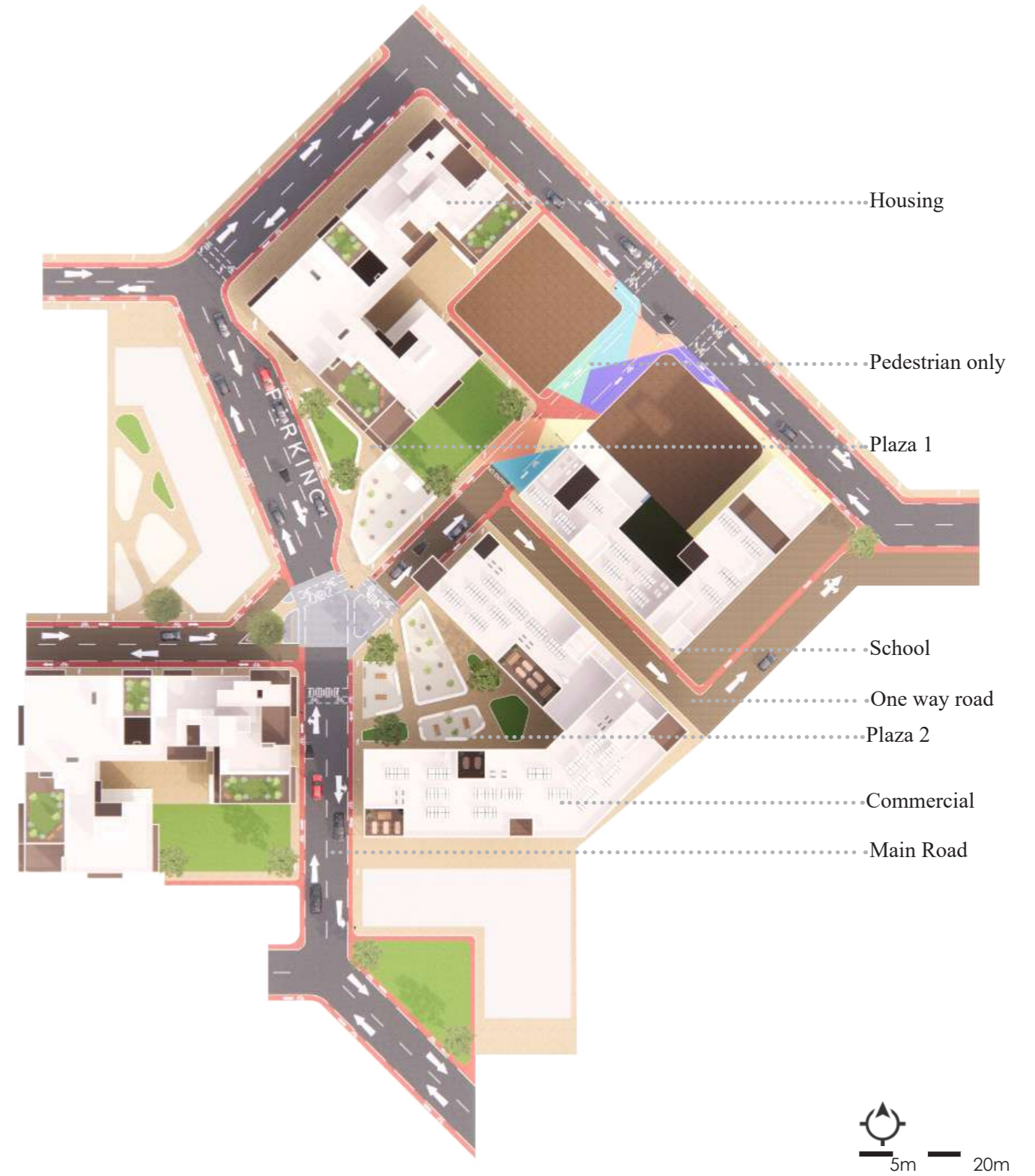


Working Model:

Exploring options of different forms for the built structures with in and around unbuilt structures.



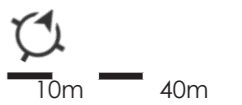
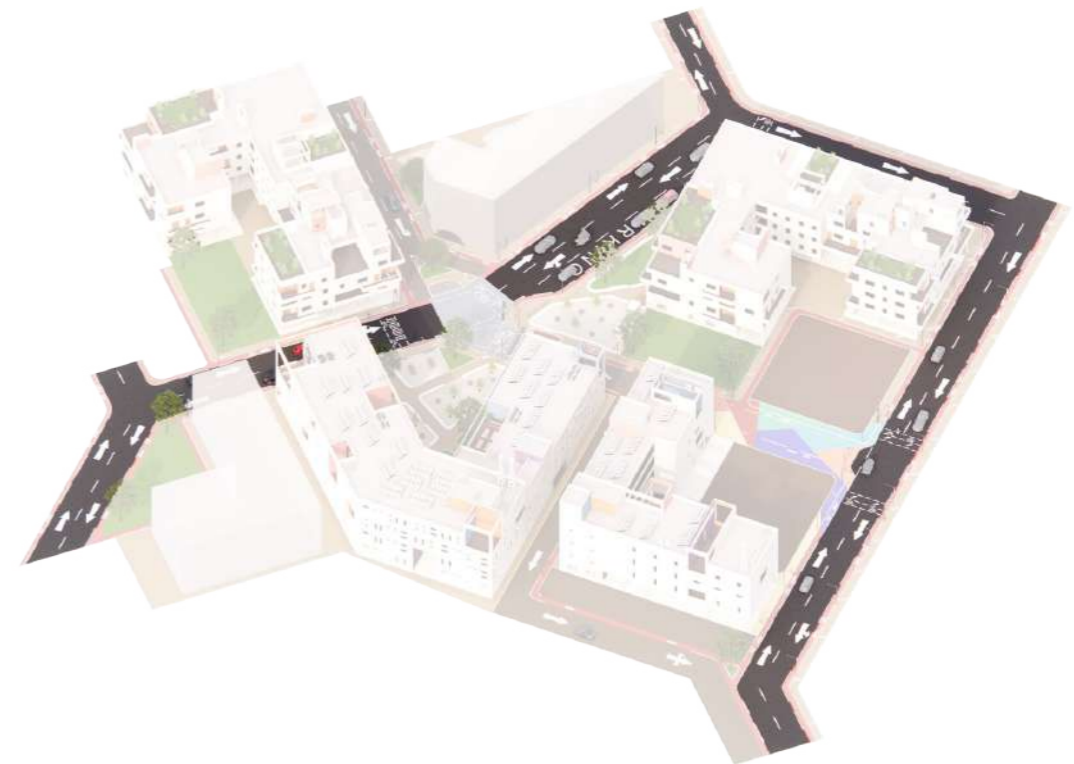
Working Model:
The block model taking shape with its voids and colors along with the positioning on the site.





Main Road: Single lane-Two way traffic road

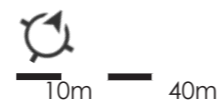
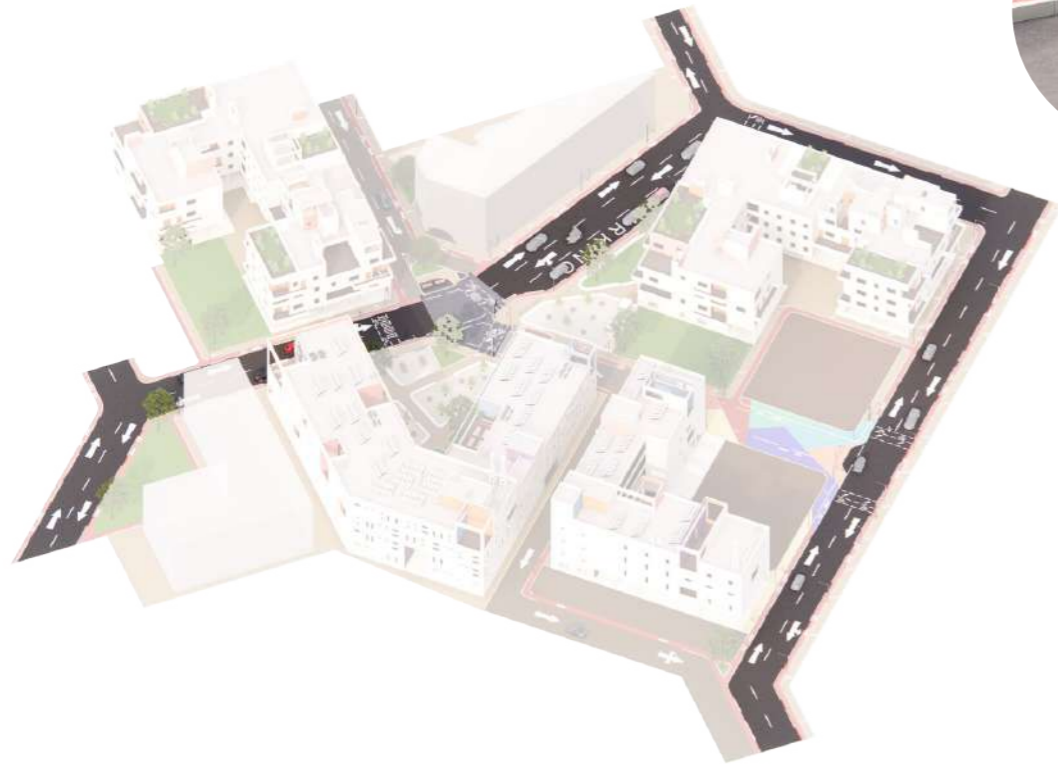
The road connecting the neighborhood from the main route designated within the urban complex that serves as a connection for different neighborhoods.





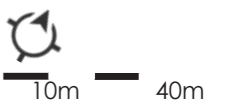
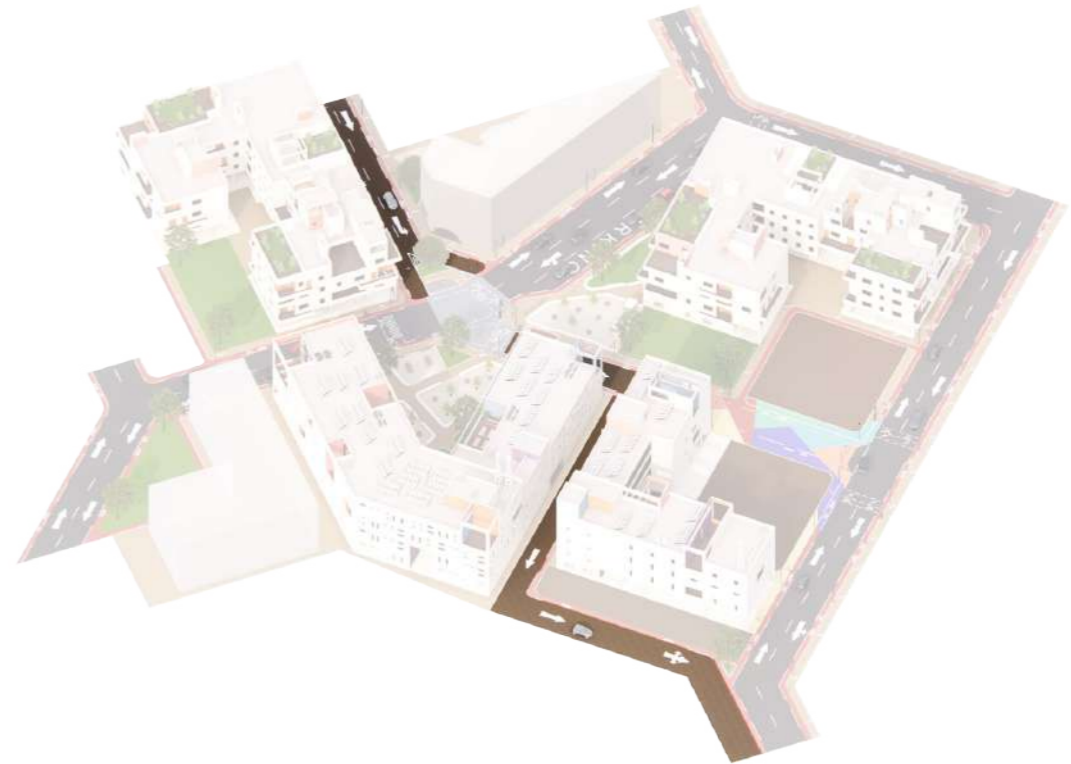
Junction: Sloped raised junction with sufficient abbrasive resistance

The junction is intended to slow down the traffic by having it raised at the pedestrian walkway level. The material to be pavered stones with sufficient abbrasive resistance.



Internal roads: Drive Slow areas

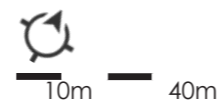
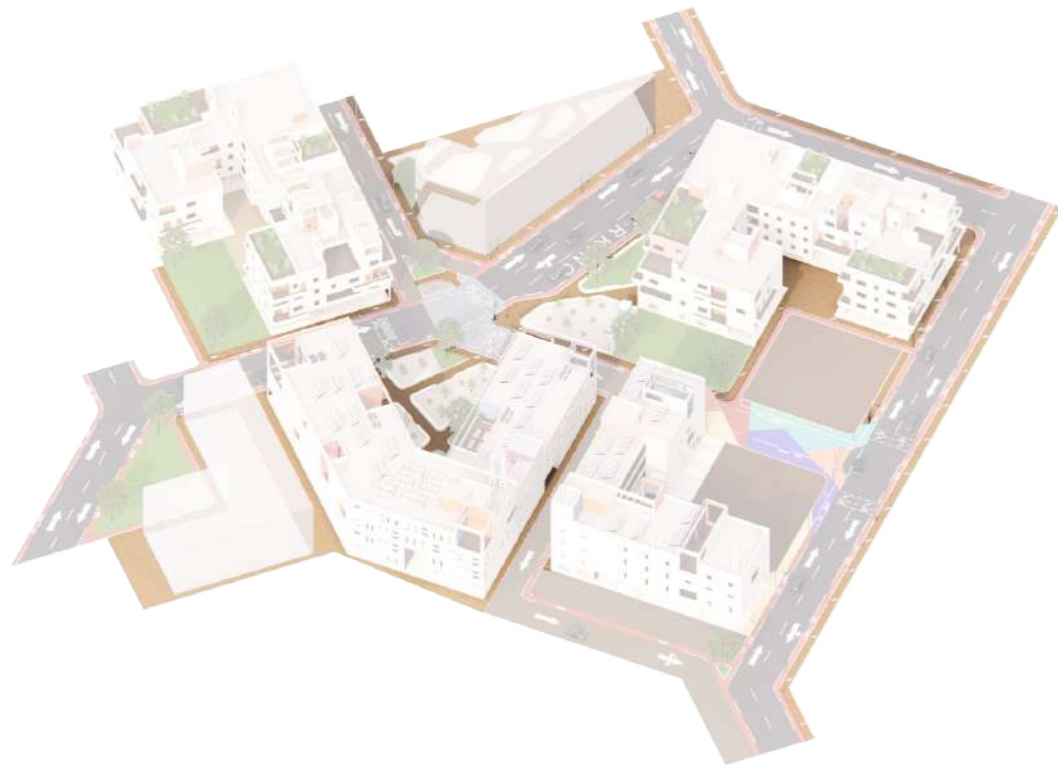
The internal road network is intended to slow down the traffic further as these roads enter into the more interiors and pedestrian prioritised areas.





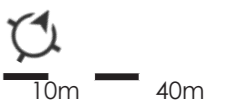
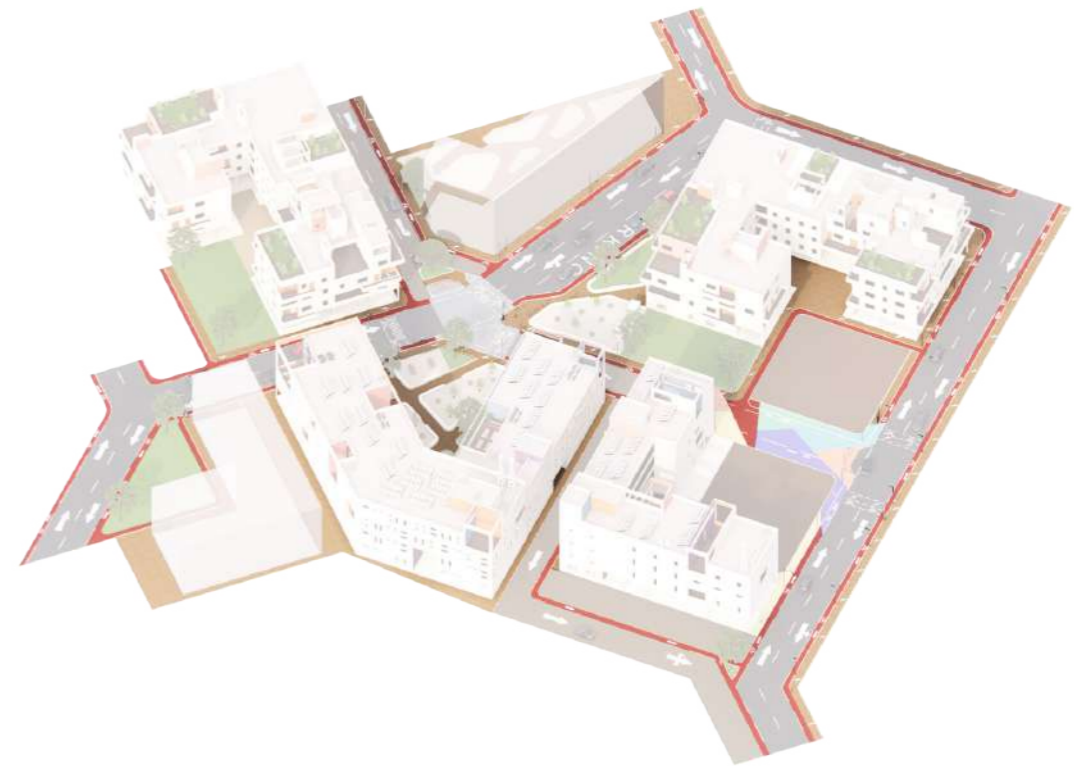
Pedestrian Walkways

The pedestrian walkways loop around the built and unbuilt areas making it accessible and pedestrian friendly neighborhood with efficient and desired crossings.



Cycle Track

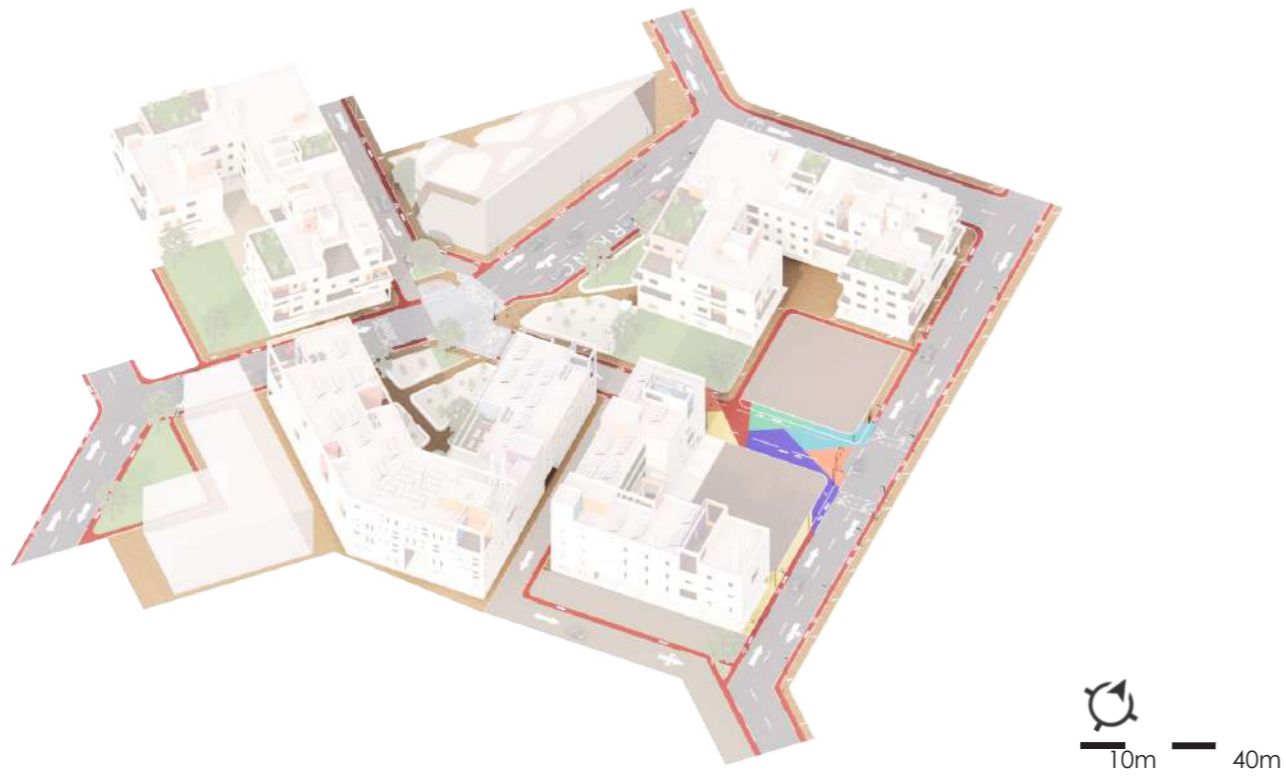
The pedestrian walkways area followed by cycle tracks running parallel to them but on a lower level matching up with the vehicular driveways. The cycle track loops around the spaces with parallel pedestrian walkways.





Dedicated Pedestrian Only Zone

The pedestrian walkway broadens itself in the area between the housing and a building for the film and art school. This area is predominately a pedestrian only zone with only cycle track passing through it.





Street Section AA'

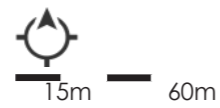
Single lane two way traffic road

Cycle track

Cycle track

Pedestrian Walkway

Pedestrian Walkway



Street Section BB'

Single lane one way traffic road

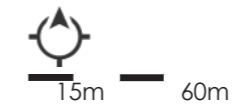
Cycle track

Cycle track

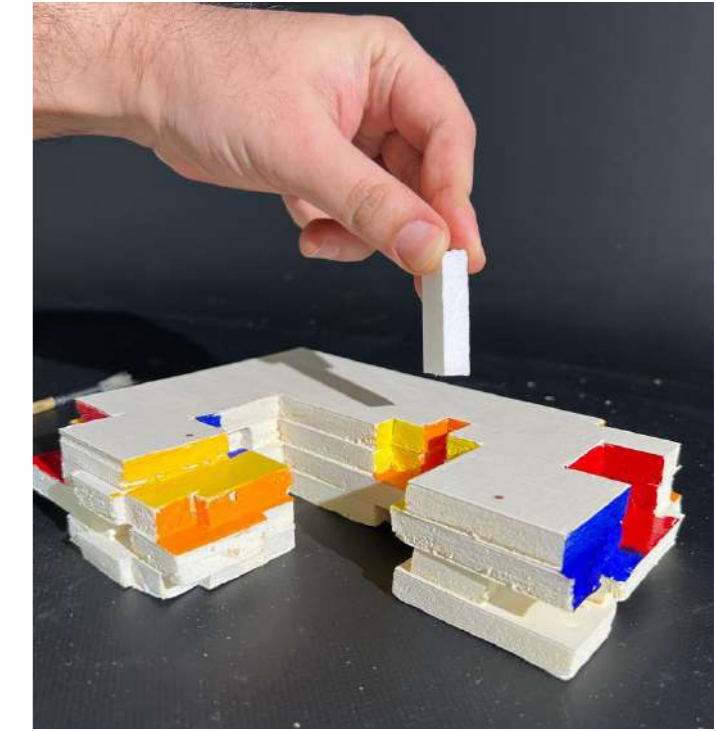
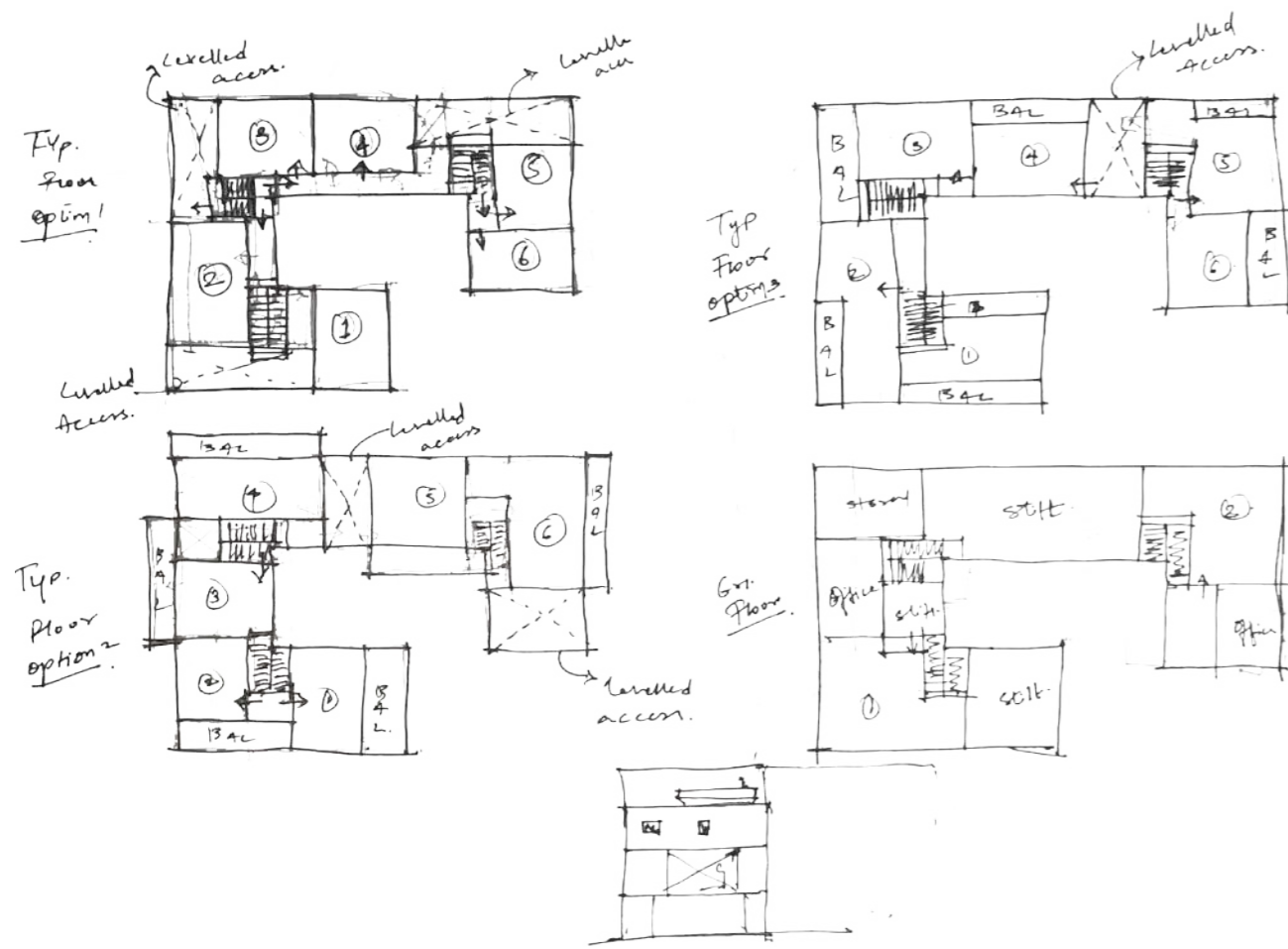
---Plaza/ Space for informal kiosks---

Pedestrian Walkway

Pedestrian Walkway

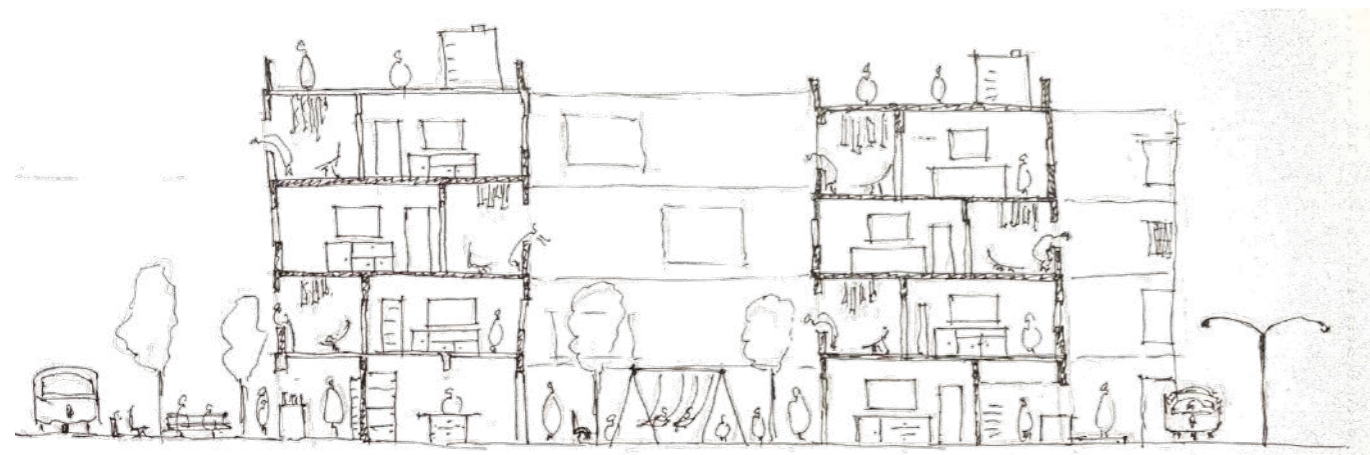


HOUSING



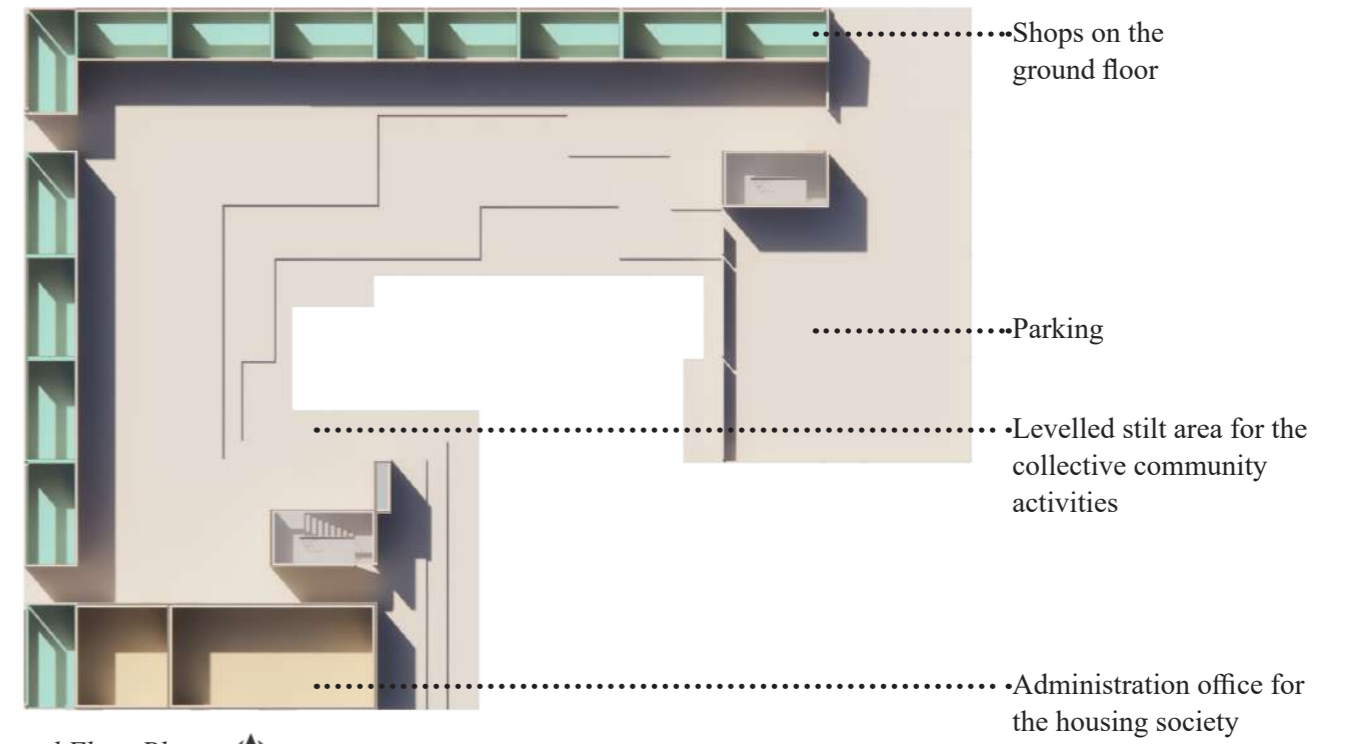
Working Model:

Attempting various options for generating the voids as per the precedents and the concept along with the play of colors in the housing block.




Housing

The housing is a combinatio of alternating balconies and intermediate terraces with roof gardens. The design is intended to maintain the cohesive relation within the families living in these apartments and ensuring a community living atmosphere.



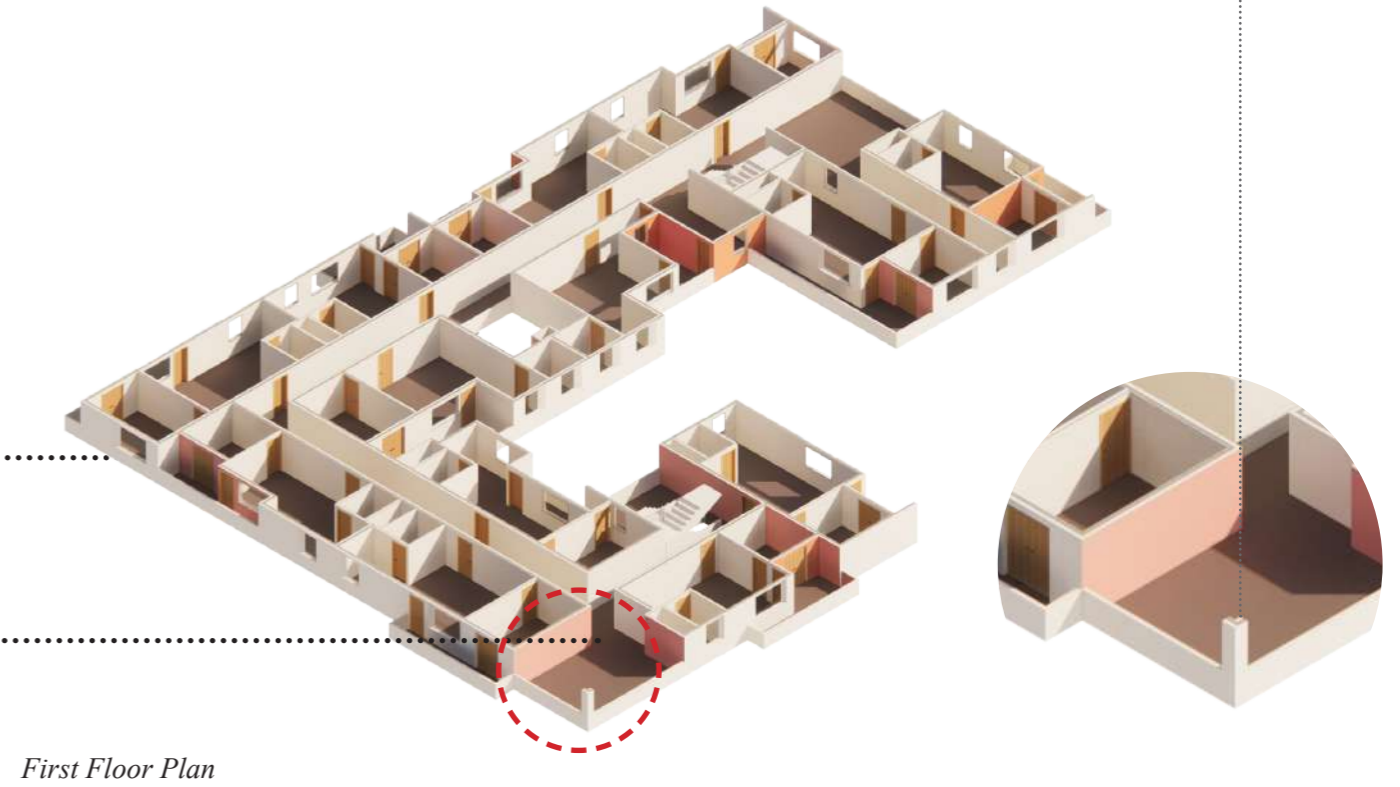
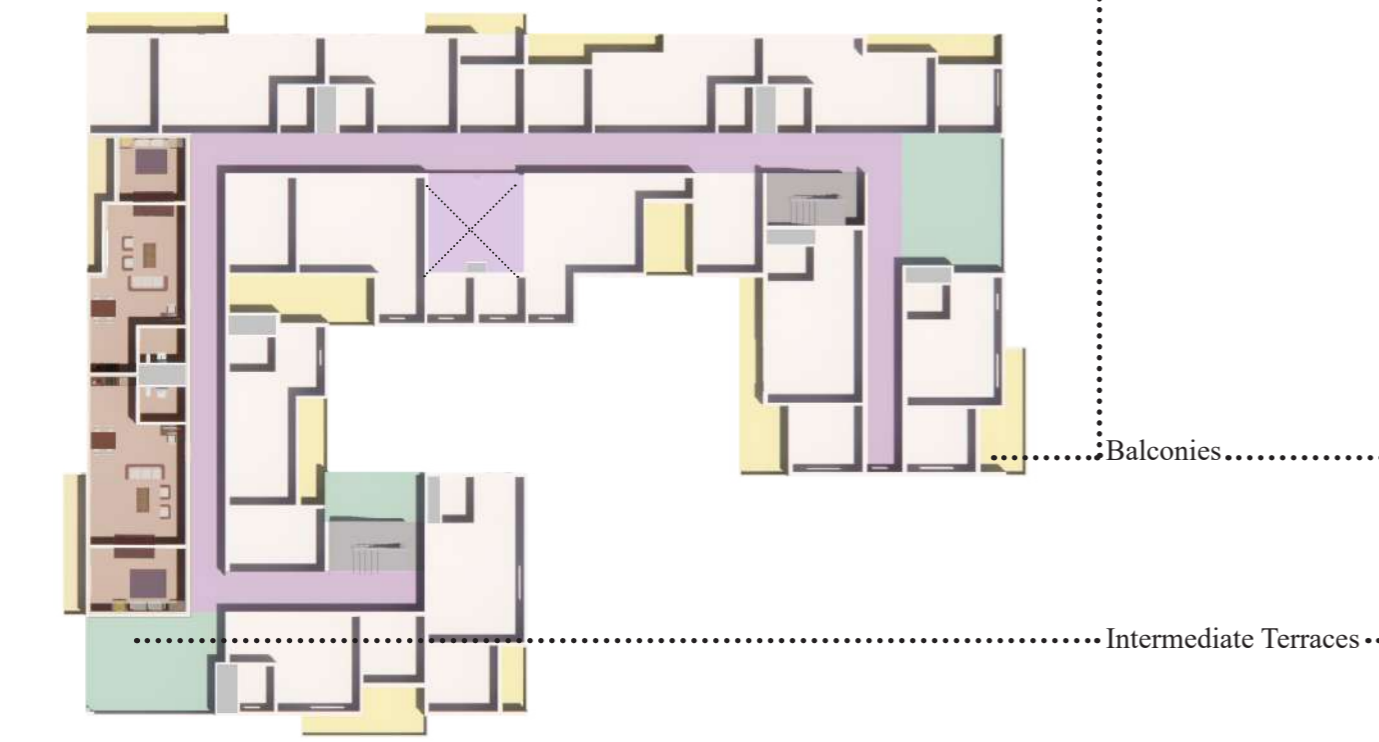
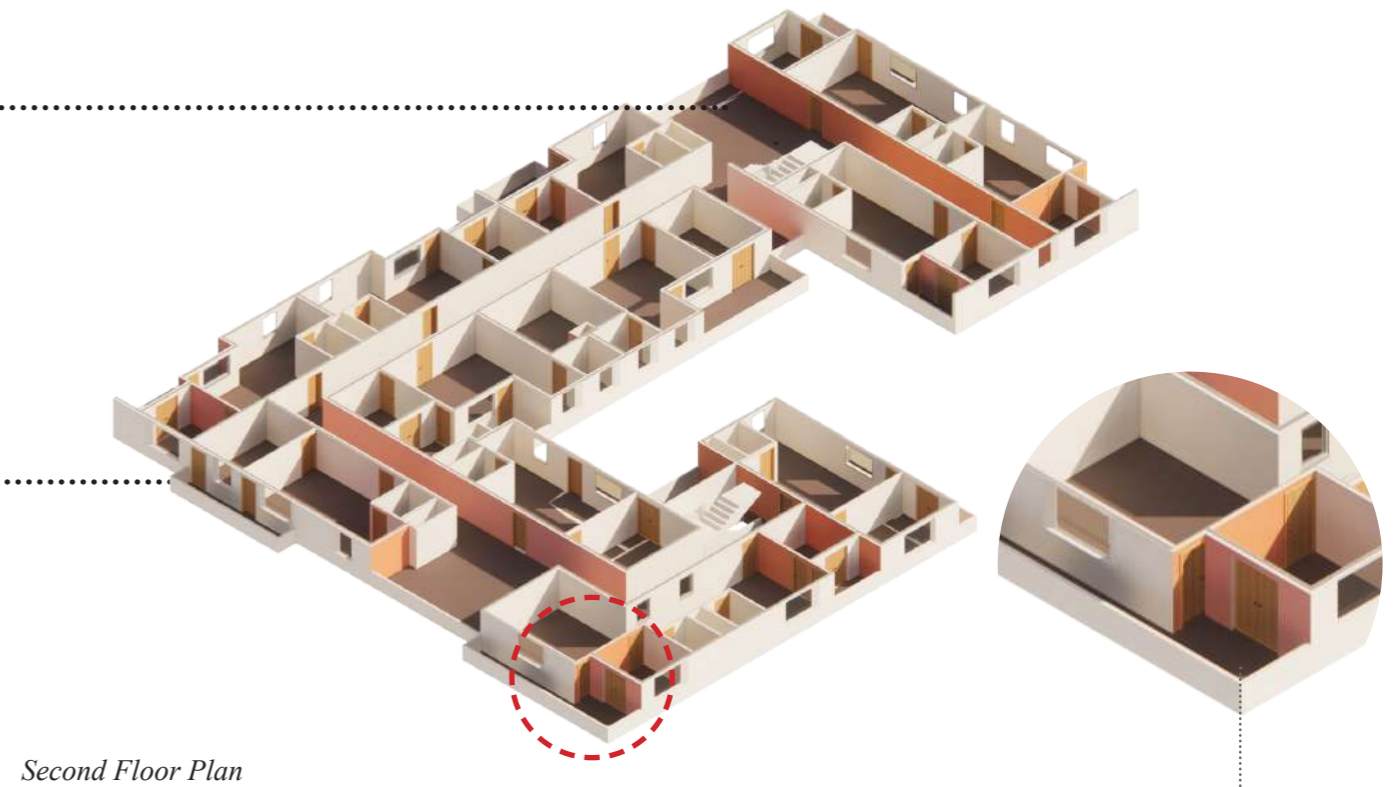
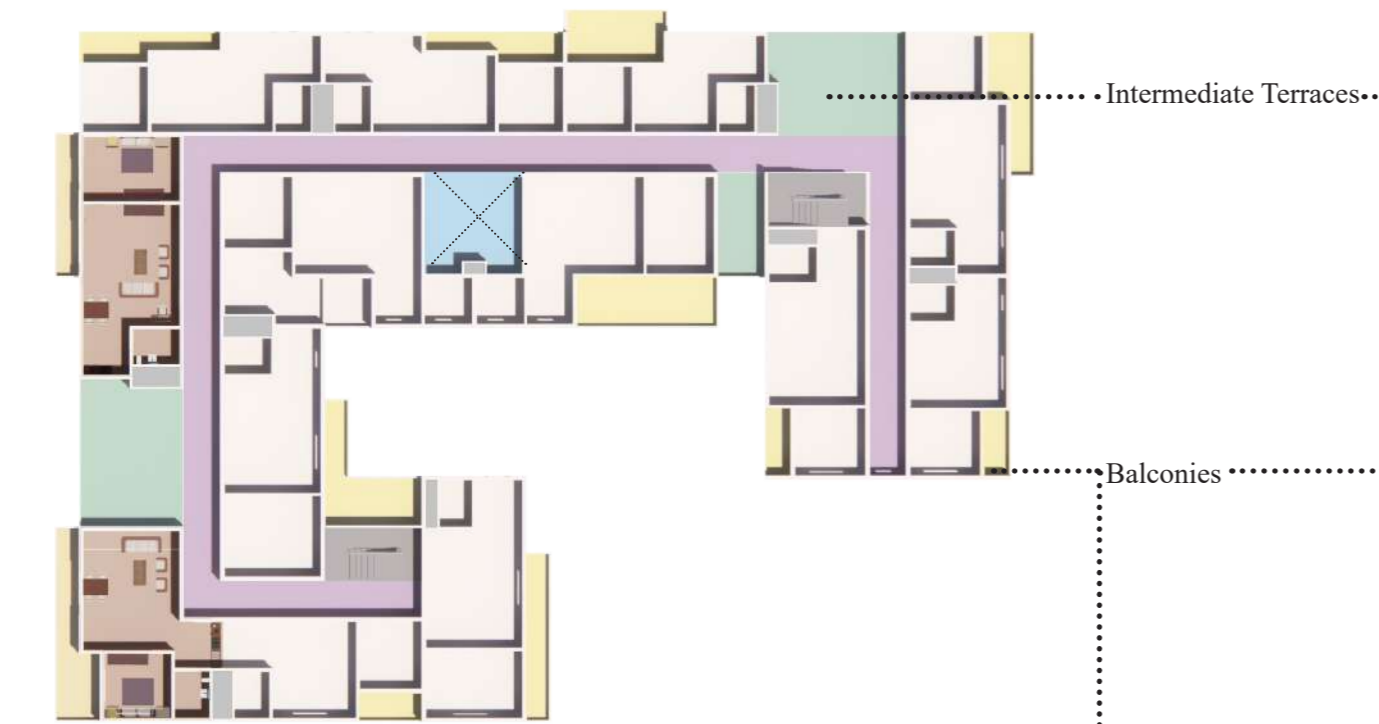
Ground Floor Plan 
 2m 8m




 10m 40m

Housing

The intermediate terraces alternating on the floors from 1st floor are provided considering the community activities within the housing blocks that could also double up as a meeting place for the families staying within. The alternating balconies on every floor provide a sense of privacy at the same time in a housing block that attempts to define community living and bring essence of the old chawl system in a more habitable and safer environment. The shops on the ground floor contribute to the economic sustainability of the urban complex



*Colors in the plan are for indicative purposes only. They do not correspond to the colors of the spaces.

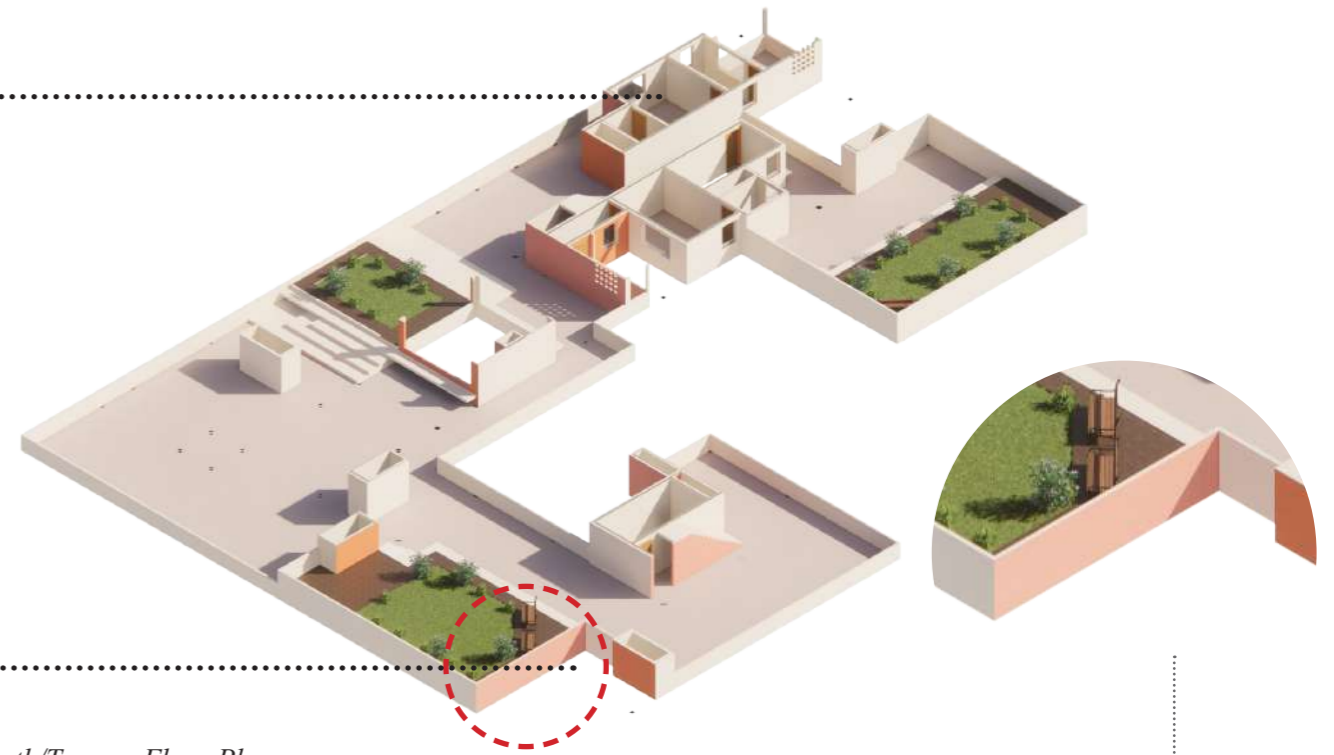


2 Bed apartments
with double height
balconies

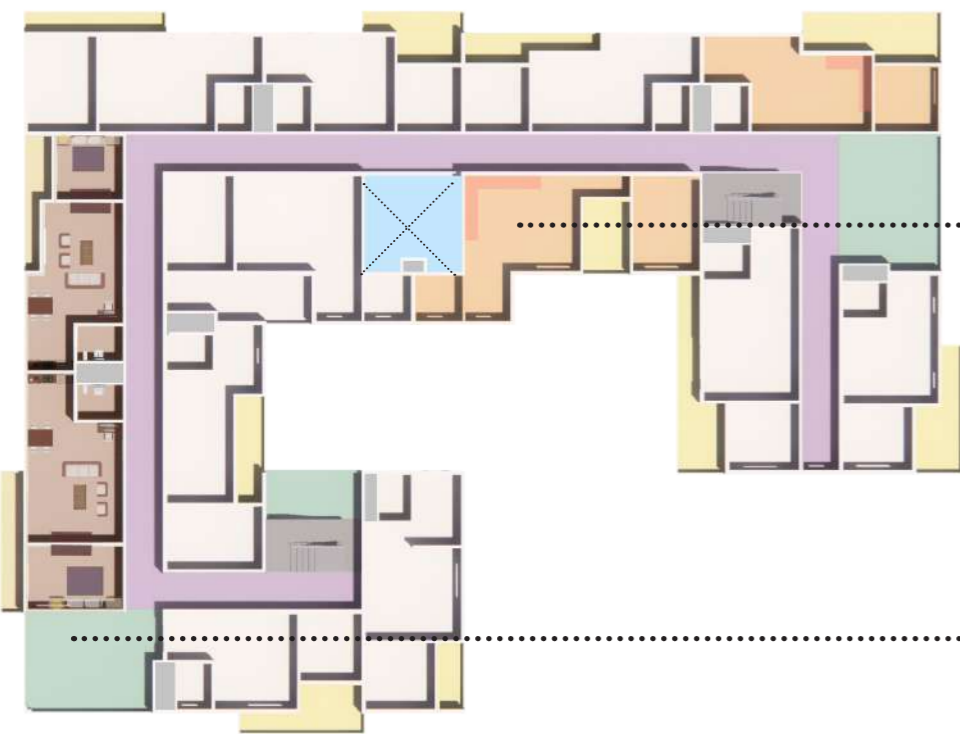
Intermediate Terraces

Fourth/Terrace Floor Plan

2m 8m



Fourth/Terrace Floor Plan

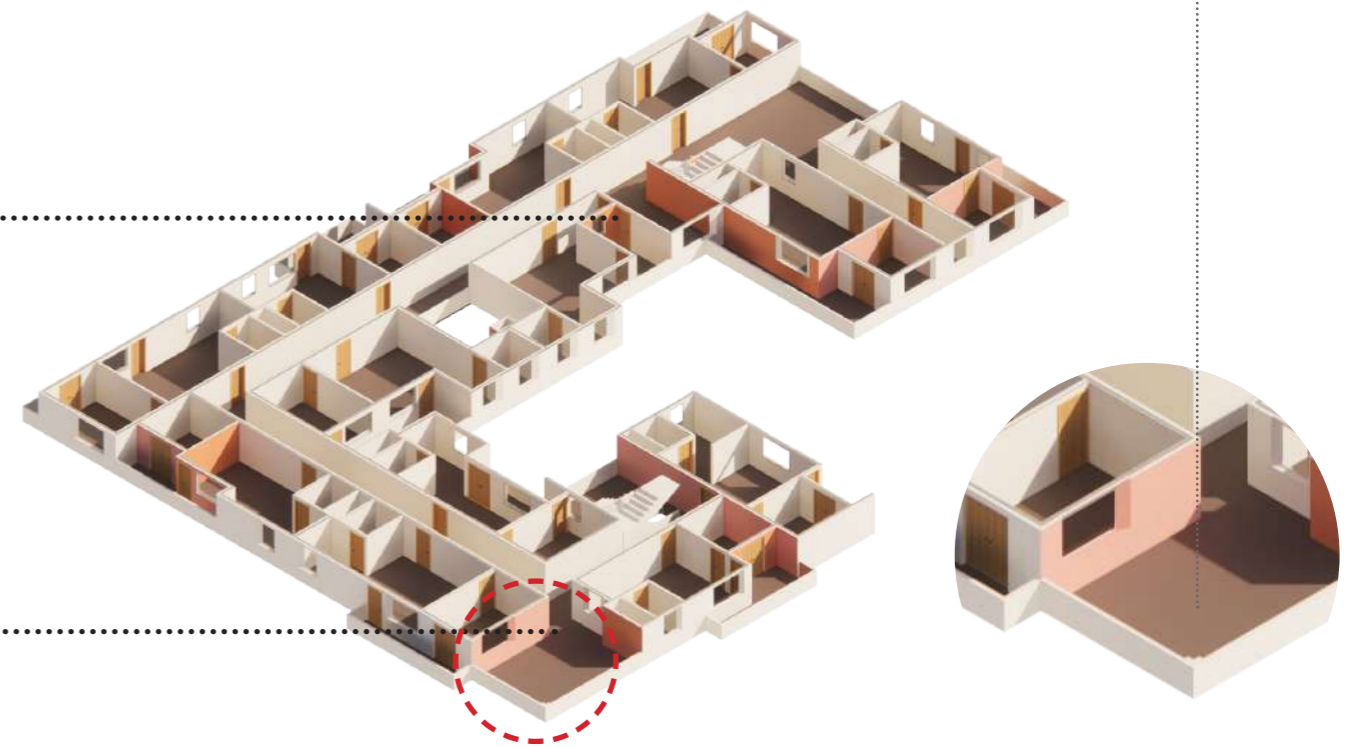


2 Bed apartments
with double height
balconies

Intermediate Terraces

Third Floor Plan

2m 8m



Third Floor Plan

*Colors in the plan are for indicative purposes only. They do not correspond to the colors of the spaces.



South Elevation



North Elevation



East Elevation



West Elevation



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*linktree





'I made that artwork on the wall there.'



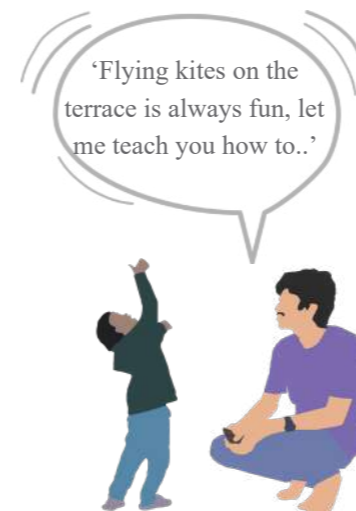
'Let's grab some snacks before we head home upstairs.'

*linktree

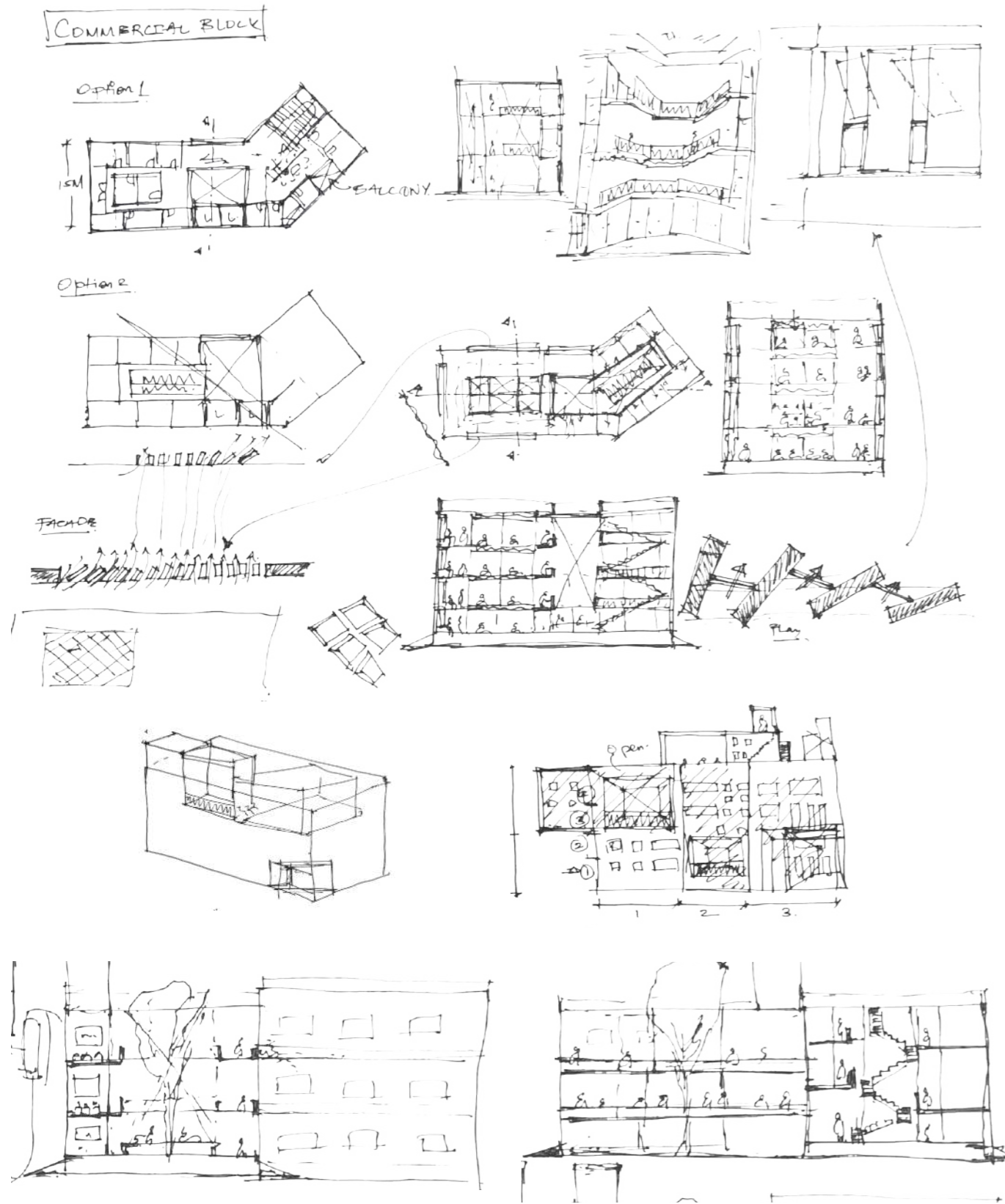




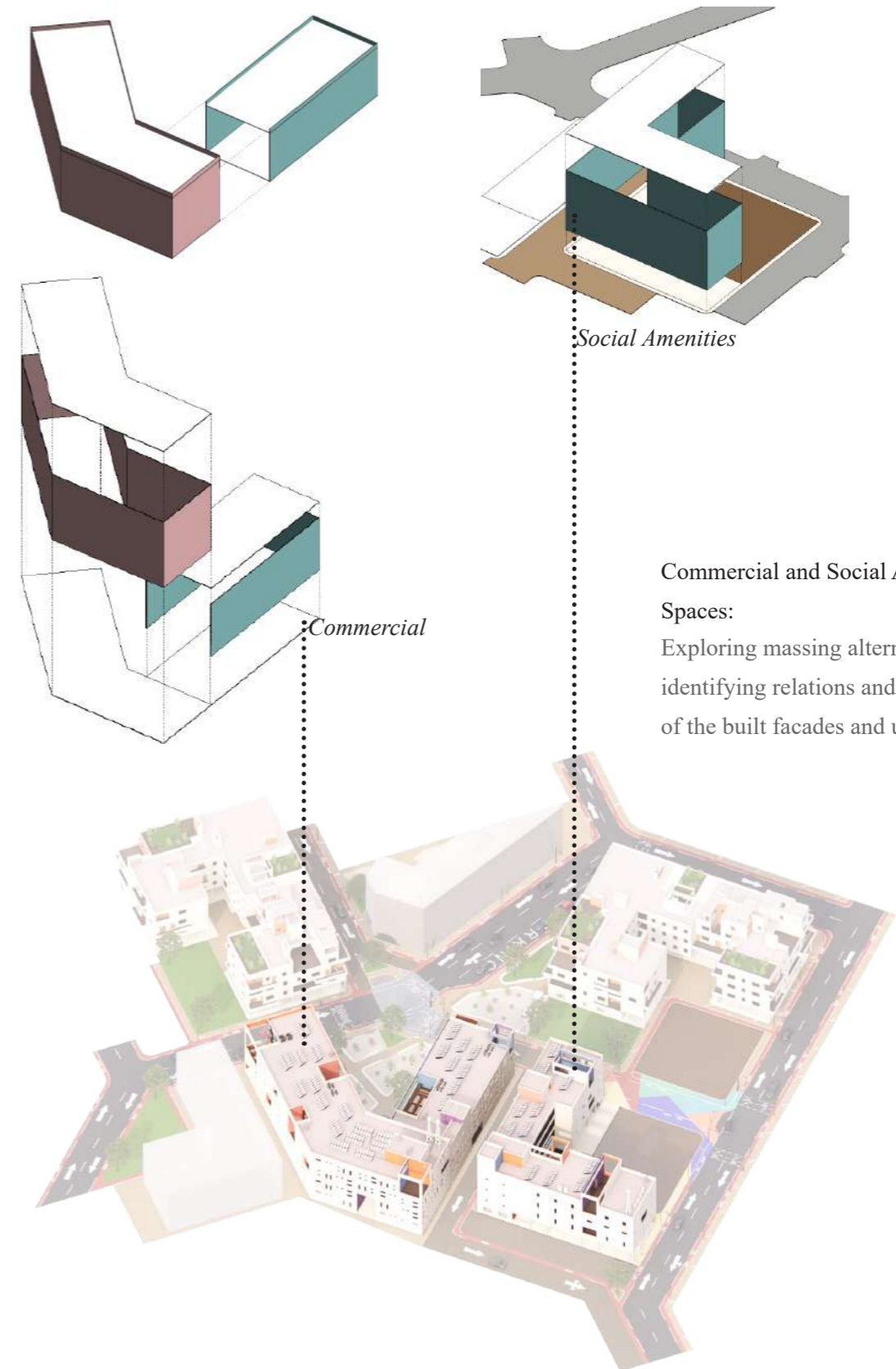
*linktree



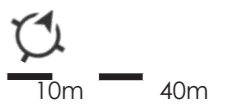
COMMERCIAL + SOCIAL AMENITIES

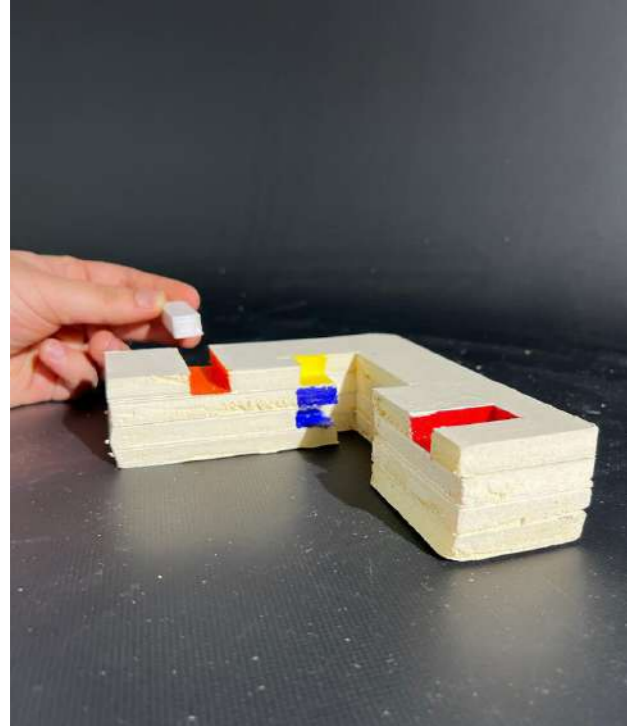
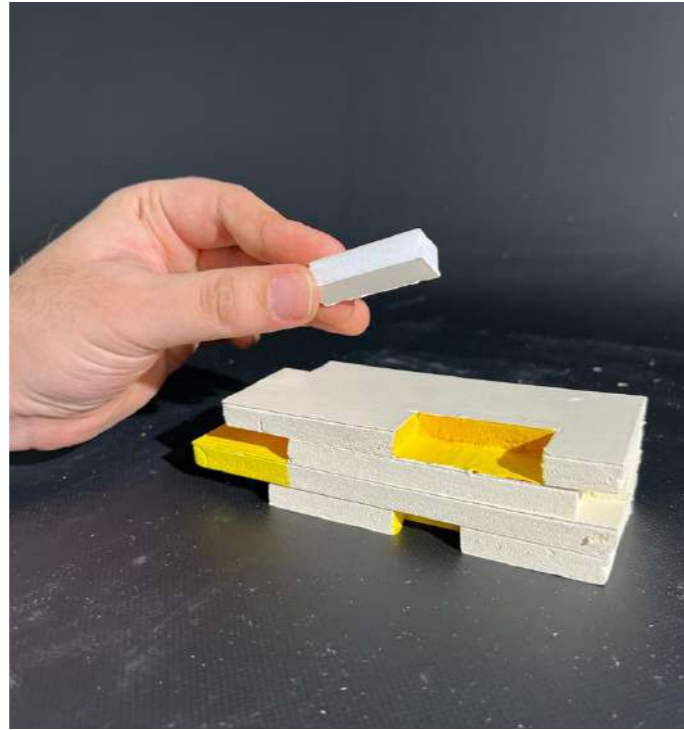
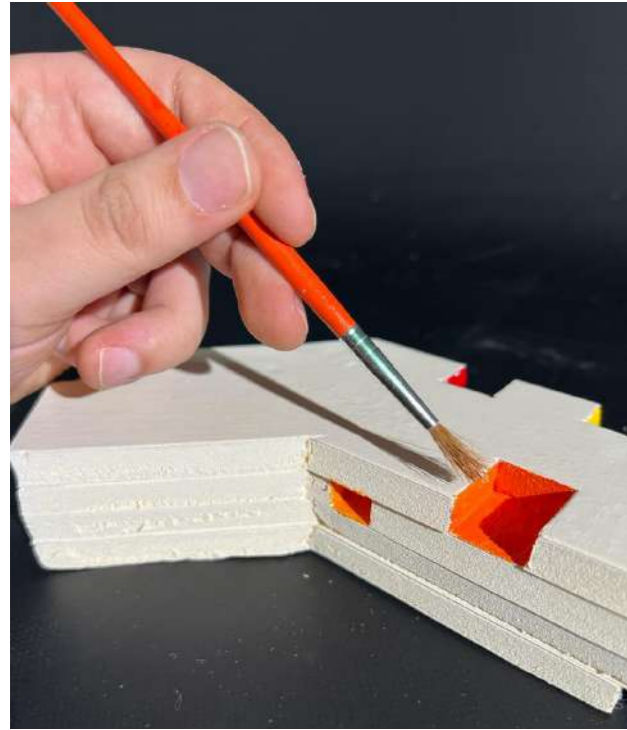


Working Sketches:
Brainstorming ideas on navigating the options and alternatives for the internal circulation and facade.



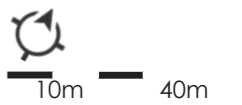
Commercial and Social Amenities's Spaces:
Exploring massing alternatives for identifying relations and co-dependencies of the built facades and unbuilt spaces.





Working Model:

Attempting various options for generating the voids as per the precedents and the concept along with the play of colors in the commercial as well as the school block.





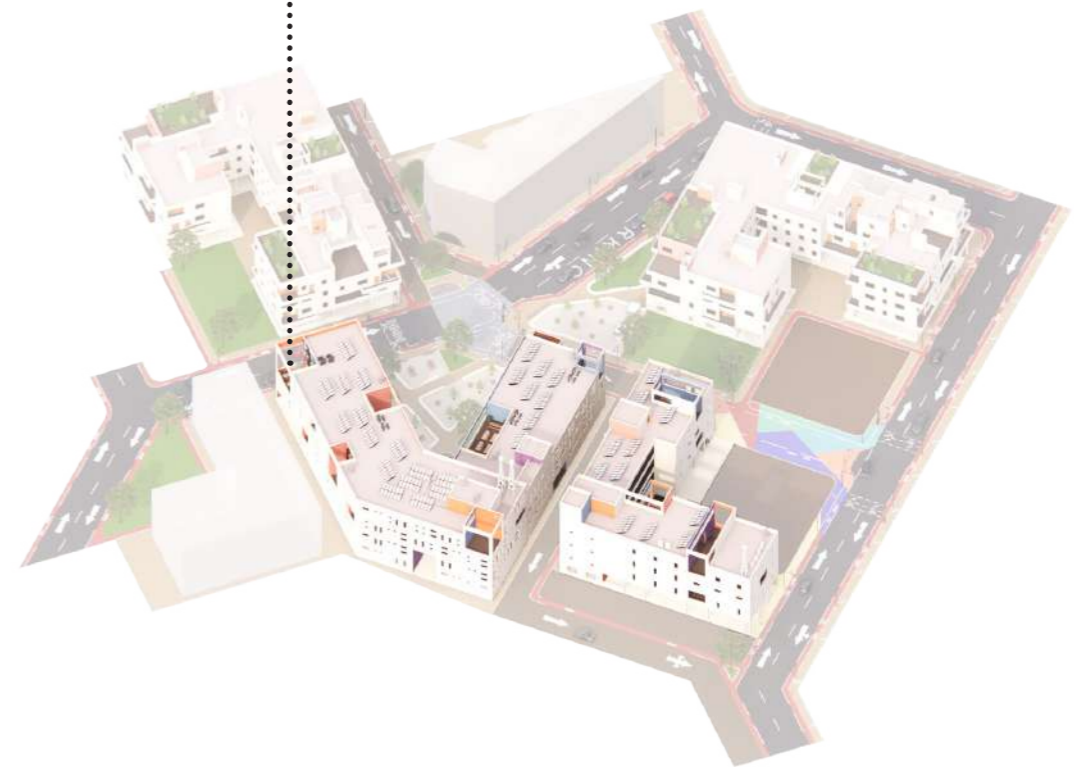
Cafe and restaurant in the commercial block, especially on the open air terraces.

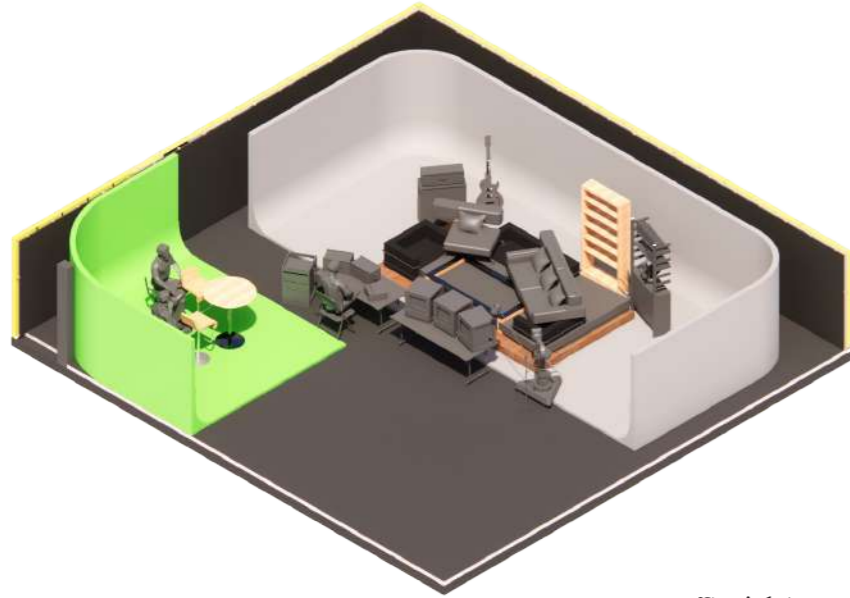


Ref.: Rental property warehouses in Mumbai

Commercial:

The commercial structure intends to be function as a multipurpose shopping center, equipment store for the proposed filming area, property warehouses for the filming activity along with restaurants and cafes that also spill into the terraced spaces.

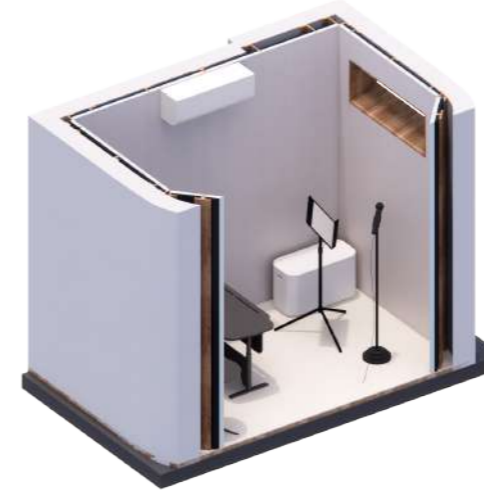
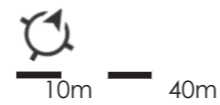
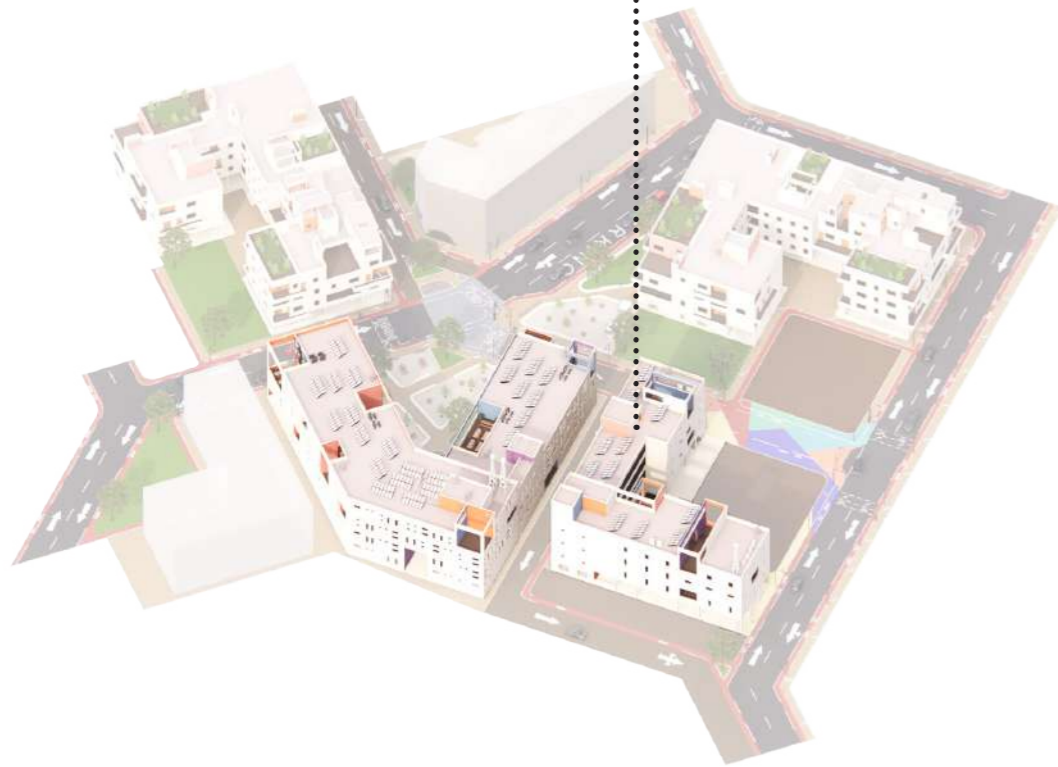




A Atypical shooting space in the building

Social Amenities:

This building would consist of a specialised school for the community that would specifically orient itself to teach film making and art.

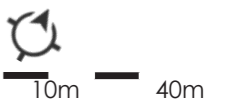
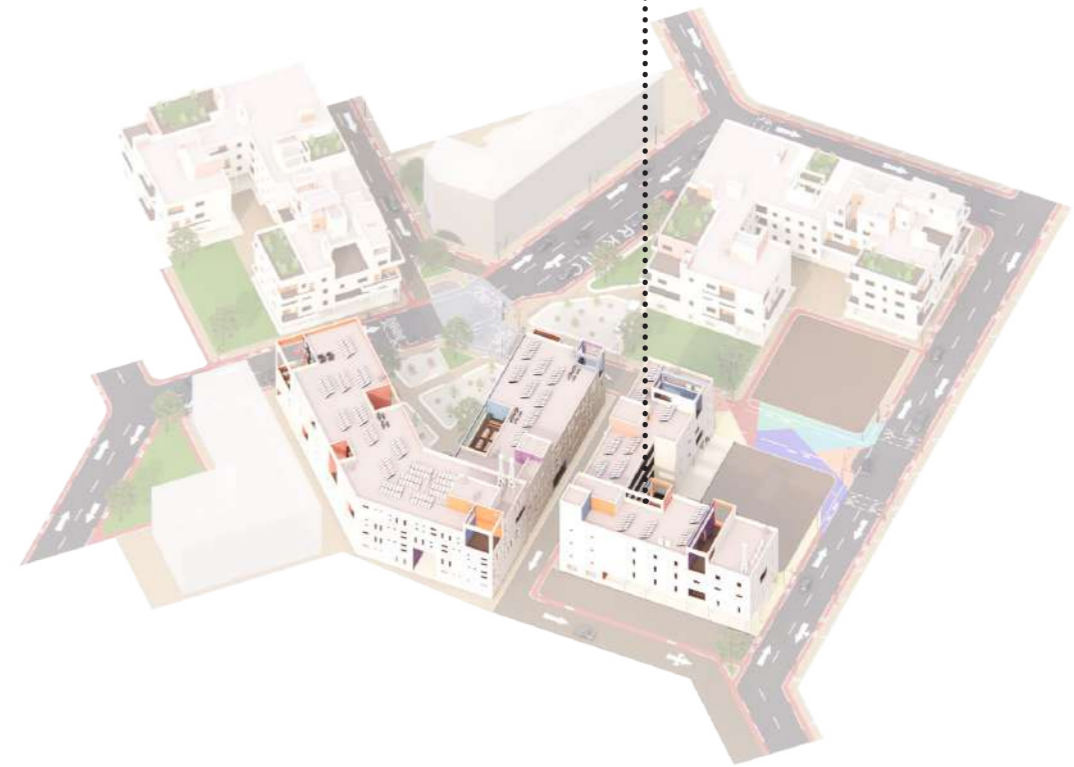


A typical recording studio in the building



Social Amenities:

A holistic experience of learning aesthetics along with technical side of the film making and production. These spaces can turn into practical commercial utilisation over the holidays and weekends, which could also benefit the employment in the neighborhood.



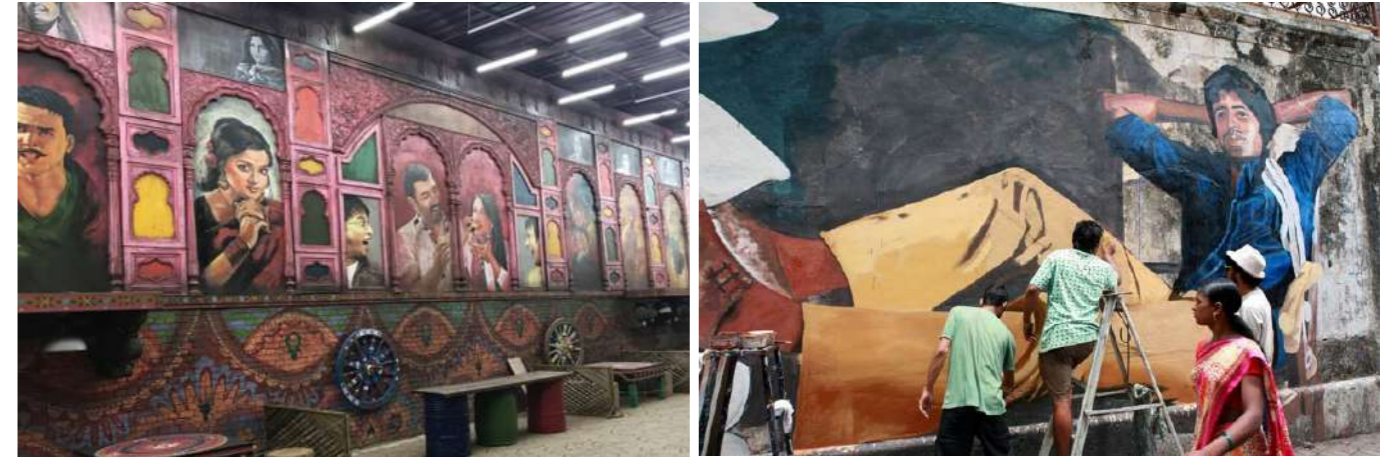
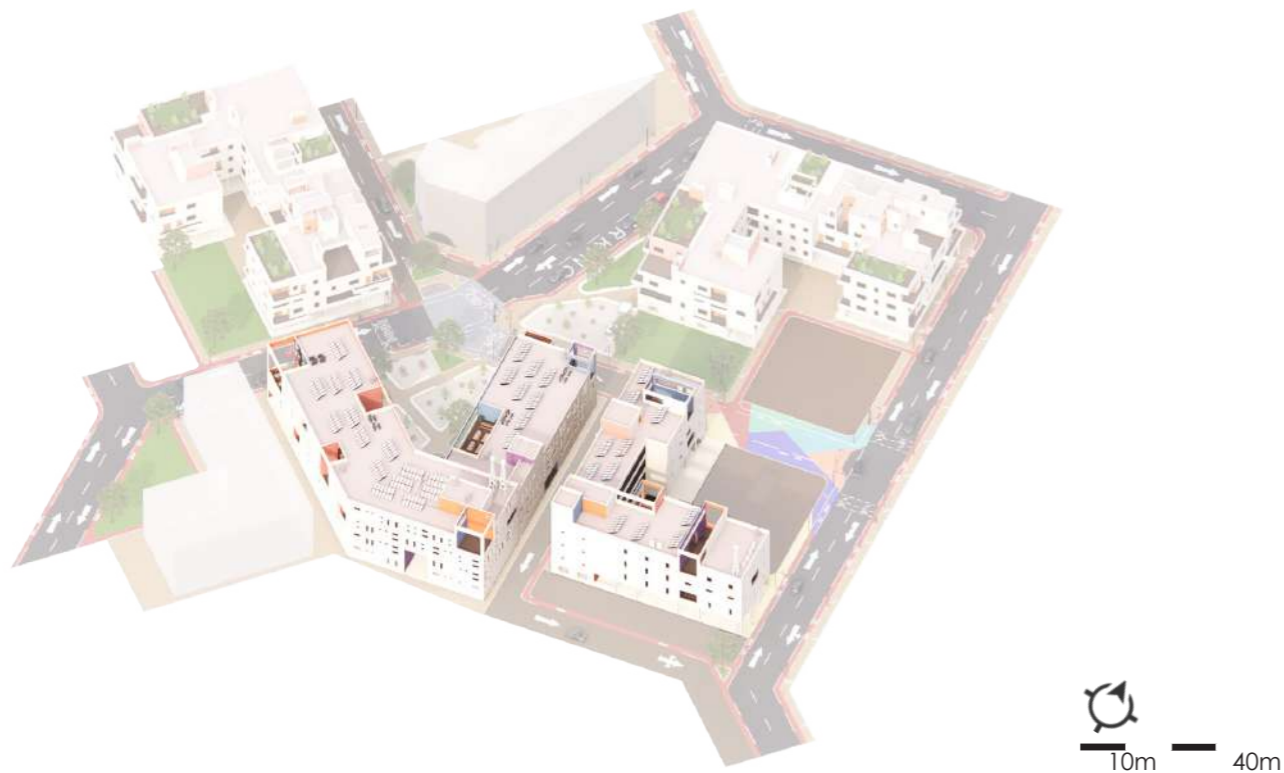


Ref.: ND's Film World, Mumbai, India

Reference suggesting an informative and interactive exhibit displaying the film making process

Commercial and Social Amenities:

Both the structure could potentially host exhibitions on student's works and display the history of film making as a learning experience.



Ref.: ND's Film World, Mumbai, India

Reference suggesting wall art decorated by local artists showcasing their talents.

Ref.: Wall painting art by Ranjit Dahiya, Mumbai

Commercial and Social Amenities:

Facades and walls of the structures could be explored by the learners and students of the community to display their talent and could help boost a sense of economic as well as social sustainability.





'Lets meet herer and we will pick up a few things before lunch for the shoot'



**linktree*



'I made that art work on the wall there'

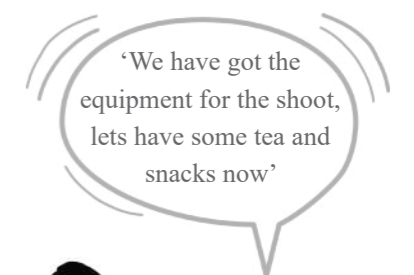


'Daddy, I also wanto take up a course in films and art in this building'





**linktree*





**linktree*





To understand economic impacts of urban regeneration and consequent gentrifications particularly with the process of rapid urbanization, and as a supplementary discourse for this design project, can read more at my dissertation:

'The Economic Implications of urban regeneration: The gentrification of Madh Island, Mumbai'

-Malhar A. Ambekar

**linktree*



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