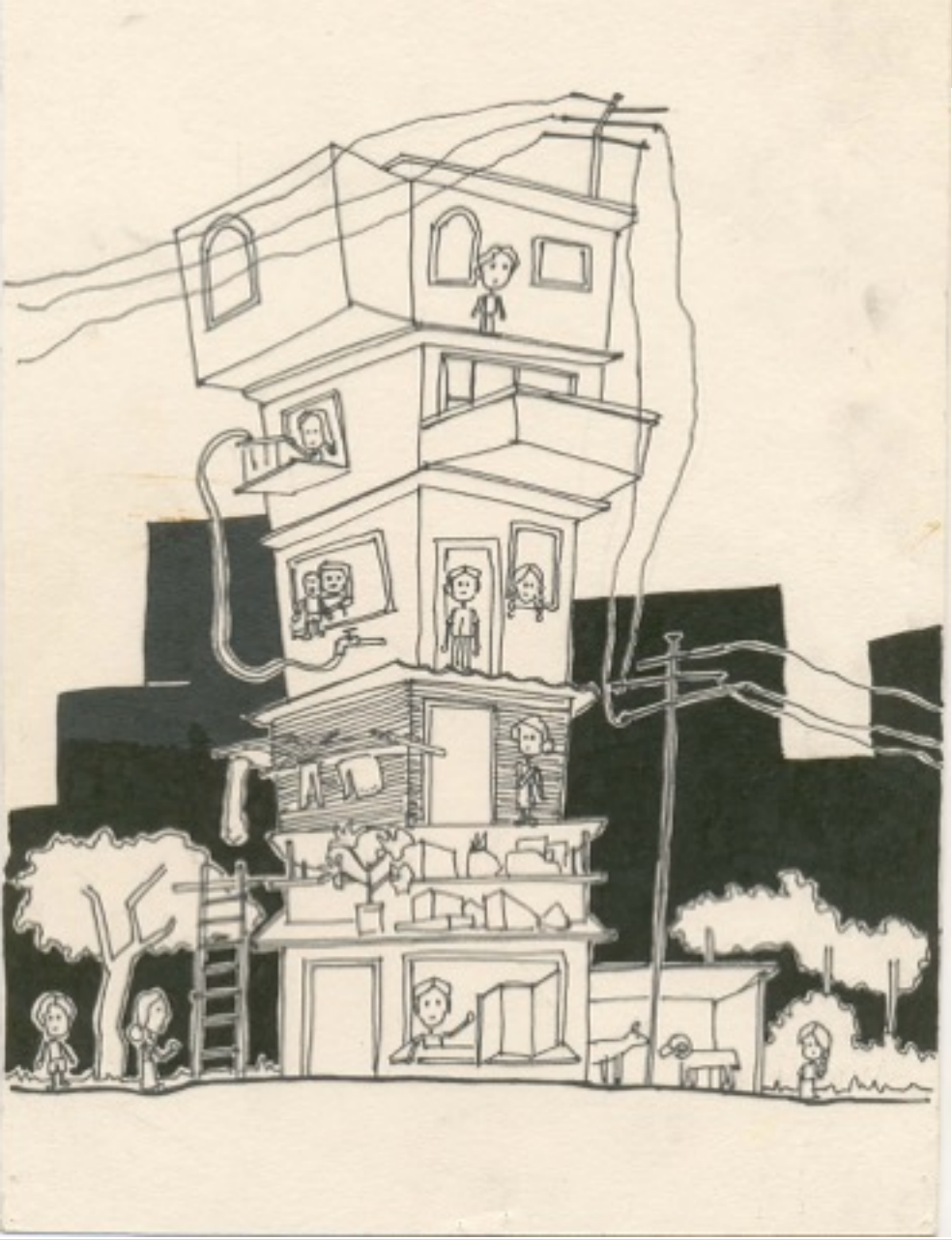
RESEARCH DIRECTED TOWARDS PEDAGOGY & COURSE PREPARATION AT KRVIA

AINSLEY LEWIS

Source: KRVIA Fourth year housing -Apurva Talpade



Source: KRVIA Fourth year housing -Apurva Talpade

ground floor plan

first floor plan

KRVIA

Training & Research Centre, Pune

12th March 2018

B_IN_U_COM

Funded by the Erasmus+ Programme of the European Union

12-13 NALASOPARA

It would like to explore the role which architecture could have in either enhancing or simulating such environments in a planned manner. In doing so, the studio would have the following architectural challenges:

Typological - It would allow for the exploration of diverse typological systems which can cater to such forms of living.

Process – It would help the student realize the importance of transformation and change which such architecture goes through in time. The students would have to evolve techniques of representing such architecture which is in a state of constant evolution.

Affordable living environments – While it would explore planned strategies of providing affordable housing it would also explore the architecture of affordable living environments which has been central to contemporary concerns of sustainability.

13-14 NAVI MUMBAI HOUSING TOWARDS A SUSTAINANLE FUTURE

The studio aims at developing contextual housing delivery systems and subsequently experimenting with various typologies and architectural languages for these.
……transcending practicality to embrace aesthetic and psychological issues.

14-15 NASHIK STUDIO, BUILDING ALTERNATIVE FUTURES FOR HOUSING

The aim of this housing studio would be to design sensitive and relevant forms of housing in Nashik, embracing new delivery systems, understanding the roles of local actors in its production and being conscious to the production of cultural identities.

16-17 DHARAVI

The interest of this unit will be typology, documenting & analysing existing types and then projecting new types as a counter to the dominant SRA model of re-housing, current prevalent in the city of Mumbai.

COURSE PREMISE:

The KRVIA is currently engaged in a research program "BinuCom- Building Inclusive Urban communities" that attempts to make institutions of higher education aware of all the issues related to informal settlements.

PEDAGOGIC INTENT:

In the ninth semester at KRVIA the design studio intends to focus on housing in Informal settlements in the city of Mumbai. The key question of this studio is given the existing rules/frameworks and parameters of SRA schemes are there alternate typological models possible that respond to who is being housed and where in a more specific and humane manner. The responses can then be used to critique and question existing bylaws and frameworks.

AIM

The interest of this unit will be typology, documenting & analysing existing types and then projecting new types as a counter to the dominant SRA model of re-housing, current prevalent in the city of Mumbai.

Organisational Structure

team

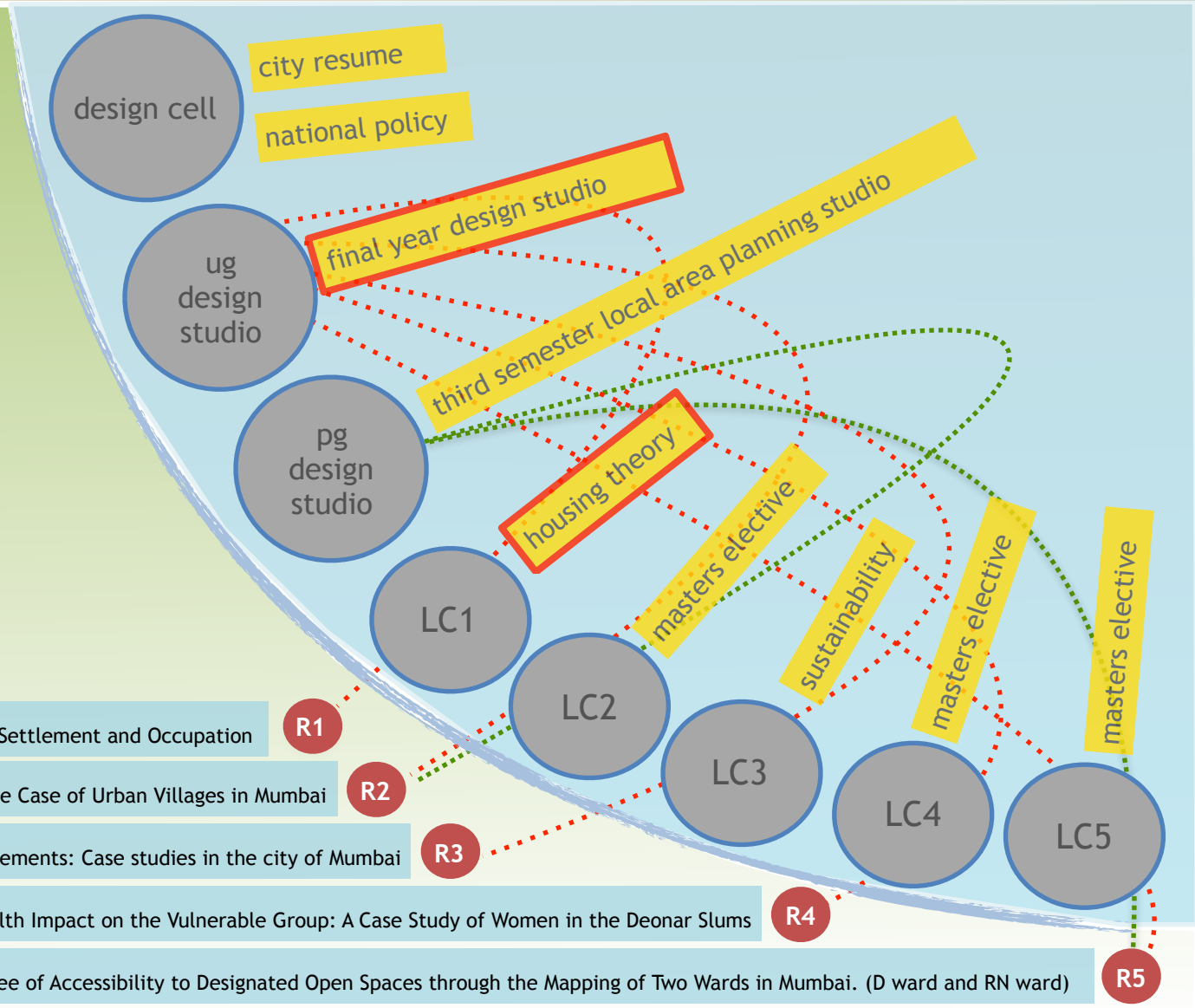
- Ainsley Lewis
  Co ordinator
- Aneerudha Paul
- Manoj Parmar
- Rohan Shivkumar
- Ashok Lall

researchers

- Omkar Nandlaskar
- Uttara Ramakrishnan
- Nishant Pai

allied design course

- Hussain indorewala
  Housing Theory: Understanding Urban Settlement and Occupation — R1
- Shweta Wagh
  Communities, Claims and Conflicts: The Case of Urban Villages in Mumbai — R2
- Kimaya keluskar
  Sustainable livability for informal settlements: Case studies in the city of Mumbai — R3
- Mamta Patwardhan
  The Environment Degradation and Health Impact on the Vulnerable Group: A Case Study of Women in the Deonar Slums — R4
- Abhijeet Ekbote
  Developing a Tool to Measure the Degree of Accessibility to Designated Open Spaces through the Mapping of Two Wards in Mumbai. (D ward and RN ward) — R5



Course:	**Housing Theory: Understanding Urban Settlement and Occupation**	
Duration:	12 Lectures + Discussion Seminars	
Marking:	Internal - External	
Faculty:	Faculty: Hussain Indorewala	
Pedagogic Intent:	The housing course intends to enable students to examine housing through various conceptual frameworks, and understand both historically and in the contemporary period the various contestations over its meaning and value, its mode of production, its use and control, its form and shape, and access and inclusion. It will equip students with the ability to frame and formulate the question of urban dwelling from the perspective of public policy, and develop the ability to critique public policy through an understanding of the theory and practice of urban settlement and occupation.	
Methodology	Weekly lectures will be supplemented by structured discussions on the themes presented, enriched by course readings that will be provided to students.	
Schedule:		
Week No	**Lecture / Discussion Topic**	**Compulsory Readings**
1	**Introduction: Understanding Urban Settlement and Occupation**	
2	**Housing and *Dis*housing** A Social History of Dwelling in Bombay	1) Mahadevia, Darshini, and Harini Narayanan. "Shanghaing Mumbai: Politics of Evictions and Resistance in Slum Settlements." In *Inside the Transforming Urban Asia: Processes, Policies and Public Actions*, 549–589. Concept, 2008. 2) Arnold, Caroline E. "The Bombay Improvement Trust, Bombay Millowners And The Debate Over Housing Bombay's Millworkers, 1896-1918." *Essays in Economic & Business History* 30 (2012). 3) Indorewala, Hussain, Shweta Wagh, Uttara Ramakrishnan, and Omkar Nandlaskar. "City Profile Mumbai." KRVIA + BINUCOM (forthcoming), 2016.

3	**Deconstructing "Slum" Discourse** Views *of* and views *from* the "Slum"	1) Ghertner, Asher.,[Chapter 1] of *Rule By Aesthetics: World-Class City Making in Delhi*. New York, NY: OUP USA, 2015. 2) Björkman, Lisa. "Becoming a Slum: From Municipal Colony to Illegal Settlement in Liberalization-Era Mumbai." *International Journal of Urban and Regional Research* 38, no. 1 (2014): 36–59. 3) Nijman, Jan. "India's Urban Future: Views From the Slum." *American Behavioral Scientist* 59, no. 3 (March 1, 2015): 406–23.
4	**Housing by the State** Institutions, Processes, Outcomes	1) MMRDA. [chap 8: Shelter Needs and Strategies] of "Regional Plan for Mumbai Metropolitan Region 1996-2011," 1995. 2) Patel, Shirish B. "Housing Policies for Mumbai." *Economic and Political Weekly*, August 13, 2005. http://www.epw.in/special-articles/housing-policies-mumbai.html. 3) Marcuse, P. "The Beginnings of Public Housing in New York." *Journal of Urban History* 12, no. 4 (August 1, 1986): 353–90. doi:10.1177/009614428601200403.
5	**Housing by the Market** Economics of Land and Housing	1) World Bank. "Housing : Enabling Markets to Work." The World Bank, April 30, 1993. 2) Mukhija, Vinit. "Enabling Slum Redevelopment in Mumbai: Policy Paradox in Practice." *Housing Studies* 16, no. 6 (2001): 791–806. 3) Whitehead, Judy, and Nitin More. "Revanchism in Mumbai? Political Economy of Rent Gaps and Urban Restructuring in a Global City." *Economic and Political Weekly* 42, no. 25 (2007): 2428–34. 4) Brenner, Neil, Jamie Peck, and Nik Theodore. "Neoliberal Urbanism: Cities and the Rule of Markets."
6	**Housing by the People** Agency, Self-building & Precarity	1) Frediani, Alexandre Apsan. "The World Bank, Turner and Sen: Freedom in the Urban Arena." *UCL DPU Working Paper No.136*, 2009. 2) Turner, John F. C., and Robert Fichter. *Freedom to Build*. Collier Macmillan Ltd, 1973. 3) Benjamin, Solomon. "Occupancy Urbanism: Radicalizing Politics and Economy beyond Policy and Programs." *International Journal of Urban and Regional Research* 32, no. 3 (2008): 719–729. 4) Panwalkar, Pratima. "Upgradation of Slums: A World Bank Programme." *Bombay: Metaphor for Modern India*, 1996, 121–142.
7	**Housing and Land** Property, Tenure & Rights	1) Ghertner, D. Asher. "Nuisance Talk and the Propriety of Property: Middle Class Discourses of a Slum-Free Delhi." *Antipode* 44, no. 4 (2012): 1161–1187. 2) Goldman, Michael. "Speculative Urbanism and the Making of the next World City." *International Journal of Urban and Regional Research* 35, no. 3 (2011): 555–581. 3) Handzic, Kenan. "Is Legalized Land Tenure Necessary in Slum Upgrading? Learning from Rio's Land Tenure Policies in the Favela Bairro Program." *Habitat International* 34, no. 1 (January 2010): 11–17. 4) Anjaria, Jonathan Shapiro. "Guardians of the Bourgeois City: Citizenship, Public Space, and Middle-Class Activism in Mumbai1." *City & Community* 8, no. 4 (2009): 391–406.

8	**Regulating and Deregulating Housing** Development Rights, Land Policy & Building Standards	1) Phatak, Vidyadhar K. "Regulating Urban Land." *Economic and Political Weekly*, October 22, 2005. 2) Indorewala, Hussain, and Shweta Wagh. "Discriminatory Living Standards: FSI, Tenement Densities and Building Controls for Low Income Housing in the RDDP 2016 – BlogURK," August 18, 2016. 3) Bertaud, Alain. "Mumbai FSI Conundrum: The Perfect Storm: The Four Factors Restricting the Construction of New Floor Space in Mumbai." 4) Patel, Shirish B., Alpa Sheth, and Neha Panchal. "Urban Layouts, Densities and the Quality of Urban Life." *Economic and Political Weekly*, 2007, 2725–2736. 5) Narayanan, Harini. "In Search of Shelter: The Politics of the Implementation of the Urban Land (Ceiling and Regulation) Act 1976 in Greater Mumbai." In *Bombay and Mumbai: The City in Transition*. Oxford University Press, 2003.
9	**Resettlement and Rehabilitation** Changing Forms, Persisting Trends	1) Nainan, Navtej. "Building Boomers and Fragmentation of Space in Mumbai." *Economic and Political Weekly*, 2008, 29–34. 2) Nijman, Jan. "Against the Odds: Slum Rehabilitation in Neoliberal Mumbai." *Cities* 25, no. 2 (2008): 73–85. 3) Anand, Nikhil, and Anne Rademacher. "Housing in the Urban Age: Inequality and Aspiration in Mumbai." *Antipode* 43, no. 5 (2011): 1748–1772.
10	**Housing as a Right** Struggles and Strategies	1) Castells, Manuel, [chapter 4] of *The City and the Grassroots: A Cross-Cultural Theory of Urban Social Movements*. 7. Univ of California Press, 1983. 2) Davis, Mike [a surplus humanity?] from. *Planet of Slums*. Verso, 2006. 3) Right to Housing Bill – drafted by CRH
11	**Housing and Institutions** Governance, Participation and Development	1) Sanyal, Bishwapriya, and Vinit Mukhija. "Institutional Pluralism and Housing Delivery: A Case of Unforeseen Conflicts in Mumbai, India." *World Development* 29, no. 12 (2001): 2043–2057. 2) Cornwall, Andrea, and Karen Brock. "What Do Buzzwords Do for Development Policy? A Critical Look at 'Participation', 'Empowerment' and 'Poverty Reduction.'" *Third World Quarterly* 26, no. 7 (October 2005): 1043–60. 3) Fisher, William F. "Doing Good? The Politics and Antipolitics of NGO Practices." *Annual Review of Anthropology*, 1997, 439–464.
12	**Settlement and Occupation** Self-building as Policy	1) Harish, Swastik. "Urban Development, Housing and 'Slums.'" *IIC Quarterly* 43, no. 3&4 (2017): 184–98. 2) Harris, Richard. "A Double Irony: The Originality and Influence of John F.C. Turner." *Habitat International*, Learning from the past: international housing policy since 1945, 27, no. 2 (June 2003): 245–69. 3) Ward, Colin. *Housing an Anarchist Approach*. Freedom Press, 1976.

KRVIA			
	1	Developing a Tool to Measure the Degree of Accessibility to Designated Open Spaces through the Mapping of Two Wards in Mumbai. (D ward and RN ward)	Abhijit Ekbote
	2	Sustainable livability for informal settlements: Case studies in the city of Mumbai	Kimaya Keluskar
	3	The Environment Degradation and Health Impact on the Vulnerable Group: A Case Study of Women in the Deonar Slums	Mamta Patwardhan
	4	Communities, Claims and Conflicts: The Case of Urban Villages in Mumbai	Shweta Wagh
	5	The World Bank In Mumbai: Transformation Of Urban And Housing Discourse, Policy And Practice	Hussain Indorewala

METHODOLOGY

1. UNDERSTANDING AND MAPPING OF A SLUM:

Site mapping has been categorized into various parameters.

The class had been divided into **EIGHT** groups. Each group needs to look at mapping the site and developing methods to illustrate the site keeping in mind the **specific parameter** assigned to each group.

Every group needed to do a comparative study of the specified parameter with another existing Example within the city or any other relevant examples along with the standards for the same specified by NBC, DCR or DDPA and the existing conditions on site.

Parameters to be used for mapping:

Group 1: Density:

Group 2: Typology:

Group 3: Infrastructure:

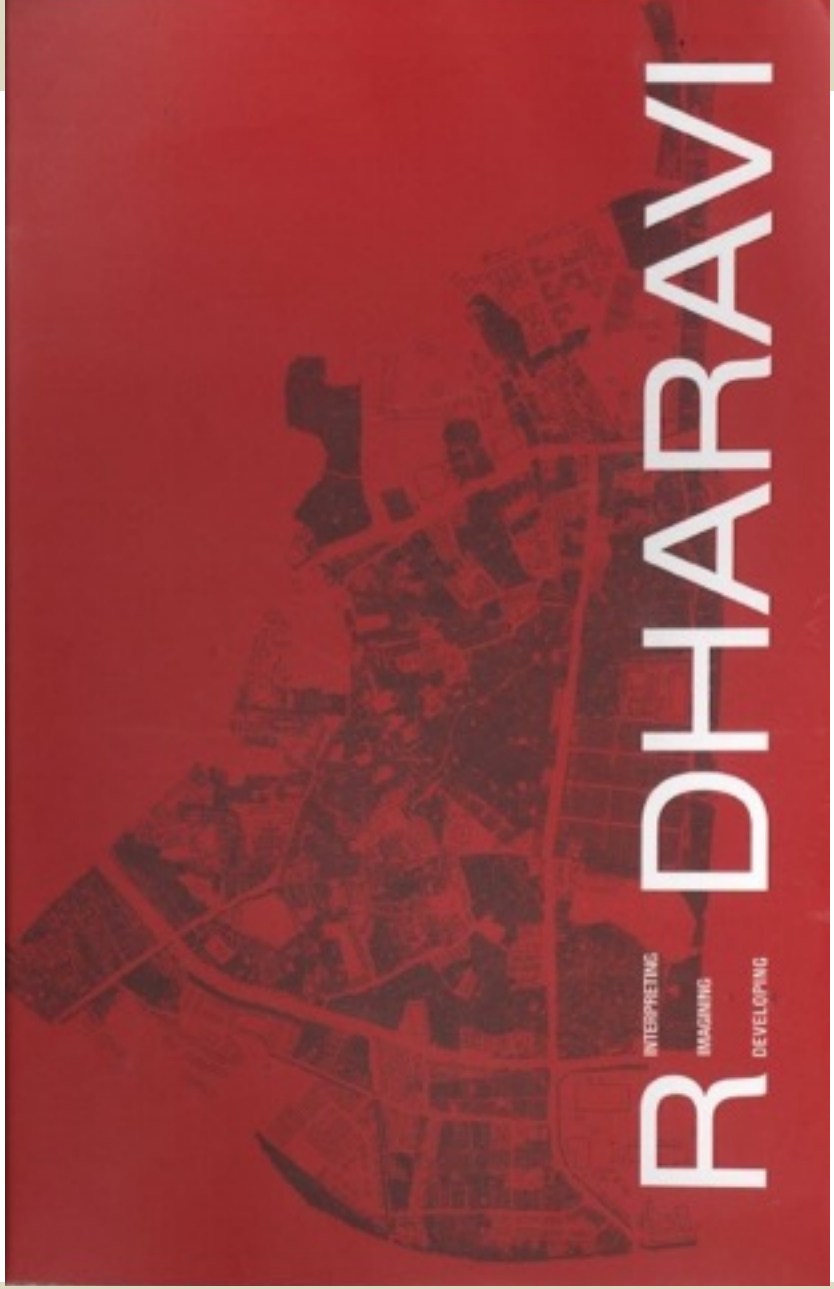
Group 4: Communities and Governance:

Group 5: Topography and Open Space:

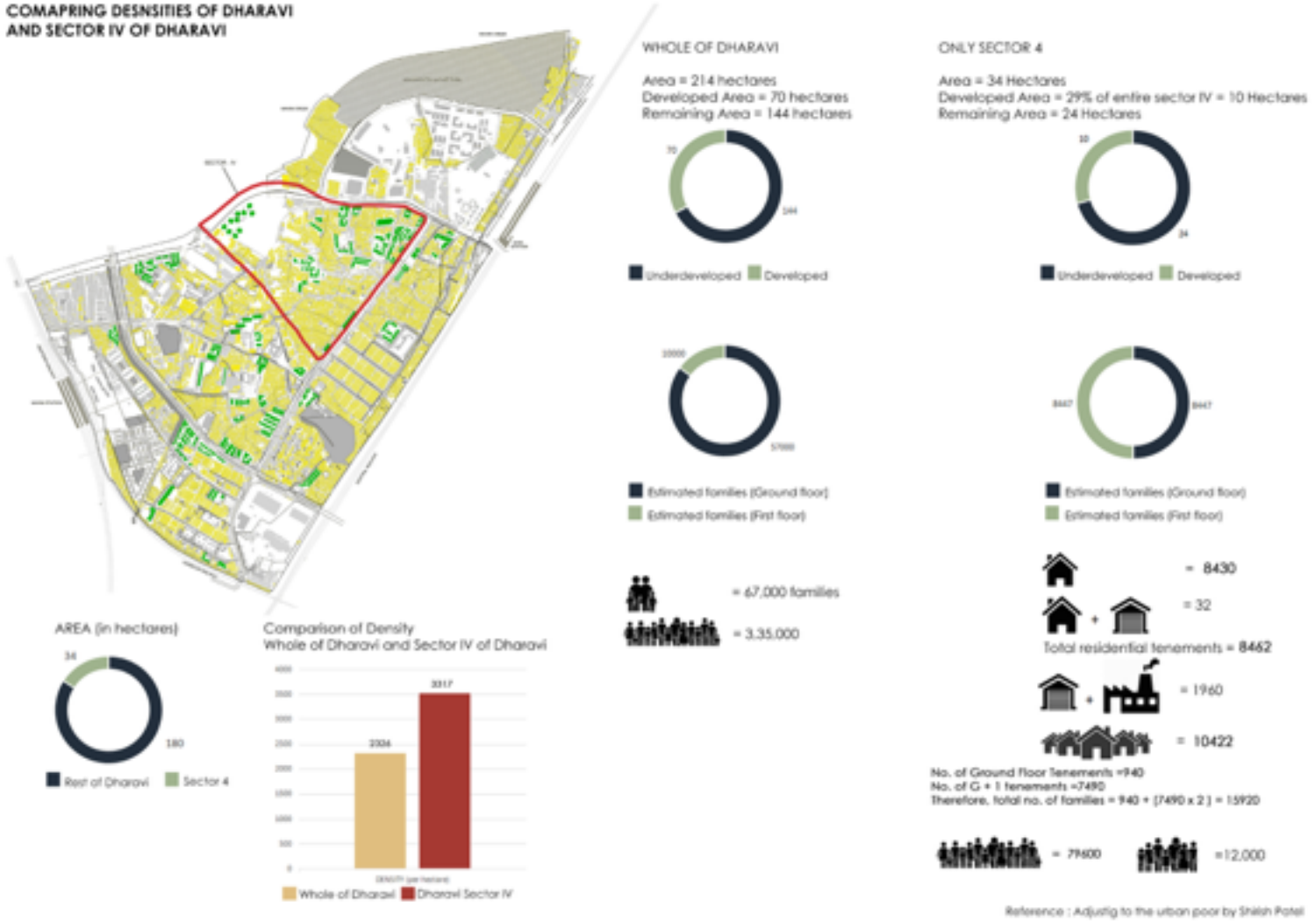
Group 6: Amenities and Psycho-Geography:

Group 7: Transformations in Urban Morphology and Material Evolution and processes:

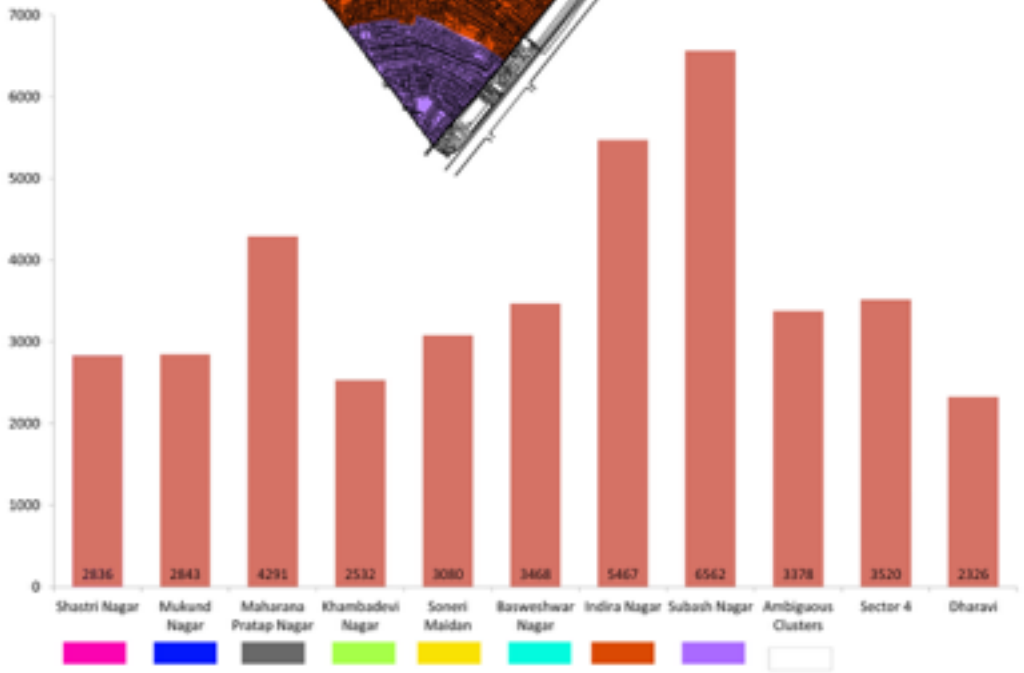
Group 8: The economics of Ownership & Rental formats and Understanding current Slum Redevelopment Policies.



Group 1: Density: The densities need to be looked upon within this category with respect to people and area. The impacts of the same need to be compared and understood, forming a mapping device for the site. The effects of high density on site need to be illustrated. The densities maybe variable across the sector in different typologies, Nagars, day/night and across seasons (Cyclic migration). The reasons for these need to be clearly understood and mapped. These densities need to be compared with other areas in the city, Bhuleshwar, Bandra, Lokhandwala or a student group's area of residence etc.



DENSITIES WITHIN SECTOR 4



Inferences :

-Government statistics do not match with mapping conducted.

-The statistics do not cater to the rental population.

-Thus the increased density due to rental population is not counted in the government schemes and policies

-This creates stress on the facilities and amenities provided.

-Therefore, rental population should be catered and included in the counting.

Group 2: Typology: The typologies will be studied in two parts,

1. The programmatic and
2. The formal.

Programmatic types which include work, live and work-live as broad categories which need to be further sub-divided. A study of architecture form with examples need to be looked into. The emphasis would be to document the standard and then look for deviants or anomalies within the standard type. The study should also include new emergent types like various SRA and developer models on site.

Lectures delivered during the semester.

Sameep Padora- In the name of housing

Uday Athvankar- Inclusive housing - Need for Radical experimentation to understand

Pinkish Shah -Design it yourself housing, Lonavala

Ainsley Lewis- Participatory process for SRA schemes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LOCATION PLAN
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D
AREA USAGE
INTEGRATED FUNCTIONS


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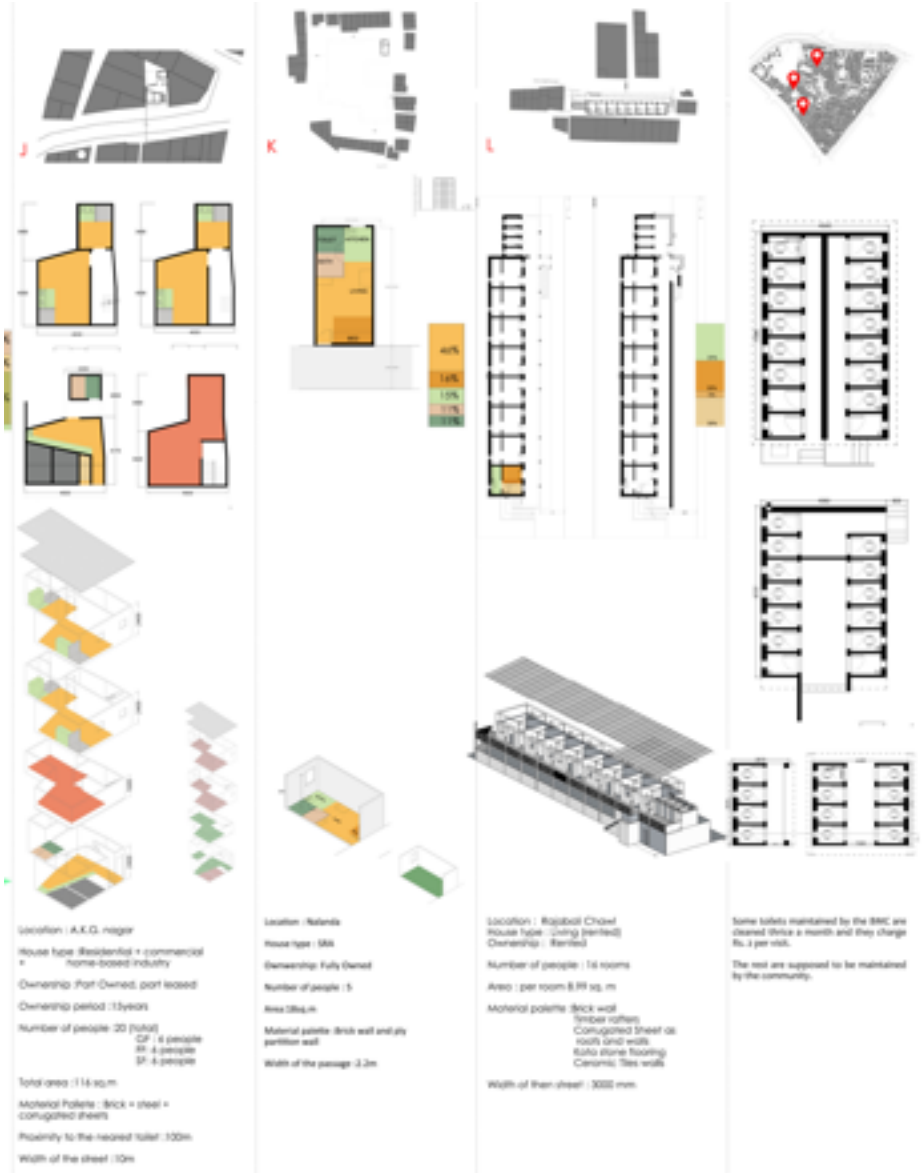
J
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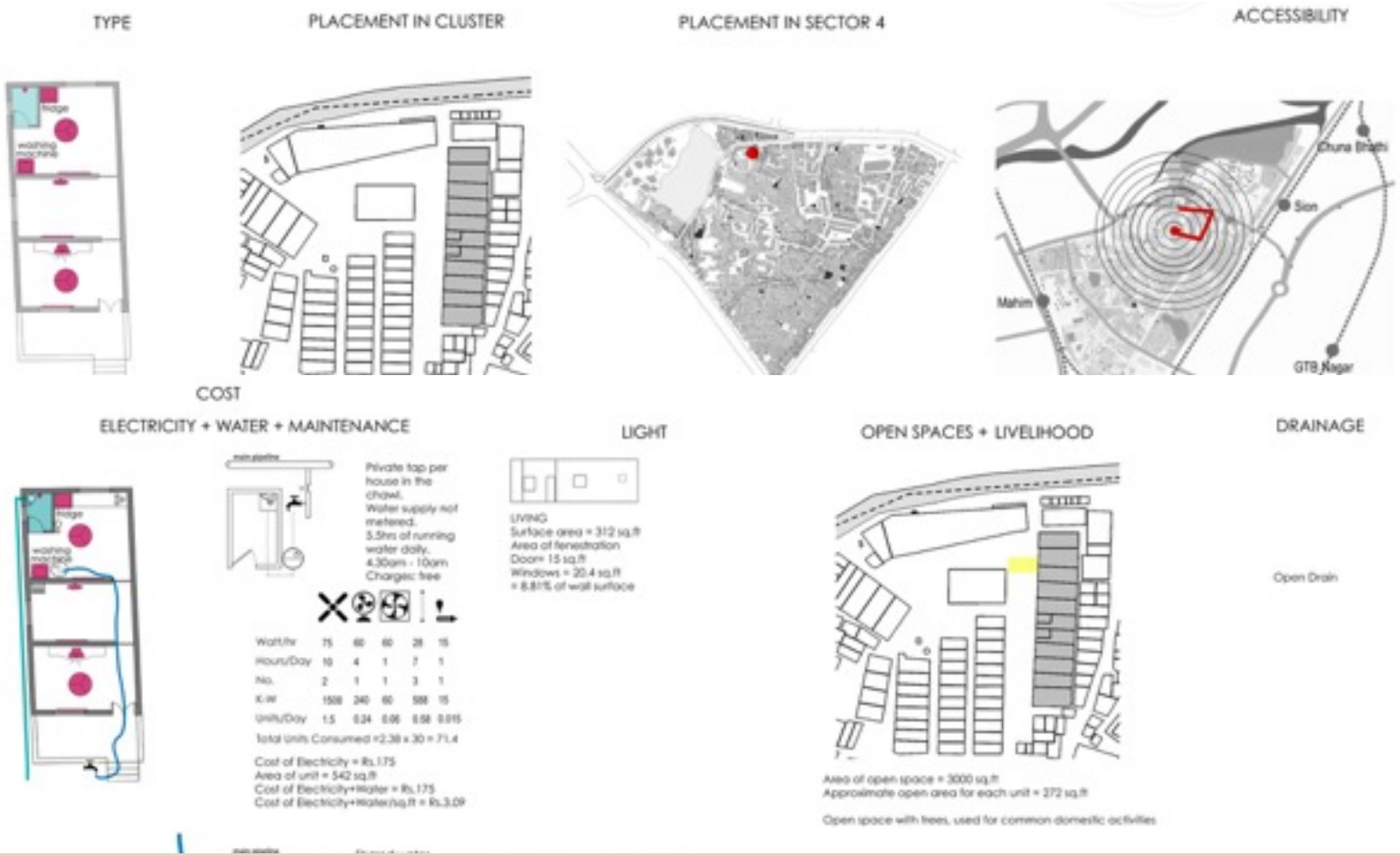
Location : A.K.G. nagar
House type :Residential + commercial + home-based industry
Ownership :Part Owned, part leased
Ownership period :15years
Number of people :20 (total)
GF : 6 people
FF: 4 people
SF: 4 people
Total area :116 sq.m
Material Palette : Brick + steel + corrugated sheets
Proximity to the nearest toilet :100m
Width of the street :10m
Location : Nalanda
House type : SRA
Ownership: Fully Owned
Number of people : 5
Material palette :Brick wall and ply partition wall
Width of the passage :2.2m
Location : Rajabai Chawl
House type : Living (rented)
Ownership : Rented
Number of people : 16 rooms
Area : per room 8.99 sq. m
Material palette :Brick wall
Timber rafters
Corrugated Sheet or roofs and walls
Kota stone flooring
Ceramic Tiles walls
Width of then street : 3000 mm
Some toilets maintained by the BMC are cleaned thrice a month and they charge Rs. 1 per visit.
The rest are supposed to be maintained by the community.

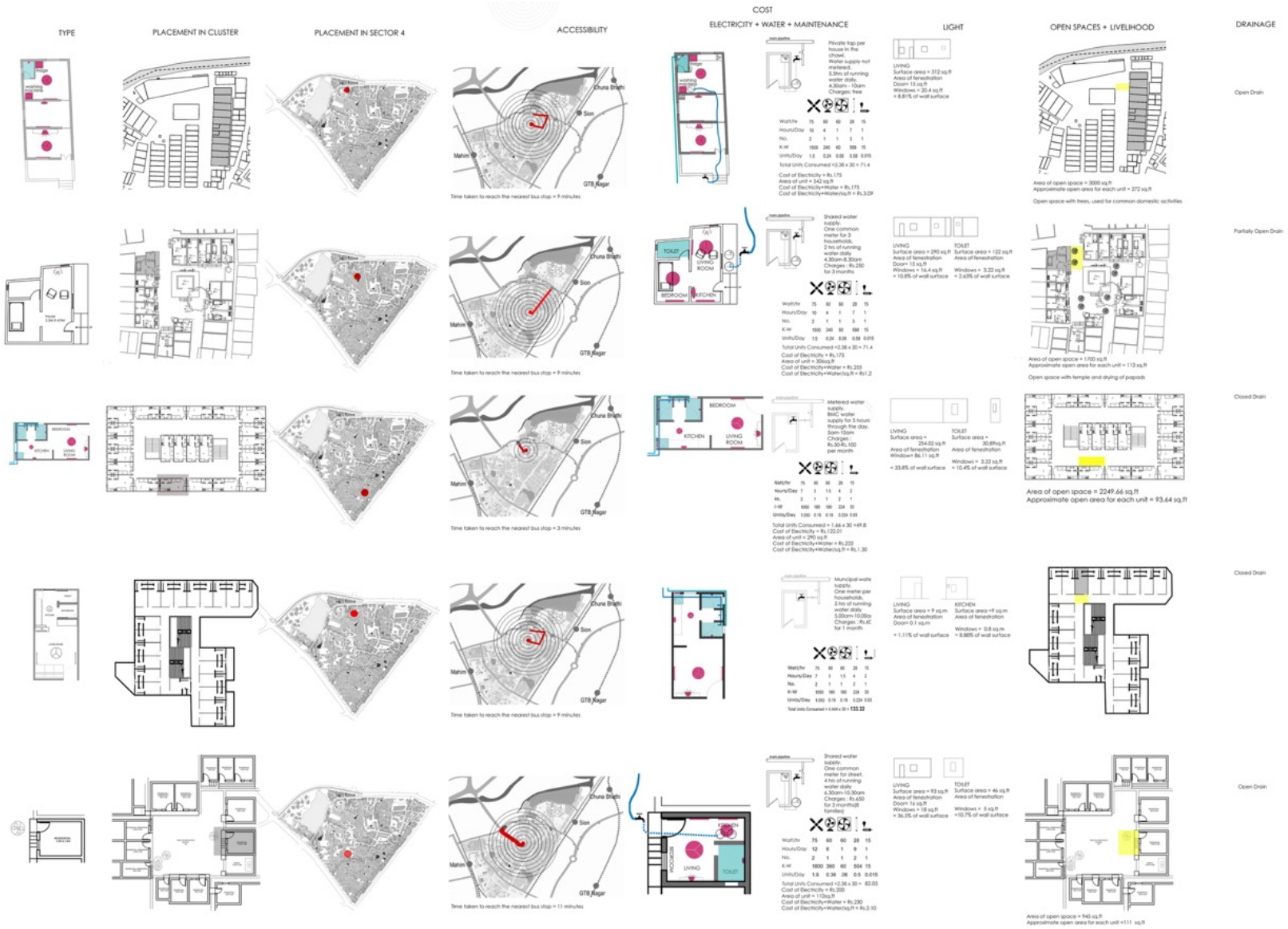
Group 3: Infrastructure: The group dealing with infrastructure needs to develop an understanding of the present services and infrastructure in terms of

1. Movement: Daily routine connection to transport network's and hubs for both individual and goods movements, etc., emergency/evacuation and disaster management systems.

2. Utilities: Electrical consumption and provisions, Water supply and drainage, sanitation

3. Light and Ventilation: current readings, Comparison needed with standard metrics for our climatic conditions.





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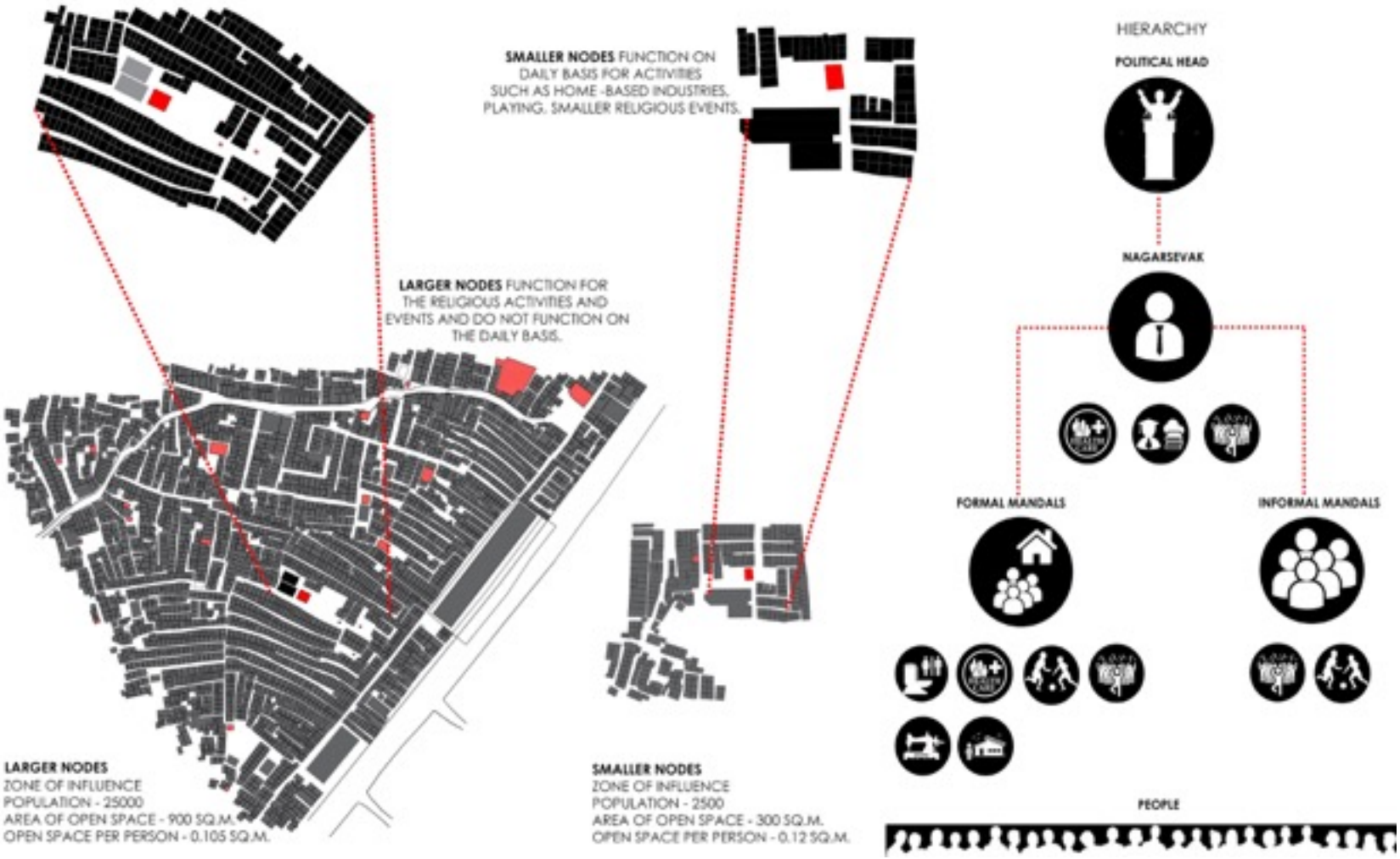
Group 4: Communities and Governance: This concentrates on looking at Nagar systems and networks that exist within each community and the factors governing the formation of the same. The mapping must focus on the spatial or formal that define these agglomerations looking at

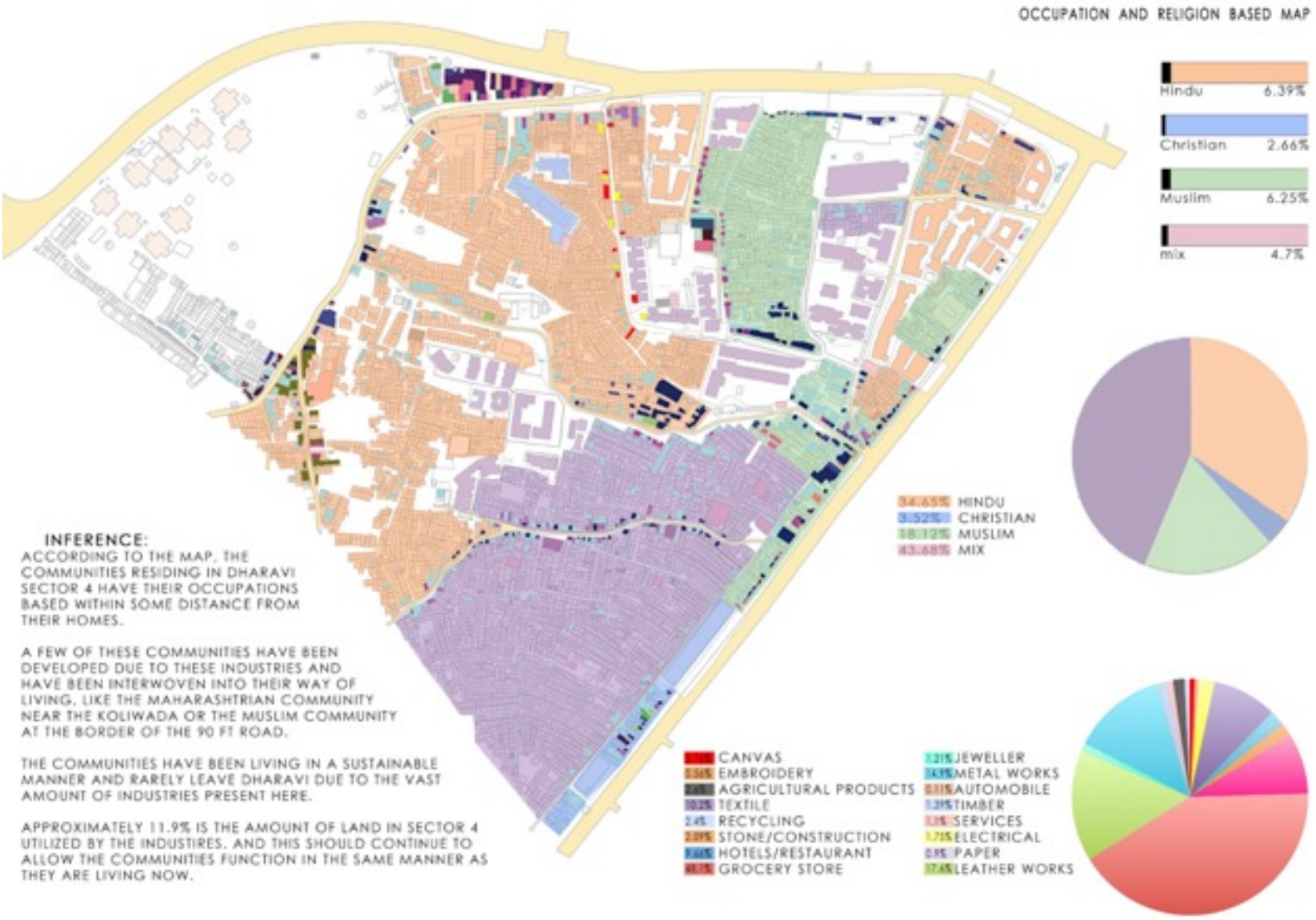
1. Hierarchies
2. Centers and Edges
3. Built fabric
4. Details
5. Cultural events

It should also examine the existence of cultures and subcultures within the same if they exist.

NODES & HIERARCHY

-OPEN SPACE WITH INFRASTRUCTURE LIKE A RELIGIOUS INSTITUTION AND/OR PUBLIC AMENITY LIKE A TOILET DEFINES A NODE FOR SECTOR IV DHARAVI.
-THESE PLACES ARE USED FOR RELIGIOUS GATHERINGS, CULTURAL EVENTS, SPORTS OR SMALL PUBLIC GATHERINGS AND SMALL BUSINESSESS LIKE PAPAD MAKING.
-THE NODES ARE FURTHER DIVIDED INTO LARGER AND SMALLER NODES ON THE BASIS OF ZONE OF INFLUENCE.
-THIS ZONE OF INFLUENCE DEPENDS ON THE IMPORTANCE OF THAT NODE WHICH IS EQUIVALENT TO THE DENSITY OF THE PEOPLE USING THAT SPACE.



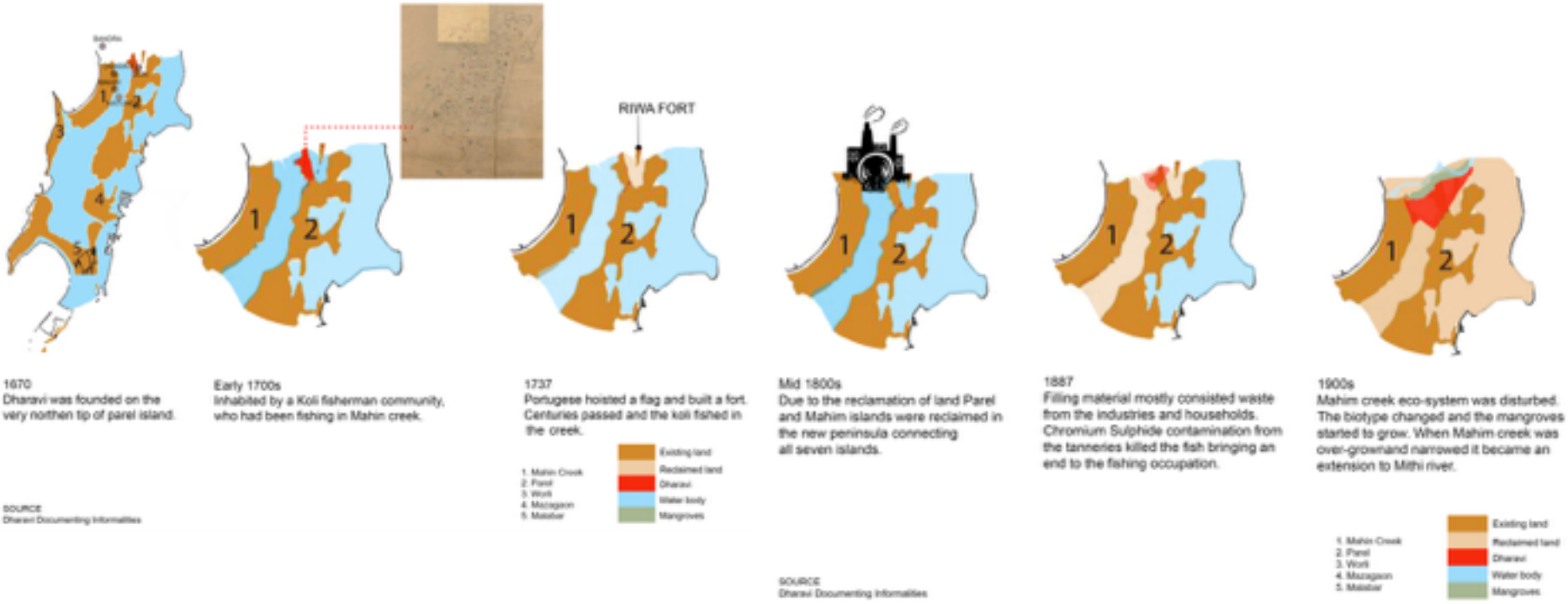

OCCUPATION AND RELIGION BASED MAP
Hindu 6.39%
Christian 2.66%
Muslim 6.25%
mix 4.7%
HINDU
CHRISTIAN
MUSLIM
MIX
INFERENCE:
ACCORDING TO THE MAP, THE COMMUNITIES RESIDING IN DHARAVI SECTOR 4 HAVE THEIR OCCUPATIONS BASED WITHIN SOME DISTANCE FROM THEIR HOMES.
A FEW OF THESE COMMUNITIES HAVE BEEN DEVELOPED DUE TO THESE INDUSTRIES AND HAVE BEEN INTERWOVEN INTO THEIR WAY OF LIVING, LIKE THE MAHARASHTRIAN COMMUNITY NEAR THE KOLIWADA OR THE MUSLIM COMMUNITY AT THE BORDER OF THE 90 FT ROAD.
THE COMMUNITIES HAVE BEEN LIVING IN A SUSTAINABLE MANNER AND RARELY LEAVE DHARAVI DUE TO THE VAST AMOUNT OF INDUSTRIES PRESENT HERE.
APPROXIMATELY 11.9% IS THE AMOUNT OF LAND IN SECTOR 4 UTILIZED BY THE INDUSTIRES. AND THIS SHOULD CONTINUE TO ALLOW THE COMMUNITIES FUNCTION IN THE SAME MANNER AS THEY ARE LIVING NOW.
CANVAS
EMBROIDERY
AGRICULTURAL PRODUCTS
TEXTILE
RECYCLING
STONE/CONSTRUCTION
HOTELS/RESTAURANT
GROCERY STORE
JEWELLER
METAL WORKS
AUTOMOBILE
TIMBER
SERVICES
ELECTRICAL
PAPER
LEATHER WORKS

Group 5: Topography and Open Space:

1. Understanding the geographic history and the stabilization of Land.

2. Topography & Flood risk: Study and effect of the monsoons and climate change to flooding considering it is situated on low lying land.

3. Links and Nodes: Their relationship to programming and open space. Detail documentation that of intervention's within these spaces. Temporal change in use also need to be articulated.



Drains are not planned, they are laid impromptu as per the growth of the settlements, giving rise to a very informal drainage pattern
The SRA buildings on the other side have a definite drainage pattern emptying into the nallahs

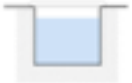
Due to the raising of roads, uneven gutter levels arise

The open gutters, become a breeding ground for mosquitoes leading to health risks

The gutters deepen due to road level raising, leading to clogging and difficulty in cleaning

The drains run right outside the houses leading to health issues

In some cases the drains run within the plinth, becoming difficult to clean



The concrete covers of the drains are flushed with the ground paving, becoming difficult to lift. They are rarely cleaned leading to overflow and clogging

Due to raising of road levels, surrounding roads get flooded

SCENARIOS

WATER HARVESTING

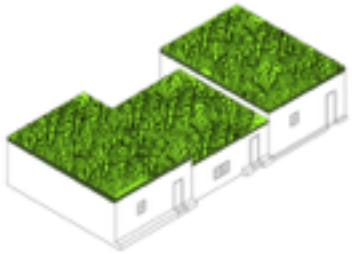
Node 1 -Fish Market
Area of Open Space -27.44 mt sq Total Water Collected -0.6 mt cube
Node 2 -Rajendra Prasad Chawl
Area of Open Space -172.4 mt sq Total Water Collected -5.03 mt cube
Node 3 -4 Junctions
Area of Open Space -225 mt sq Total Water Collected -4.015 mt cube
Node 4 -Khamdev Mandir
Area of Open Space -241 mt sq Total Water Collected -5.57 mt cube
Node 5 -S.M Chawl
Area of Open Space -217.4 mt sq Total Water Collected -3.8 mt cube
Node 6 -Kholiwada Community Space
Area of Open Space -174 mt sq Total Water Collected -6.91 mt cube
Node 7 -Gandhi Maidan
Area of Open Space -115 mt sq Total Water Collected -12.87 mt cube
Node 8 -Bhartiya Chawl
Area of Open Space -85 mt sq Total Water Collected -2.61 mt cube
Node 9 -M.P Nagar
Area of Open Space -125 mt sq Total Water Collected -2.07 mt cube
Node 10 -Mukund Nagar
Area of Open Space -89 mt sq Total Water Collected -2.3 mt cube

Due to large amount of water falling in on the open areas, this water could be collected and then be used to support the activities in the slums.

Water harvesting tank

GREEN ROOF

Due to the density of Sector 4 being extremely high which is 3520 people per Hectre in some areas, the area becomes extremely congested and hot during the summers. The green roofs will help keep the house and the area around cool while also providing for a proper slow passage for the water to be collected



DIGGING IN BOREWELLS FOR FUTURE NEEDS

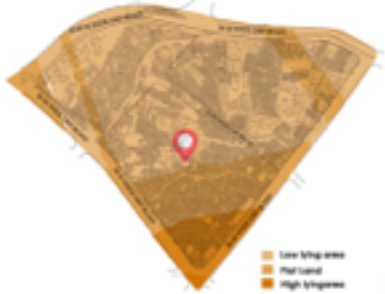
Due to the area of paved region being very large as compared to the area of the unpaved, the possibility of the water on the ground seeping under to increase the ground water table is meagre.
So to Use the Topography of the Land to an advantage, There could be trenches dug channeling the water to seep in to the ground tank below. So in case of future water shortage, the tanks underground could further cater to the needs of the people.

Trenches to Increase Ground water table

Paved vs Unpaved

PROVIDING OPEN SPACES ACCORDING TO TOPOGRAPHIC CONDITIONS

Due to Dharavi being built on Marshy Land, the soil underthe Plinth is still extremely loose. Therefore during the monsoons, the marshy land tends to slip and the plinths of a lot of houses sinks down.
Hence these areas could be reserved as greenopen spaces for the community so that the water collected in these areas could seep into the ground and add to ground water table.



Position of Wetlands

Group 6: Amenities and Psycho-Geography: Members of this group map the public structures which include

1. **Metrics for** educational and health infrastructure & religious infrastructure
2. **Relationship of these to surrounding Built form** and open space.
3. **Gender/Space**
4. **Psycho-Geography**: mental health where relevant. Maybe even to look at the Situationist Derive as means to investigate the fabric of the settlement

   This should be linked to other relevant studies across the world and in India.

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EDUCATIONAL AMENITIES IN SECTOR IV , DHARAVI

According to KRVIA mappings

Population in Sector IV Dharavi = 96,000 people
Assuming 2 children per family = 38,000 children
Children population in Sector IV Dharavi = 30,000 children

PRIVATE SCHOOLS

PRIMARY SCHOOLS/BALWADIS (Inside Sector IV)	13%	25 - 30 CHILDREN	10,000 - 20,000 Rs p.a
PRIMARY SCHOOLS/BALWADIS (Outside Sector IV)	7%	40 - 50 CHILDREN	10,000 - 20,000 Rs p.a
SECONDARY SCHOOLS (Inside Sector IV)	5%	60 - 80 CHILDREN	50,000 - 80,000 Rs p.a
SECONDARY SCHOOLS (Outside Sector IV)	13%	60 - 80 CHILDREN	50,000 - 80,000 Rs p.a
COLLEGE	10%	100 - 120 CHILDREN	1 lakh Rs p.a
MUNICIPAL SCHOOLS & COLLEGE	19%	25 - 120 CHILDREN	5,000 - 1,500 Rs p.a
OTHERS (Kaamgar Kendra , Hobby Classes, Regional Schools)	8%	25 - 40 CHILDREN	
NOT ATTENDING SCHOOL (WORK UNDER SOMEONE)	25%		

Since there are only 3 govt. schools in all of dharavi, where the quality of education is not up to the mark,hence most children are sent to private schools even though the fees are high & the are far away from their house. Some children also attend these hobby classes or kaamgar kendra, such that they can start earning at a quite early stage.

- There should be an increase in the number of schools inside the sector , with an improvement in the quality of education.
- These schools can also be looked as a model of educational & vocational trainning centres.

Children in Sector IV = 30,000
Infants = 6,000
∴ Children to be considered for education = 24,000

Pre-Primary Schools = 17% = 4,000
Students per Schools = 400
∴ Total Pre-Primary Schools = 10

Secondary Schools = 30% = 7,000
Students per Schools = 1,000
∴ Total Secondary Schools = 7

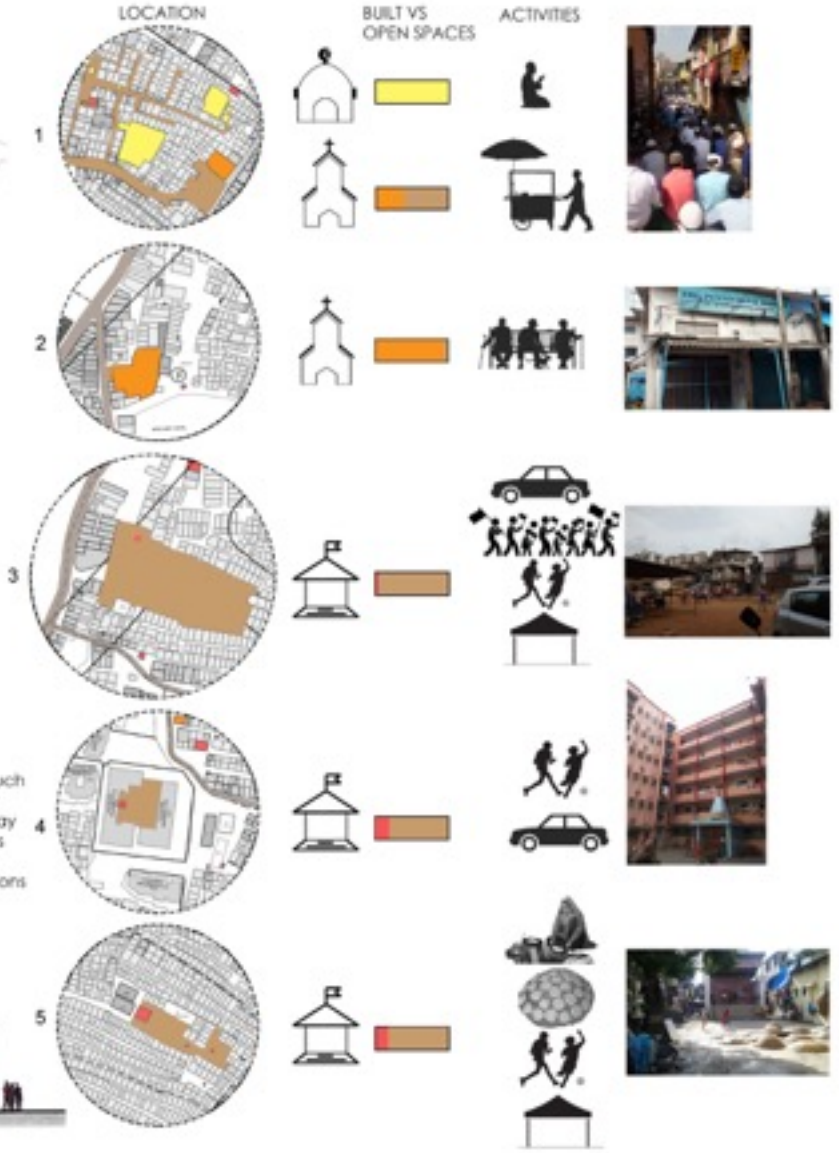
Colleges = 25% = 6,000
Students (College in sector IV) = 3,000
Students per College = 1,500
∴ Total College = 2

Primary Schools = 30% = 7,000
Students per Schools = 500
∴ Primary Schools = 14

∵ Total Secondary Schools = 7
∴ Total Primary Schools = 7
∴ Students per Schools = 1,000

Primary & secondary schools should be combined in the same building and every school & colige should have a open ground.

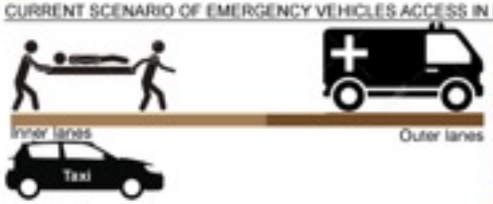
RELIGIOUS AMENITIES IN SECTOR IV, DHARAVI



Most of the religious institutions are surrounded by relatively large amount of open space in such a dense neighbourhood. These spaces are used for both religious and secular activities. They become the neighbourhood square for those that live around them, areas where children play and people park their cars or dry papadams in the sun. During religious festivals, these spaces are taken over for meals, accommodation for devotees and congregational spaces. Often alleys become important spaces during prayer. The open spaces around the religious institutions are the only community / breathing / spill over spaces for the neighbourhood.

HEALTH CARE AMENITIES IN SECTOR IV DHARAVI

CURRENT SCENARIO OF EMERGENCY VEHICLES ACCESS IN DHARAVI



MEDICAL CAMPS AND VANS PROVIDED TO SLUMS ON EVERY SUNDAYS

Inferences

There is a scope to include more mobile health care facilities in the sector of primary health care as it is affordable and space saving. Also it is more relied upon than private clinics as only **48 of 120 clinics are used**

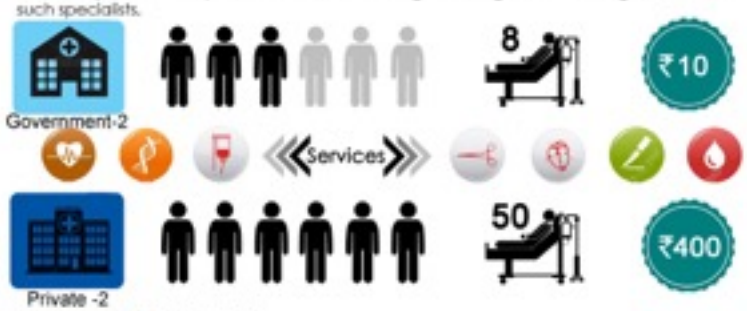
There is a scope for more private hospitals of secondary and tertiary health care facility as people need better infrastructure facilities for complex health problems at an affordable price

Primary health care centre:

They are the basic first level of contact between individuals and families with the health system. The general practitioners, the family physician, the physiotherapist are the usual primary health care providers.

Secondary health care centre:

Health care services, at such centres are provided by medical specialists.
Secondary health care providers include cardiologists, urologists, dermatologists and other such specialists.



Nursing home care centre:

Nursing care provides a residential care.It is a privately operated establishment providing maintenance and personal or nursing care for persons (as the aged or the chronically ill) who are unable to care for themselves properly.

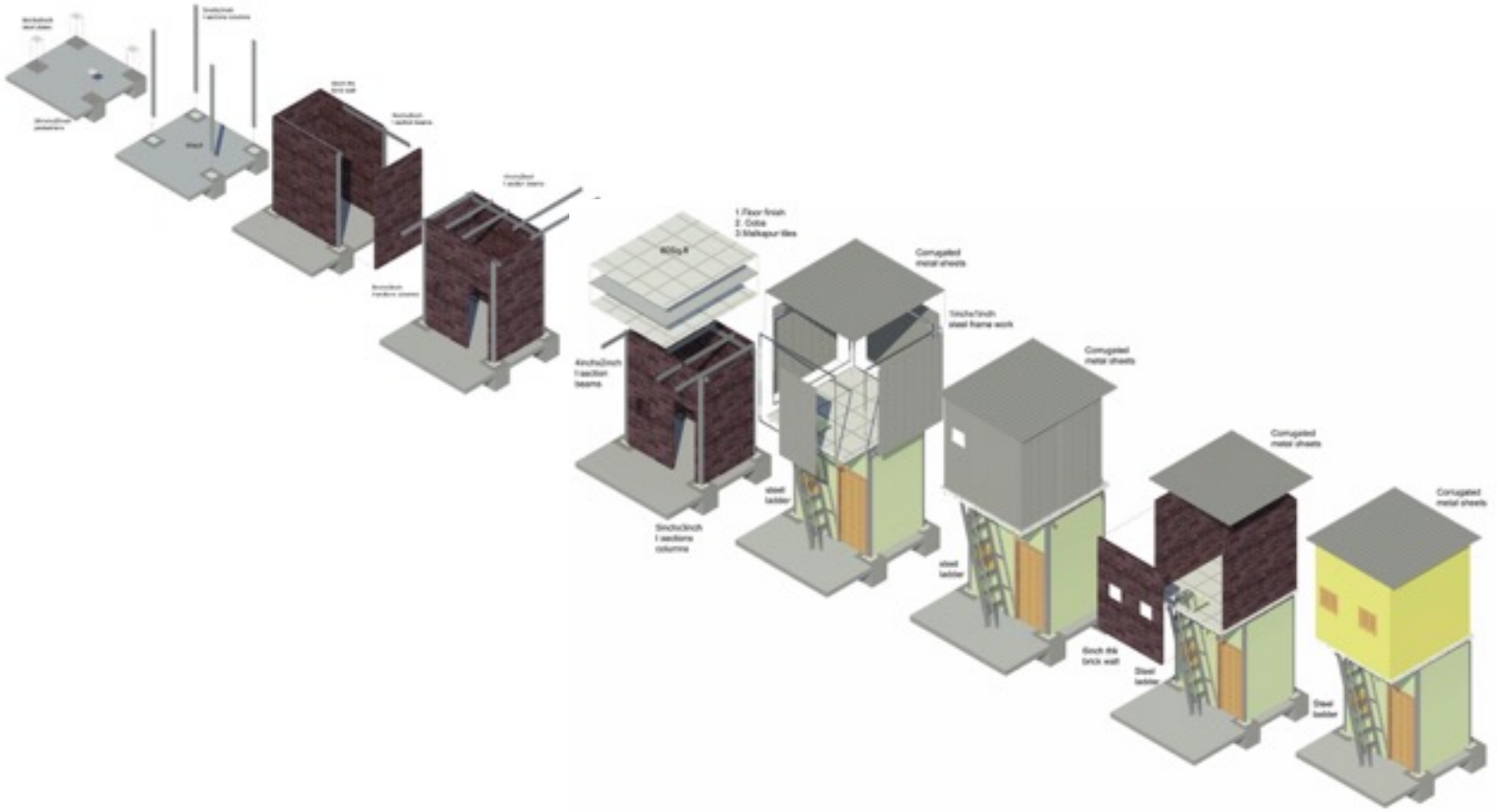
Hospitals:		Mobile health care services:	
Number of people in sector IV	-96,000	Number of medical vans provided/ day	-4
Number of beds required/1000 people (As per National Health Services)	-1	Number of people consulted/ van	-30
Thus, total number of beds required	-96	Thus total number of people consulted/day	-120
Number of beds available currently (Government + Private hospitals)	-2 x 50 + 2x 8 = 116		

So the number of beds exceeds the standard requirement but there is a need for more mobile health services.

Group 7: Transformations in Urban Morphology and Material Evolution and processes: The focus of this parameter looks at the Evolution/Timeline of the change in built form of the slums from its inception to the present Material & Construction Techniques. Also looking at the development of the building material palette and the current construction techniques and systems with reference to its history.

Using Life cycle assessment as a tool to map the environmental footprint of the existing material palette.

CURRENT CONSTRUCTION METHODS



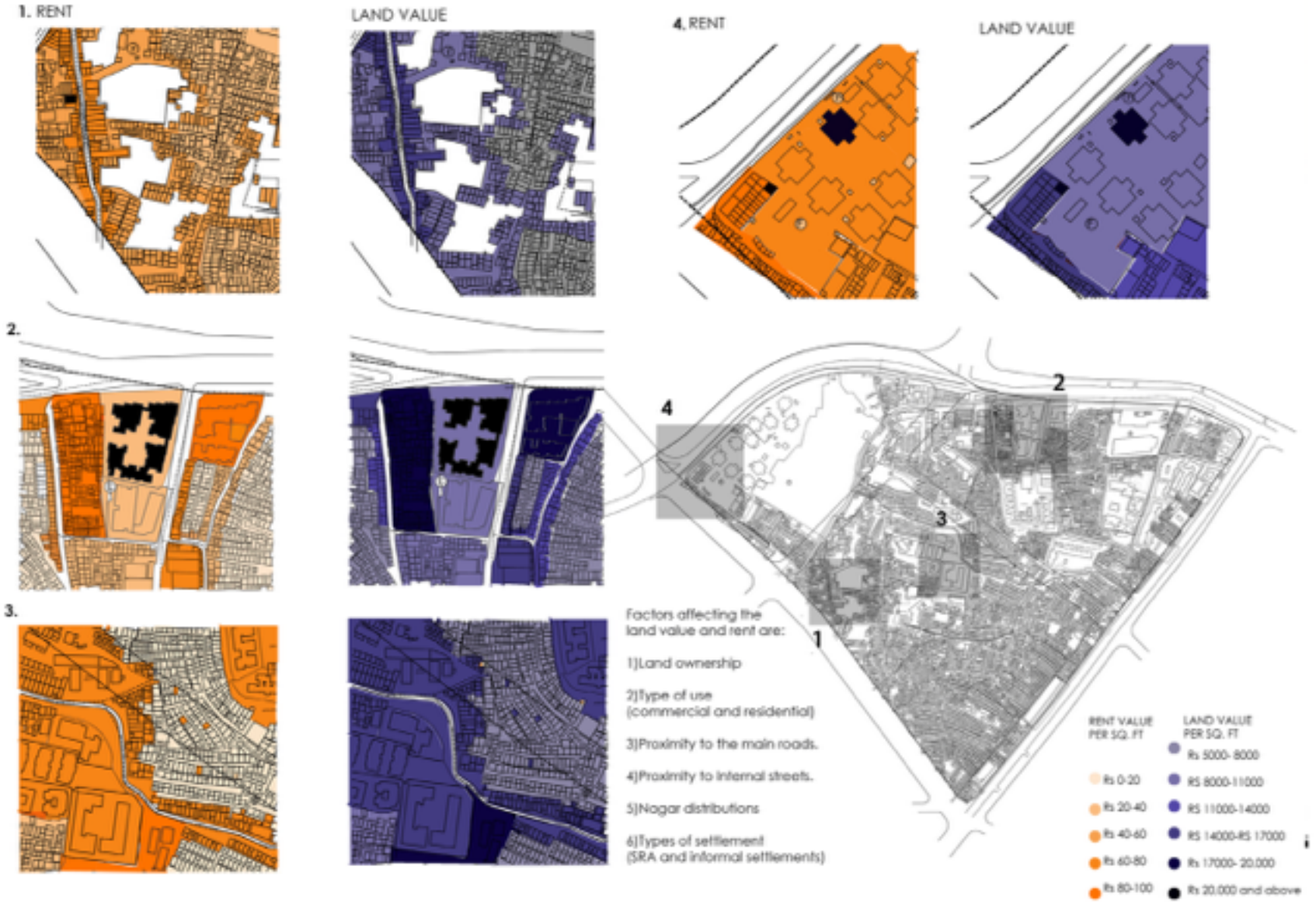
Group 8: The economics of Ownership & Rental formats and Understanding current Slum Redevelopment Policies.

Investigations to include, Income per capita but more importantly Plot pricing, construction costs & Rental values based on

1. Location of unit both in plan and section
2. Program

The second aspect of this group was:

3. To critique, to understand the Sanctioned D.P reservations for this area and also bring out the land ownership patterns in Dharavi (MCGM, PVT, Railways, State Government, etc). As Land owners are also major stake holders as we need their consent and voice for redevelopment and the nature and form of the redevelopment.
4. Formulate an understanding / critique the existing proposals for Dharavi, DRP and KRVIA recommendations for the same, PUKAR's research based recommendations or any others.


1. RENT
LAND VALUE
4. RENT
LAND VALUE
2.
3.
4
1
2
3
Factors affecting the land value and rent are:
1)Land ownership
2)Type of use (commercial and residential)
3)Proximity to the main roads.
4)Proximity to internal streets.
5)Nagar distributions
6)Types of settlement (SRA and informal settlements)
RENT VALUE PER SQ. FT
Rs 0-20
Rs 20-40
Rs 40-60
Rs 60-80
Rs 80-100
LAND VALUE PER SQ. FT
Rs 5000- 8000
RS 8000-11000
RS 11000-14000
RS 14000-RS 17000
Rs 17000- 20,000
Rs 20,000 and above

1 - Bhayander
Property rates :8-14 k per sq. ft
Rent:Rs 13-21 per sq. ft

2 - Kurar Village
Property rates :12-17 k per sq. ft
Rent:Rs 26-36 per sq. ft

3 - Bandra Reclamation
Property rates :31-43 k per sq. ft
Rent:Rs 54-85 per sq. ft

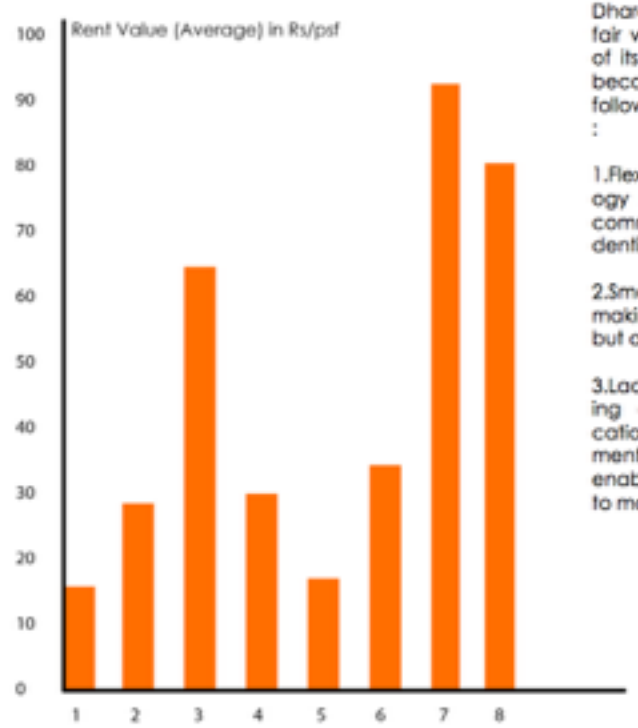
4-Yadav Nagar
Property rates: 31-43 k per sq.ft
Rent: Rs 54-85 per sq.ft

5 - Ekta Nagar
Property rates :9-16k per sq. ft
Rent:Rs 10-24 per sq. ft

6 - Dharavi
Property rates :10-20k per sq. ft
Rent:Rs 25-50 per sq. ft

7 - Worli
Property rates :30-54k per sq. ft
Rent:Rs 78-128 per sq. ft

8-Colaba
Property rates :29-51k per sq. ft
Rent:Rs 68-106 per sq. ft

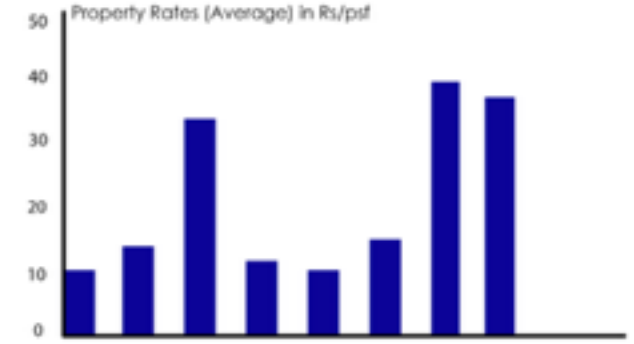


Dharavi seem to fair well in terms of its economics because of the following reasons :

1.Flexible typology of housing/ commercial/residential

2.Small sized units making it dense but affordable.

3.Lack of licensing and certification requirements in Dharavi enable business to move swiftly.



Reference:www.magicbricks.com

MODULE 1: MASTERPLANING STRATEGIES

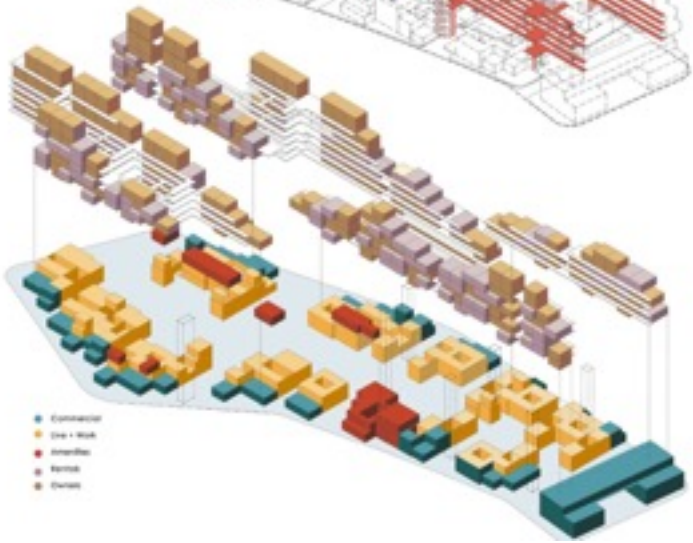
FACULTY
MODULE 1: SHANTANU POERIDI MANISHA AGGARAWAL

ROAD NETWORK

RETAINED STRUCTURES

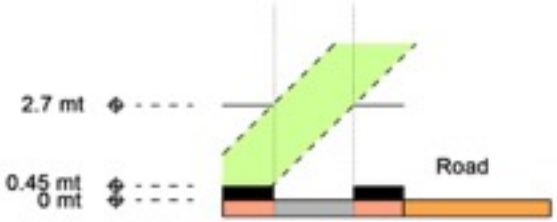
OPEN SPACES

COMMERCIAL SPACES

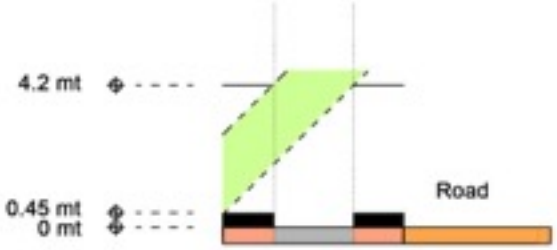


FACULTY: KAYZAD SHROFF
MARIA LEON

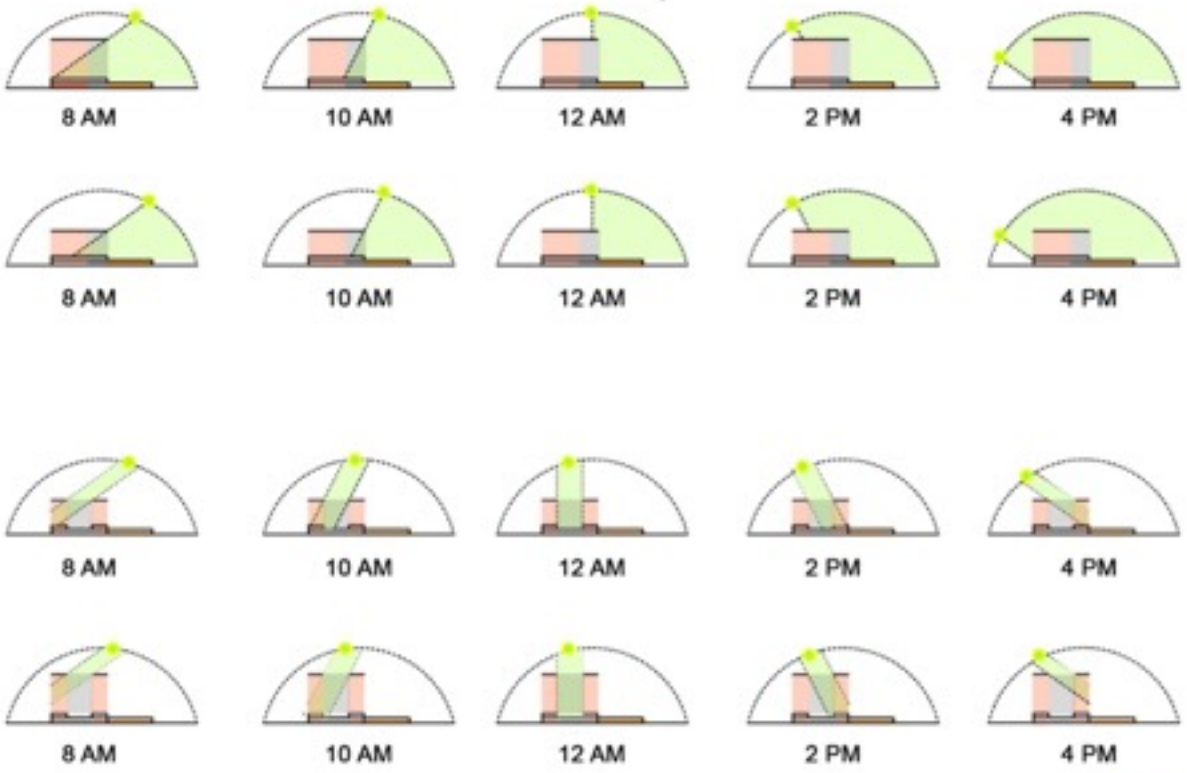
Plan for Plinth level of 0.45 mt



Section AA (for height 2.7 mts)



Section BB (for height 4.2 mts)



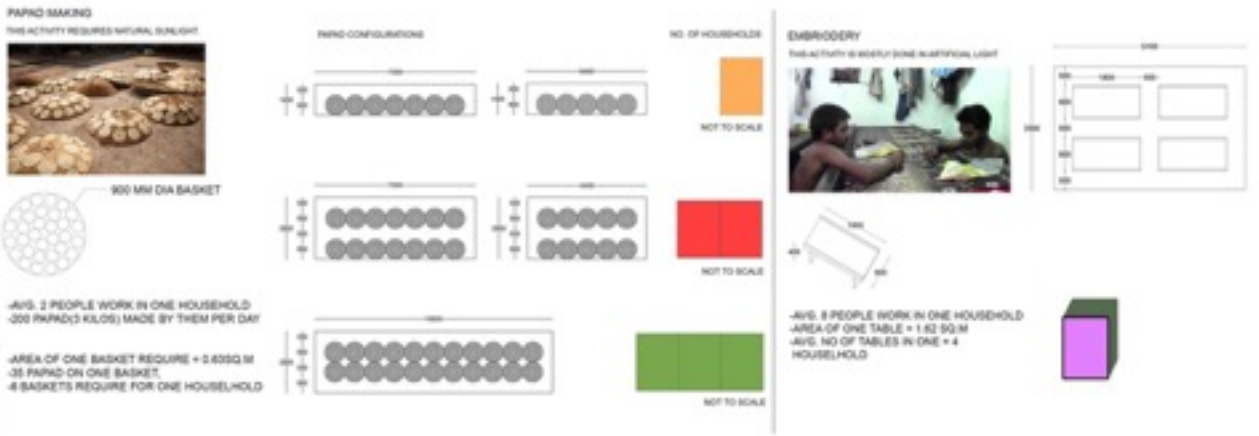
Dharavi Housing Studio

Non-Standard Typomorphologies
By-Yash Chudiwal

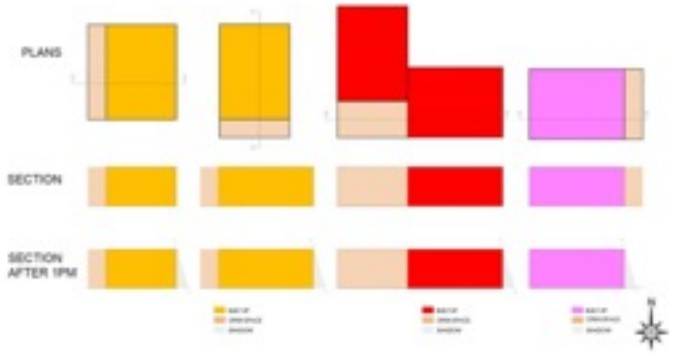
This project looks at Non-Standard Typomorphologies which deals with specific concerns on site and not looking the entire neighbourhood.

Dharavi, is one of those places which brings the image of the constant negotioaton of open spaces to liveable spaces. Open spaces are places of interaction ,community gathering, metings, play area, extended part to work. Such kind of spaces are lost when a vertical tower typology comes into Dharavi. So the project mainly looks at those private and shared open spaces which gets formed in the vertical typology same as on horizonatal plain. In a typical apartment complex, people do not usually feel the same ownership as they might in a single family home because they identify their space as only a small portion of the building as a whole. By breaking the residences out of an all-encompassing envelope, project enable to allow people to feel that they really owned their own spaces. They could identify the walls and roof of their residence and define what belongs to them. By doing so a unique living environment that allowed for strong community connection giving people more ownership and independence than usual.

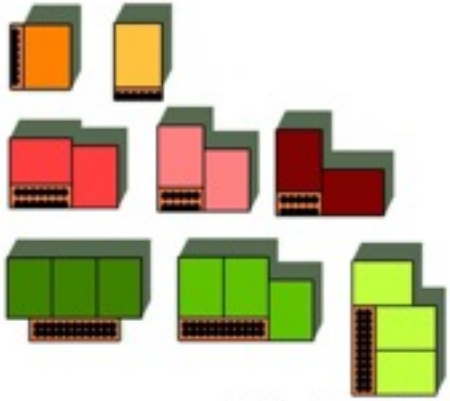
Project focuses on two activities namely Papad making and embriodery. 225 Units of 400sq.ft each, overall ,with papad making which requires natural light falls on south and west side and rear side comprises of embriodery which doesn't require natural light. Shared open spaces are formed for papad making with units configuration of 1, 2 and 3. Embriodery consists of storage, workspaces and living areas aspart of unit. They form a unique relation to open spaces infront of them which caters to the need of each activity.



Built Up and Open Space



Unit configuration and open space



Units of Papad making

Units of Embriodery

Hierarchy of Open Spaces

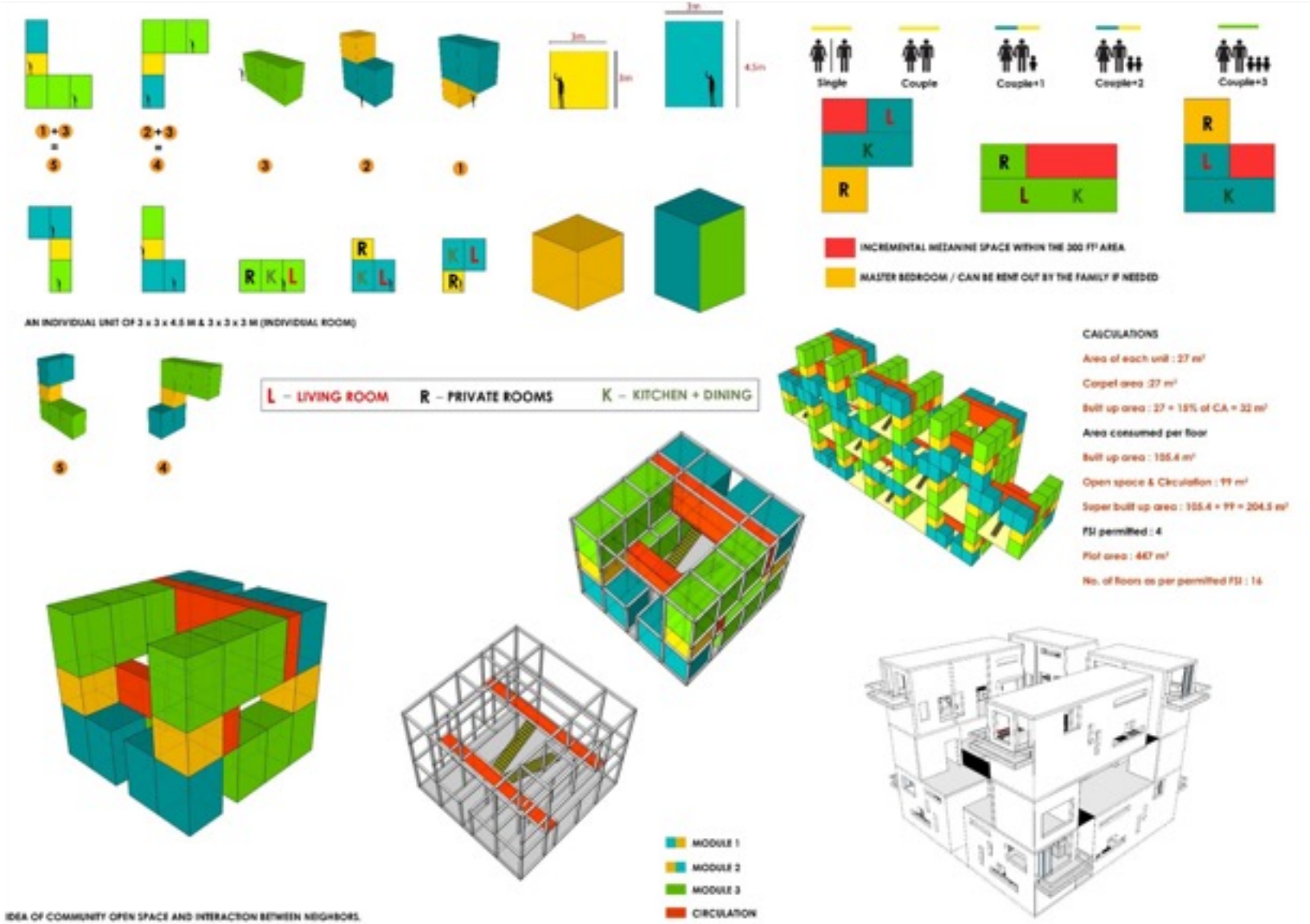
Dharavi, Mumbai
9th Semester
KRVIA

The project aims at creating housing for primarily the women who make papad and for families who are engaged in tailoring. Since papad making being a communal activity requires the need for extensive amount of sunlight and open space, The building aimed at creating open spaces of different scales across different clusters. There were three types of open spaces whihc were addressed to: The open space required each unit or a household. The open space required at the cluster level and a common public open space which can be used by anyone in Sector 4. The project aimed at creating these open spaces at different level of the building thus bringing in the sense of a community living on the vertical plane.

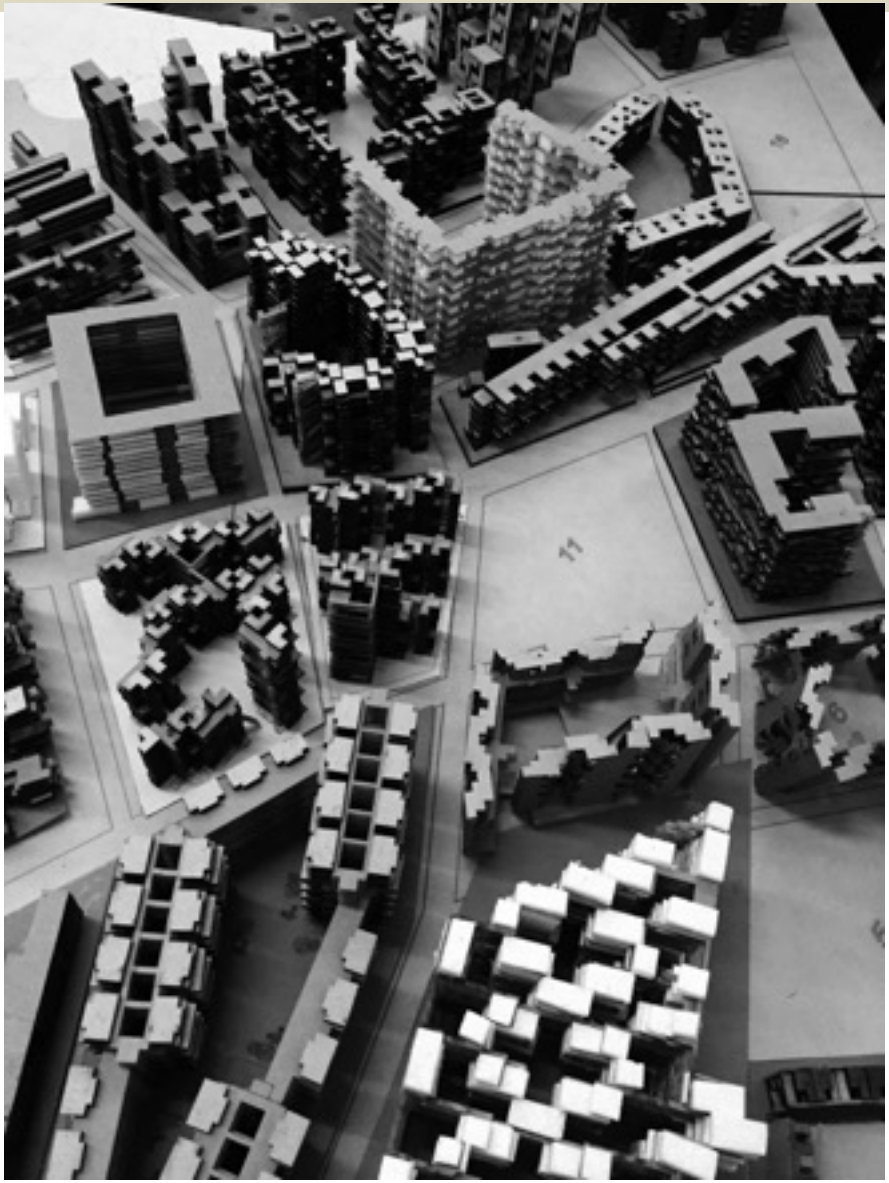

Unit growth
Section AA
Dharavi | Mumbai
The Section cascades beyond to avoid shadow of units on the courtyards. The section highlighs the direct and open relation of the kitchen to the open space

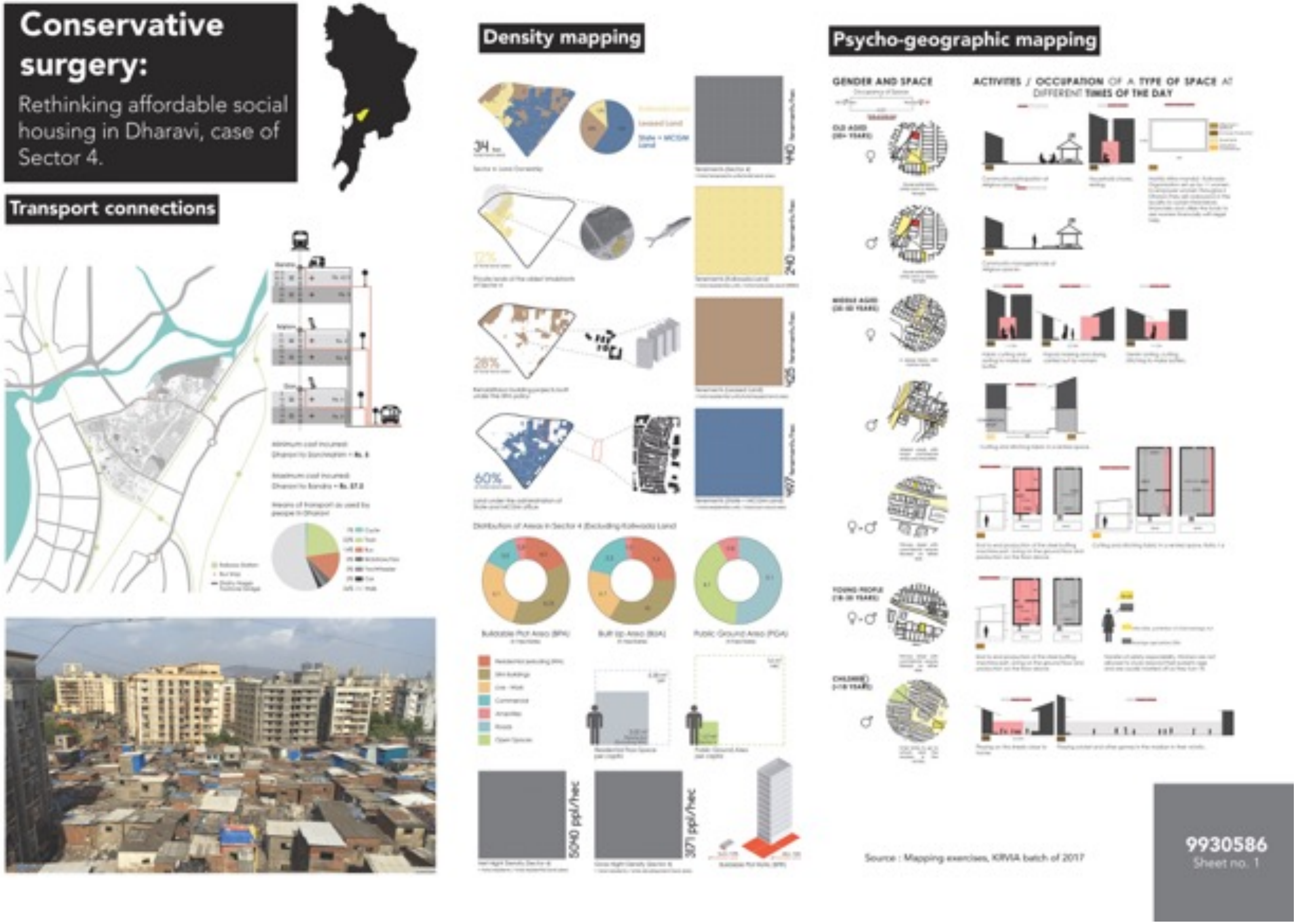

UNIT 1
UNIT 2
UNIT 3
LONGITUDINAL SECTION
LATERAL SECTION
LONGITUDINAL SECTION
LATERAL SECTION
LONGITUDINAL SECTION
LATERAL SECTION
LEVEL 2
LOFT (AT 2.1 M)
LEVEL 1
LOFT (AT 2.1 M)
LEVEL 1
LOFT (AT 2.1 M)
LEVEL 2
LEVEL 1
INDIVIDUAL UNIT PLAN & SECTION SCALE : 1/50
FLOOR 1
FLOOR 1 MEZANINE
FLOOR 2
FLOOR 3
FLOOR 3 MEZANINE
CLUSTER MODULE PLAN & SECTION SCALE : 1/100
SOUTH ELEVATION
EAST ELEVATION

UNIT DESIGN AND AGGREGATION

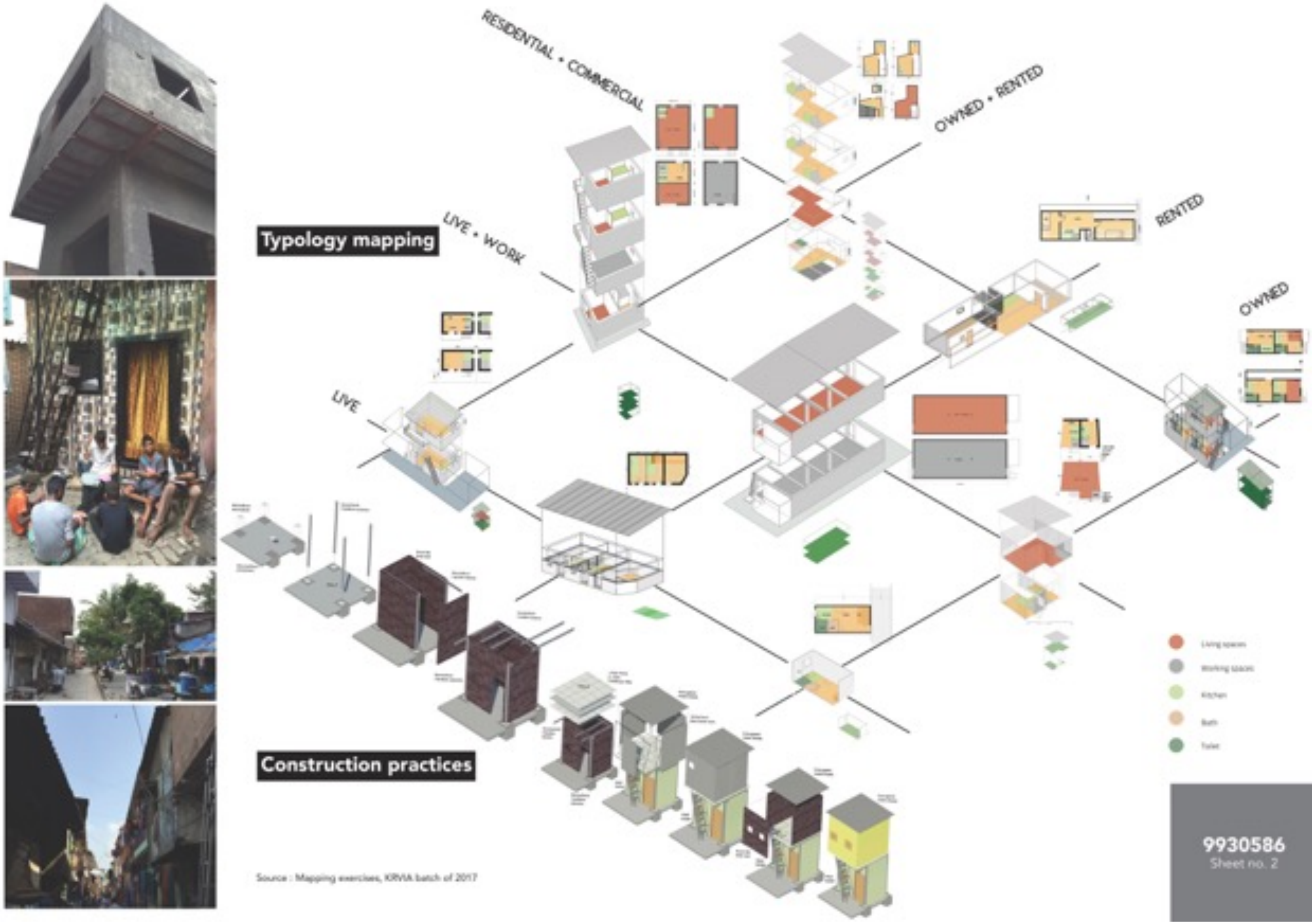



19
11
5
18





Source: Mihir Desai, Chinmay Shidhore & Lekha Samant



Source: Mihir Desai, Chinmay Shidhore & Lekha Samant

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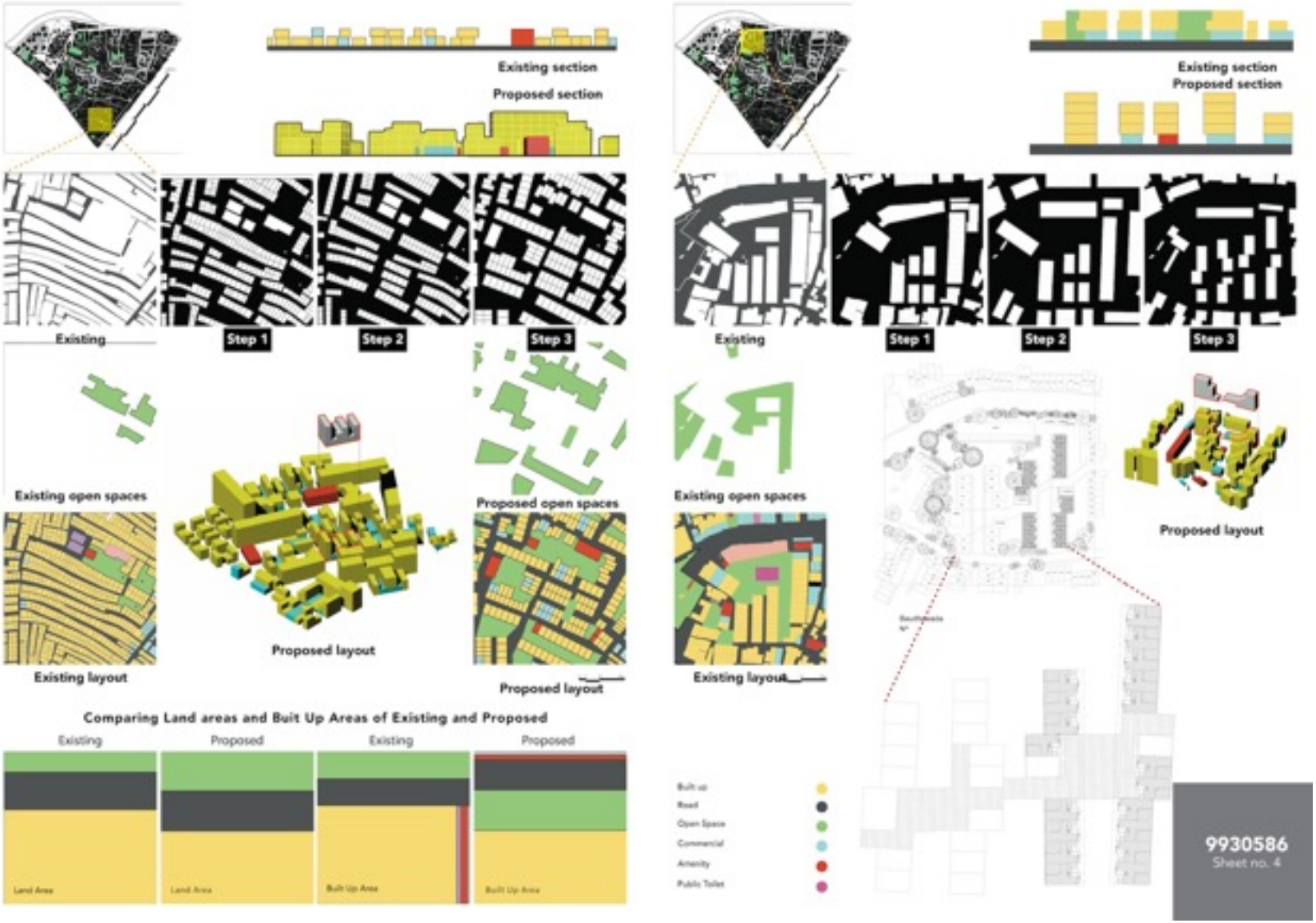


Source: Mihir Desai, Chinmay Shidhore & Lekha Samant

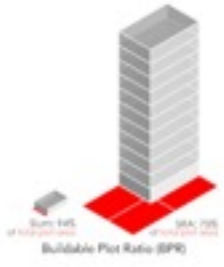
Buildable Plot Ratio (BPR) deals with the ratio of the built on the ground level to the total area of a particular land (Excluding roads and footpaths, parks and playgrounds as well as plots that accommodate a public service such as fire services or police stations or hospitals or schools, even if such public services are profit-making). BPR is useful in determining how much of percentage should one build on the ground in order to have a sustainable and healthy living environment in a neighbourhood.
Higher values of BPR give a greater sense of crowding.

Source: Shirish Patel et al, Urban layouts densities and the quality of urban life-Economic and Political weekly, June 2007

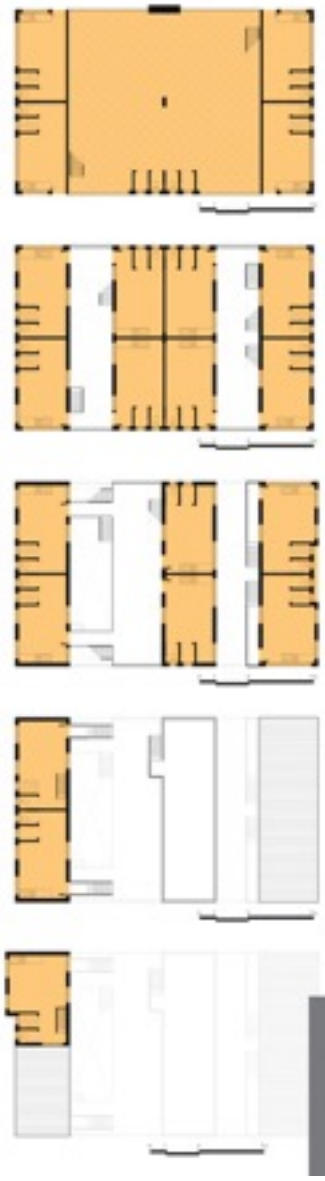
The comparison of different localities is shown in Table 4.
New York's most crowded localities are said to be CD-5 (Midtown), which is the central business district, and CD-8 (Upper East Side) which is one of its most crowded residential areas. Both have a BPR of just under 14 per cent, whereas the average for all Manhattan is just over 41 per cent. New Delhi, for the four localities for which we have information, has values ranging from 40 per cent for the swanky areas of Sunder Nagar, Kaka Nagar and Bapa Nagar, to 69 per cent for the much more crowded Lajpatnagar. Mumbai's average for the Island City is nearly 63 per cent, with the more crowded areas at over 78 per cent. **So Mumbai's average as well as its highest BPR values are about one and a half times Manhattan's corresponding figures.**

Table 4: Buildable Plot Ratio (BPR) in Different Localities

City and Locality	Buildable Plot Ratio (Per Cent)
New York Manhattan	
CD1	11.2
CD2	49.4
CD3	49.5
CD4	24.5
CD5	13.6
CD6	68.8
CD7	44.4
CD8	13.6
CD9	31.5
CD10	31.5
CD11	50.1
CD12	25.6
Manhattan Total	41.2
New Delhi	
Lajpatnagar	69
Govt Market	
Rajindra Nagar and Vishal Enclave	
Sunder Nagar, Kaka Nagar and Bapa Nagar	40
Mumbai	
A-South	89.8
A-Mid	78.4
A-North	54.5
B	45.1
C	62.1
D-East	69.5
D-Mid	77.1
D-North	75.4
E-East	77.1
E-Mid	67.1
E-North	69.7
E_West	62.1
F-South-W	72.6
F-South-Mid	72.6
F-South-Ext	71.4
F-South-SW	72.6
F-South-SWE	72.6
F-North-SW	65.4
F-North-E	65.4
F-North-N	65.4
G/North-W	62.1
G/South-W	62.1
G/South-E	62.1
G/North-W	62.1
Island City	62.9



Borrowing from the concept of BPR, what we propose as guidelines for high density low rise areas like Dharavi is a system of **BUILDABLE RATIOS at not just the ground level but subsequent floor levels as well.** This will help in regulating how much can people increment when they build higher. Thus maintaining a healthy urban fabric in a neighbourhood.



Buildable Ratio for Ground Floor = 80 - 90%

Buildable Ratio for First Floor = 70%

Buildable Ratio for Second Floor = 50%

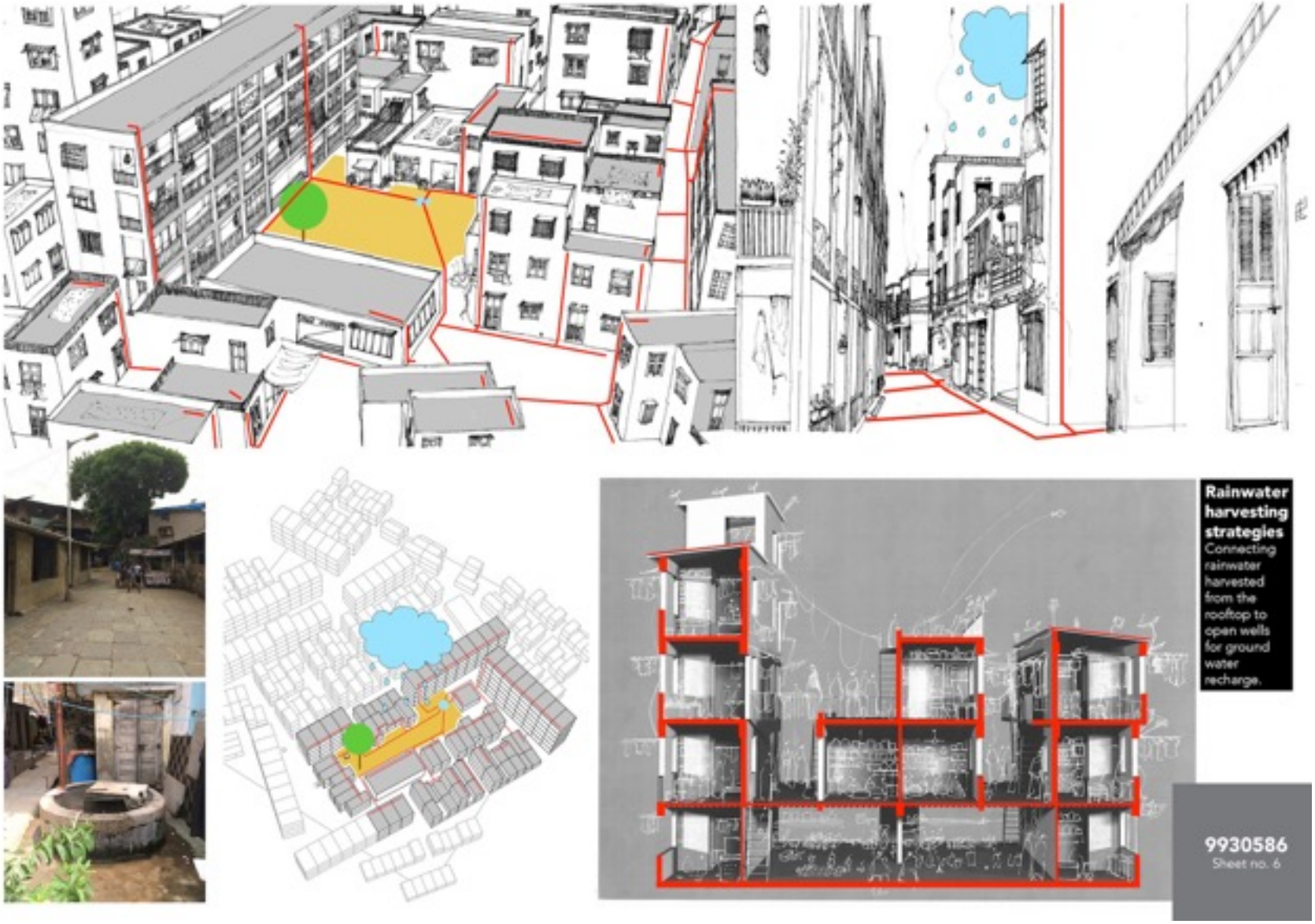
Buildable Ratio for Third Floor = 20%

Buildable Ratio for Fourth Floor = 12%

Unit Design

9930586
Sheet no. 5

Source: Mihir Desai, Chinmay Shidhore & Lekha Samant



Source: Mihir Desai, Chinmay Shidhore & Lekha Samant

Conclusion- Lessons Learnt

The assimilation of information about the informal settlement and thus learning in a course takes place when:

1. There is in-depth primary research about the context.

In this case the learner began with the research undertaken by the Design Cell of KRVIA. The learners engaged with the context and made comparisons with standards, existing regulatory frameworks, guidelines, codes and existing conditions in other parts of the city.

2. Courses conducted simultaneously with specific pedagogic intent that address the same / similar issues add value to the discourse within the the respective courses. It may even cause conflict within the respective courses.

3. The learner thus has to establish an individual proposition to address the issue owing to the different positions they are exposed to.

4. The aim of the course intended at the out set may vary however the learning outcomes should take precedence. As faculty we must accept valid positions proposed by learners even if they do not meet the agenda of the course.