

Urbanizing Peripheries: An aspect based study of urban fringes in the region around Pune city to understand its character and pattern of development

Hrishikesh Ashtekar¹, Devendra Deshpande², Garima Buraghoain³

¹VIT's PVP College of Architecture, Pune, India; ²VIT's PVP College of Architecture, Pune; ³VIT's PVP College of Architecture, Pune

¹ashtekar.pvpcoa10@gmail.com; ²deshpandedevendra.pvpcoa05@gmail.com;

³garima.pvpcoa@gmail.com

Abstract

Urban sprawl, the word used for the built environment in urban fringes connotes negatively to the overlap of new development patterns over the surrounding villages, farmlands and natural resources. Usually under planning processes, common development guidelines are formulated for the market driven development. In this process, urban character, alien to the social and cultural context of existing situations gets generated that disrupts their image and identity. Through last three years of design studios, an aspect based method of reading, understanding and analyzing the urban peripheries of Pune region, which is a radial growing urban area with many of the villages and towns surrounding it getting engulfed in the urban agglomeration, thus becoming satellite or suburbs of the larger city. Each of these town or village in the peripheries has its own unique identity and way of life. This paper puts forth methods which are both observational as well as people participative, carried out by students of 4th year B.Arch. It also comes up with a methodology to draw up commonalities and variations which are unique to each of the areas due to their cultural and geomorphologic differences. The intention of the paper is to put forth a methodology of developing understanding of an area in terms of its existing character, social amenities, public utilities, physical infrastructure, open spaces, cultural background etc. This understanding can serve as a base for any kind of the bureaucratic planning processes like town planning schemes, local area planning in the urban fringes. It can also put forth the 'Specific profile' of different fringe areas of the city that can help the people living there to be aware of the positives as well as negatives of their urban areas in terms of available urban resources. It may also help them specifically to identify their needs and requirements in future for basic amenities, physical infrastructure, social infrastructure, open spaces etc.

Keywords: urban fringes, urban peripheries, Pune, aspects, methodology

Introduction

“The Phenomena of Suburbs is almost as old as cities. Where there is tight circumscription, there will be spill” (Kostof, 1992), cities are difficult to contain. Even during the ancient period, in the cities of Middle East and medieval towns of Europe, there existed a parallel city outside its walls, where people who wanted to take advantage of existing city migrated and settled. In his epic book – City Assembled, Spiro Kostof gives detailed account of cities like Paris in early 19th century where shanty town grew in peripheries along with factories. In

India too, mega cities like Mumbai and Kolkata started as small settlements and grew as agglomeration of suburbs in 19th and 20th century along transport corridors due to development of port or industries. The sporadic urban development that takes place in the ever growing city peripheries has always followed patterns that respond to the needs of the parent city, usually taking place on cheaply available lands loosely connected along existing transport corridors. These patterns are often ‘Generic’ in nature that support the parent city in form of residential neighbourhoods or work places. These developments often overlap on existing landscape of rural settlements, their unique culture, traditions, and connections with ecology and environment. This paper puts forth a methodology to ‘Understand’ the peripheral development under various aspects which will bring out the ‘Specific Profile’ of the area in terms of the existing qualities, amenities, public utilities, physical infrastructure, social and cultural background, ecological aspects etc. This kind of understanding can become a useful background for any kind of bureaucratic processes like town planning schemes or local area planning by the government and can also help the residents in these peripheries know and define the development in their areas.

Background and purpose of the study

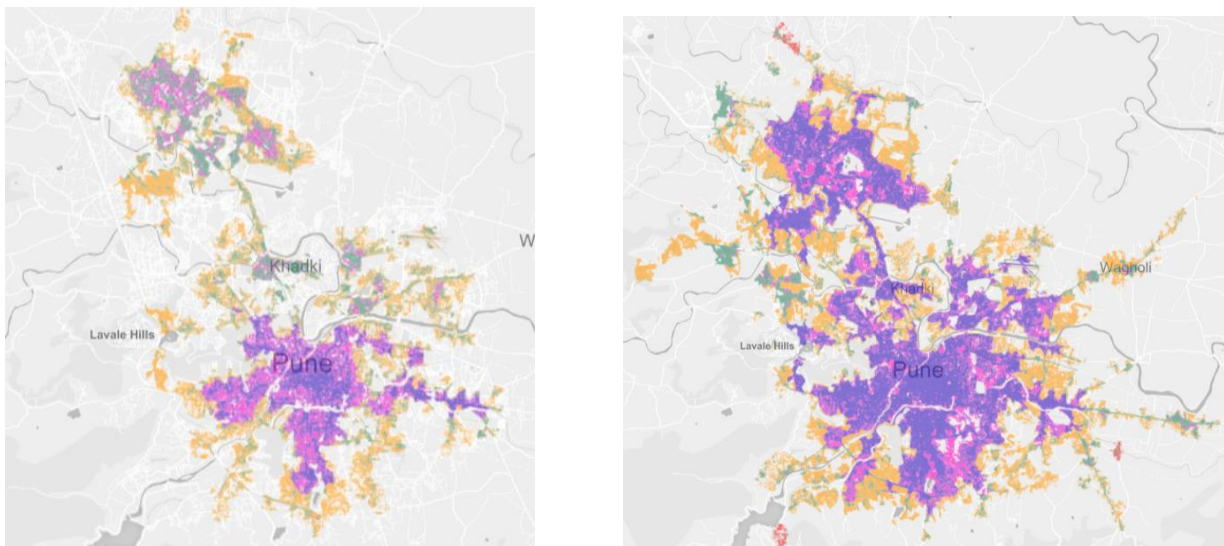


Figure 1: Pune Urban Agglomeration 1991 and 2011
(Image credit: www.atlasofurbanexpansion.org)

A total of 18,858 ha of built-up area was added to the Pune urban extent between 2001 and 2011. Of that added built-up area, 23% was infill, 61% was extension, 1% was leapfrog, and 15% was inclusion (Atlas of Urban expansion, NYU Urban Expansion program).

Thus the maximum growth of the city can be seen as growth in the peripheries of the city. As per the World Cities report, 2018 published by United Nations in 2018, the population of city was around 62,76,000 and projected population in 2030 will be 84,42,000. Pune will be among the 11 mega cities in India by the year 2025 in terms of its growth and population. As happened earlier, most of the growth will be in the peripheral areas along arterial roads, where land values are comparatively cheaper giving rise to cheaper housing projects. The second most important reason especially in a polycentric city like Pune, the growth of

workplaces is currently on the peripheries. There is considerable growth towards West, North West and North directions with automobile industries zone, Heavy industrial zone in areas like Chakan, Talwade & MIDC in Pimpri Chinchwad area. The Huge IT industrial park at Hinjewadi to North West of Pune along Bangalore Mumbai highway is almost 1000 ha area. The other growth direction is to east of Pune with Ranjangaon MIDC and IT industrial zone of Kharadi, Kalyani nagar, Magarpatta city etc (Wilbur Smith Asso, IL&FS, PMC, 2008) This growth is along two infrastructure corridors – Pune-Ahmadnagar Highway towards North East and Solapur highway towards East. In 2008, IT sector alone had almost 100 small and large IT companies with 1/4th of them being multinational. These developments have led to two scenarios, first being the logical growth of residential settlements around the work places and second being; crisscross traffic moving through the city to reach workplaces in morning and away from them in evening.

The study on urbanizing peripheries carried out by PVP College of Architecture focuses on the understanding the growth patterns in peripheries of city, its reasons, process and typologies. As part of the program, the faculty teaching Design for 4th year B Arch have been studying various peripheral areas around Pune since 2017 with active participation of students. The academic pedagogy involves studying of peripheral areas under various aspects, understanding their needs and aspirations, evolving contextual design programs and resolutions for design projects of mass housing and amenity projects in the urban contexts.

Growth of any city is inevitable. Instead of grossly bracketing this growth in peripheries as ‘Urban Sprawl’, can this growth in the peripheries understood and analysed in detail? There are certain generic concerns of urbanizing peripheries of large cities but there are also specific peculiarities, unique cultures, local economies and local ecologies, which shape the new parts of the city. The purpose of the study is to study and understand the growing peripheries, not as negative phenomena, but as unique additions to the city based on their existing physical, ecological, and social contexts.

Objectives of the study

Following are the three objectives of this study:

- 1) To understand the processes of development of the urbanizing peripheries including the forces of development shaping them.
- 2) To develop a ‘Framework’ based on aspect parameters to select an area and study the same in the urbanizing peripheries of large city. This kind of framework will prove to be supportive as base study for any formal planning process by the government.

Methodology

The broad methodology of research can be defined as follows:

- A) Process of selection of area for study on growing peripheries of the city.
- B) Identifying the different aspects for the study – Common aspects and unique aspects based on the character of the area.
- C) Study and documentation of the peripheral areas under various heads of different aspects through involvement of students of architecture. This gives both the ‘Generic’ as well as ‘Specific’ insights of the concerns of the development.
- D) Analysing outcomes and coming up with broad guidelines for development from the above study.

E) Presenting the above in form of public exhibition to various stakeholders and people to get their feedback on the study.

a) Selection of area for study

Each of the urbanizing periphery though shown similar characterises of gradual land conversion, growth and many patterns of development where market driven residential development overlap existing villages and their culture that become similar traits. But there also are certain unique phenomena of each area that give impetus to the new development. These come from various phenomena which have developed by either virtue of a planning decision by government, or a dominant geomorphic environmental feature or an existing stopover village or culturally well known activity like religious precinct or a tourist destination. Another reason which acts like fuel for the growth of a peripheral area is a strong connection to the large city in form of a movement corridor (mostly in form of roads). Within the peripheries of Pune region, many such areas could be identified on edges of the existing urban agglomeration. Rather than selection of an area, the first step was to select a predominant phenomenon. Since last 3 years, 3 different phenomena were identified and studied (Students and Faculty 4th year B.Arch, Urbanizing Peripheries project, VIT's PVP College of Architecture, 2017, 2018, and 2019).

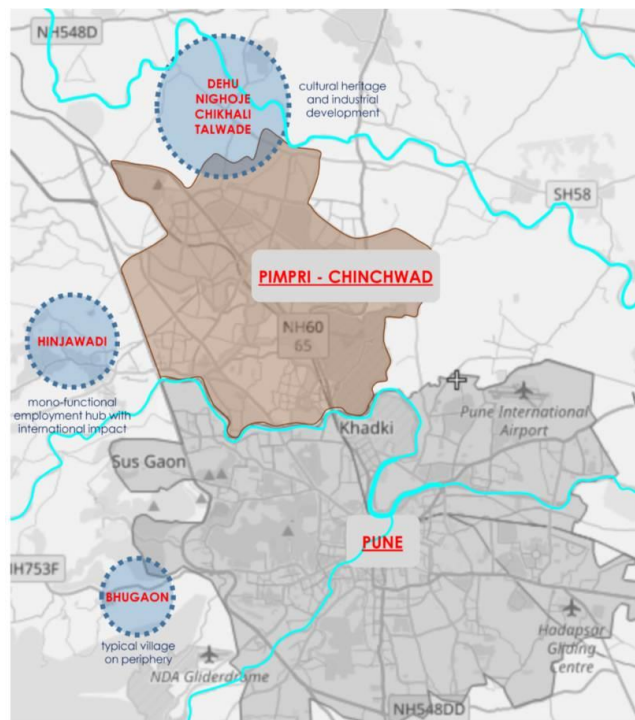


Figure 2: Study areas in Pune region
(Image credit: Authors)

Criteria for selection of the various peripheral areas for study were as below:

Table 1: Criteria for selection of peripheral areas

S.No	Name of the area	Similar pattern of development	Predominant unique phenomena leading to growth
1	Hinjawadi Located on north west of Pune along National Highways No – 4 , connecting Mumbai and Bangalore	a) Land conversion from agriculture to developable plots. b) Location along major national highways, state highways or major arterial roads connecting to main city. c) Absence of implementation of formal mechanism like Town planning schemes or Area development plans d) Market driven development in form of residential development with typologies supporting the middle class families and bachelor’s accommodation. e) Gradual overwhelming of urban culture on culture of existing villages or ‘Goathan’. f) Lack of basic amenities and facilities. g) Undeveloped secondary road and movement infrastructure. h) Low connectivity with parent city through public transport. j) Interdependencies as well as clashes between existing and new population.	a) Major IT Hub of Pune with industrial and work place b) Attracting to and from movement of vehicular movement from the parent city. c) Large amount of floating population within the day. d) Proposals of high end transport infrastructure like Metro from parent city.
2	Bhugoan Located on West of Pune along state highway connecting Pune and Konkan	(Similar to above) With its own ‘Goathan’ or village settlement now surrounded by new development	a) Closest village with undeveloped lands near developed areas like ‘Kothrud’ or ‘Bavdhan’ on west of Pune. b) Geomorphic ecological setting with hills on north and ‘Ramnadi’ river on south side.
3	Dehu, Nighoje, Chikhali, Talawade Located on north of Pimpri Chinchwad	(Similar to earlier) Where each of the four areas have their dynamics of north south movement to and from the city and ‘Goathans’ surrounded by new development	a) Dehu is a place of Cultural Heritage , which was abode of Saint Tukaram. The famous yearly Pandharpur Wari starts from here b) Talawade has multiple well known IT Industries. c) Nighoje is small village close to major Automobile Industries. d) Chikhali is fast developing suburb of Pimpri Chinchwad, the twin city of Pune.

Though the above criteria for selection is enumerated for each of the peripheral suburbs , another major reason for their selection was their accessibility in terms of location as well as the social connections with students and faculty team of the institute. They formed representative cases occurring at a distance of around 10 to 15 kilometres from the developed edges of the city.

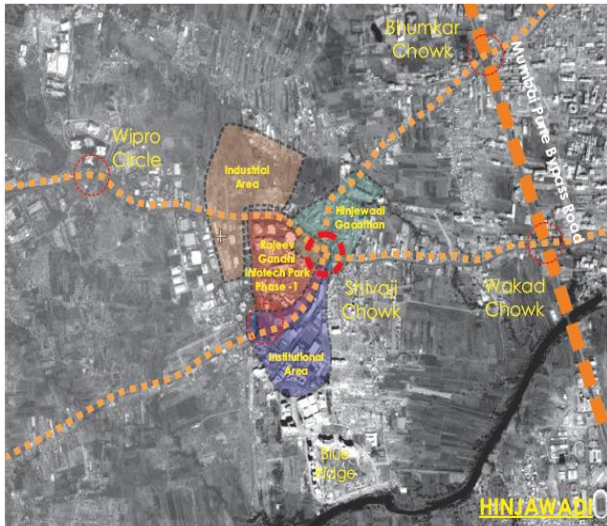


Figure 3: Study area of Hinjewadi



Figure 4: Study area of Bhugao

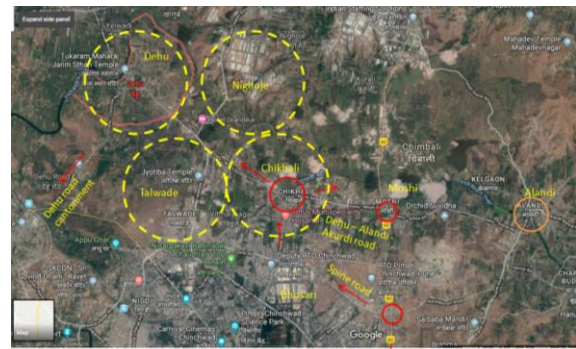


Figure 5: Study area of Dehu, Chikhali, Nighoje, Talwade

Image credits: Authors

b) Identifying the different Aspects as parameters of the study

Following were the different ‘Aspects’ identified for the three areas selected:

Hinjewadi – Image, Live and Work environment, Livelihood and Economics, Mobility, Safety and Security, Cultural connect, Recreation and Public Amenities & Natural resources



Figure 6: Study aspects in Hinjewadi

Image credit – PVPCOA 4th year Students , Academic year 2017-18

Bhugoan – Image, Ecology – Environment & Resources, Lifestyle, Built Environment and Mobility

Dehu, Chikhali, Talawade and Nighoje – Image, Culture & Heritage, Ecology and Environment, Activities and Land use, Amenities & facilities, Movement & Connectivity, Livelihood, Utilities & Infrastructure , & Built environment.

Table 2: Aspects considered for study areas

Aspects	Hinjawadi	Bhugoan	Dehu & Surrounding Area
Generic Aspects	Image, Mobility, Natural resources, amenities, Cultural connect	Image, Environment resources, environment, Amenities	Mobility and Built environment, Movement and Ecology Amenities and Built environment, Utilities & Infrastructure
Predominant Specific Aspects	Live and work environment, Livelihood and economics , Safety and security	Ecology, Lifestyle	Culture and Heritage, Livelihood and economy, Activities and land use

If we see them, there were certain common aspect parameters like Image, Ecology, Environment, Infrastructure, Life style and Amenity mapping . These were selected as they responded to the ‘Generic’ issues of peripheries. The method of study and recording the observations followed were very similar as elaborated further and also the outcomes of study were very similar on which we could draw certain common conclusions. Then based on the typical different nature or characteristics of the urban periphery, few aspects selected were very ‘Specific’ in nature. Like ‘Safety & Security’ in Work zones of Hinjewadi and Talawade or ‘Cultural Heritage’ aspect as focus to study the pilgrim town of Dehu. This aspect study brought out the unique nature and specific concerns of the area. It also gave us the people’s perspective of looking at these concerns. The idea to select these unique aspects was that it can lead to create policies and suggest interventions that can address the immediate needs of the urban area.

c) Study and Documentation of the peripheral areas under various heads of different aspects

For various ‘Generic aspects’ following is the broad methodology which was used for study and documentation.

Note: Images given for each aspect are representative of a methodology used for few of the areas and do not give a complete outcome here in this paper due to the large number of contents involved for each of the study areas. Also the order and hierarchy in which they are defined may differ for each of the areas depending upon their importance. The data for Dehu and surrounding area and images for studies are not included in the research paper since the study is still under process.

1) Image & Identity

This aspect study focused on the perceptive ‘Image’ of the area at three layers – Continuing Nostalgia or earlier Image of area, Current dominant characteristics of imagery in form of

photographs & anticipated future image of the area through sketches drawn by school students in the area.

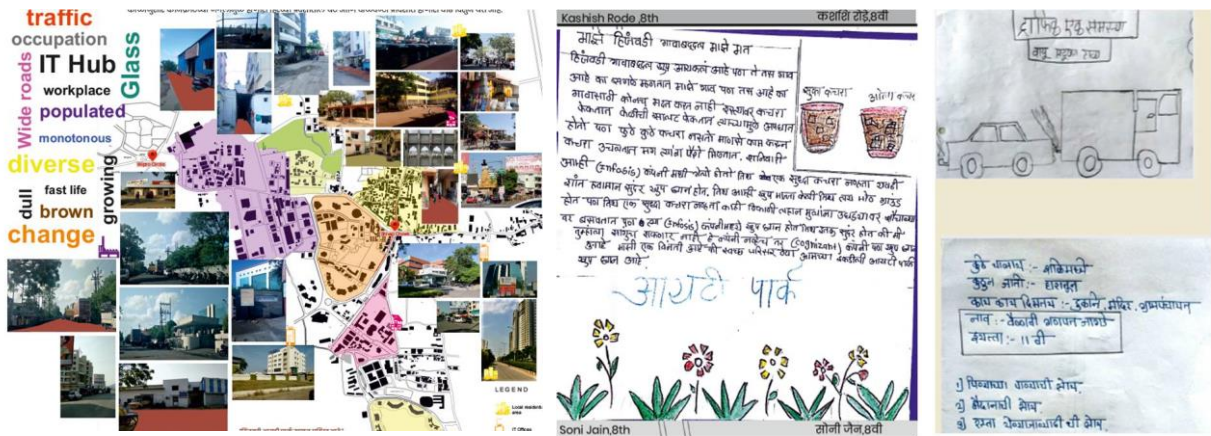


Figure 7: Imagery of Hinjawadi IT area



Figure 8: 4th year Architecture students interacting with school children to interpret their Imagery of the place

Image credits for Fig 7 & 8: PVP COA 4th year students Academic year 2017-18

2) Mobility / Movement and connectivity

Mobility aspect tracks one of the most challenging issues of urban peripheries as strong connectivity of the peripheral areas to the main city is required for its success. The development is found largely along the connecting arteries to main city. The regional connectivity as well as local movement by various modes of transport (vehicular and pedestrian) is identified and studied.

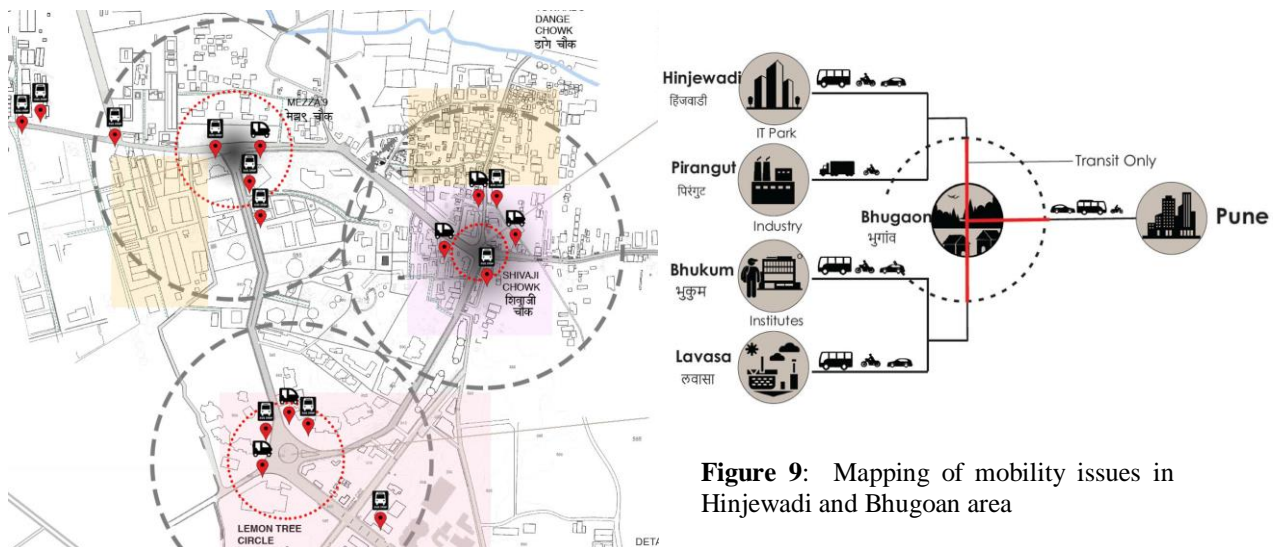


Figure 9: Mapping of mobility issues in Hinjawadi and Bhugaon area

(Image credits – PVP COA 4th year students, Academic year 2017-18 and 2018-19)

The study of this aspect also understands the notional hierarchy of roads, location of traffic congestion spots, issues of through traffic, status of public transport, direction of movement in peak hours, mapping of condition of roads etc. This aspect study documents the changing nature of natural environment and ecology due to growing urban development. Land conversion from eco sensitive areas to farmlands and to urban development pockets is tracked through satellite imagery for consecutive gap of multiple years. The ecologically fragile zones like hill slopes, river and stream riparian areas are identified and marked. The study also documents the status of ecological resources in the area which are mapped, also locating the places with larger environmental concerns.

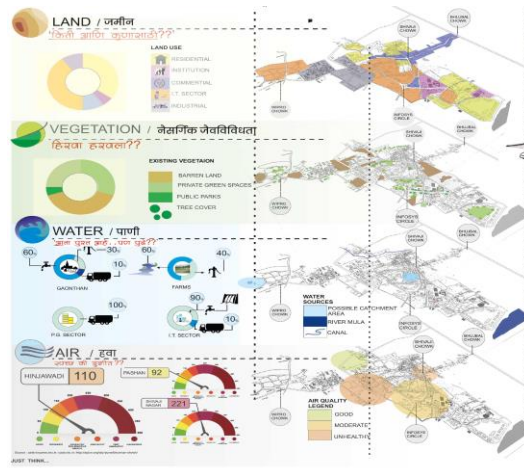


Figure 10: Status of ecological resources like land, water and air in Hinjewadi area

(Image credit: PVPCOA 4th year students, Academic year 2017-18)

4) Public Amenities

Public amenities in each area are mapped for three things – their location, quantity (size and number) & quality (visual as well as perception that is based on views of users).

Table 3: Amenities in Hinjewadi area

Amenities chart in Hinjewadi IT park area							
Essential stores	Subtypes of Amenities						TOTAL
	General	Medical	Vegetables	Weekly market	Laundry	Mis c	TOTAL
	21	10	16	-	12	9	68
Health care	Clinic	Primary HC	Hospitals				TOTAL
	3	-	5				06
Educational	Aanganwadi	Primary	Secondary	College	Tuitions	TOTAL	
	4	4	4	2	10	28	
Financial & Banks	ATM	Banks					TOTAL
	19	7					26
Food	Eateries	Cafes	Restaurants				TOTAL
	26	10	17				53
Accommodation	P.G hostel	Guesthouse	Hotels				TOTAL
	82	-	03				85
Fitness	Gymnasium	Playgrounds					TOTAL
	09	04					13
Social amenities	Open plazas	Religious					TOTAL
	01	04					05

Within this the following heads of basic amenities area mapped – Essential stores, Healthcare, Educational facilities, Financial, Accommodation, Sports and fitness. Infrastructure mapping of basic utilities like Bus stops, Police stations, Fire stations etc are also carried out.

Table 4: Amenities in Bhugaon area

Amenities chart in Bhugaon area							
Essential stores	Subtypes of Amenities						TOTAL
	General	Medical	Vegetables	Weekly market	Laundry	Misc	TOTAL
	25	8	11	1	7	8	60
Health care	Clinic	Primary HC	Hospitals				TOTAL
	5	-	4				09
Educational	Aanganwadi	Primary	Secondary	College	Tuitions		
	1	1	1	1	4	TOTAL 08	
Financial & Banks	ATM	Nationalised bank	Co op Bank	Rural bank			
	6	2	2	1	TOTAL 11		
Food	Eateries	Cafes	Restaurants				TOTAL
	15	9	18				42
Accommodation	P.G hostel	Guesthouse	Hotels				TOTAL
	11	-	-				11
Fitness	Gymnasium	Playgrounds	Akhada				TOTAL
	4	-	1				05
Social amenities	Open plazas	Wedding lawns	Religious				TOTAL
	01	6	15				22

While on a generic basic one can easily recognize the lack of essential amenities of ‘Healthcare’ at all the levels (Primary, Secondary & Tertiary). Also there is lack of organized open spaces in form of ‘Playgrounds’. The number of banks are also very less. So is the lack of social open spaces.



Figure 11: Public amenities are located along main highway in Bhugaon area, also creating the perception of safe zone along it. (Image credit: PVPCOA 4th year students Ac year 2018-19)

Figure 12: Public amenities are located along main roads and close to dense populated Goathan in Hinjewadi area creating perceived safe zones near it (Image credit: PVPCOA 4th year students Ac year 2017-18)

Whatever they are present; the social spaces are attached to religious areas. The essential stores are high in number. While Hinjewadi is an IT industry zone, the number of PG Hostel facilities is very high but hotel accommodation is less. Within the area of around 4 sq km, the numbers of restaurants are high. In Bhugoan since it lies along a state highway, eateries and essential stores are very high. Thus the types and number of amenities are responding to the location characterises of the area but in case of distribution of amenities, they were found to located close to the ‘Gaothan’ areas that are densely populated or along the main roads.

5) Culture & Lifestyle

Cultural continuity in areas which new development takes place is an important aspect. The cultural heritages of the area, festivals, social spaces etc are mapped in terms of their location, event dates and photographs. This also includes day to day study of lifestyle of people. Same is also documented in form of short films. In areas which have historic or cultural importance due to presence of a religious place or monuments of heritage value, there is a large footfall of visitors due on certain occasions.

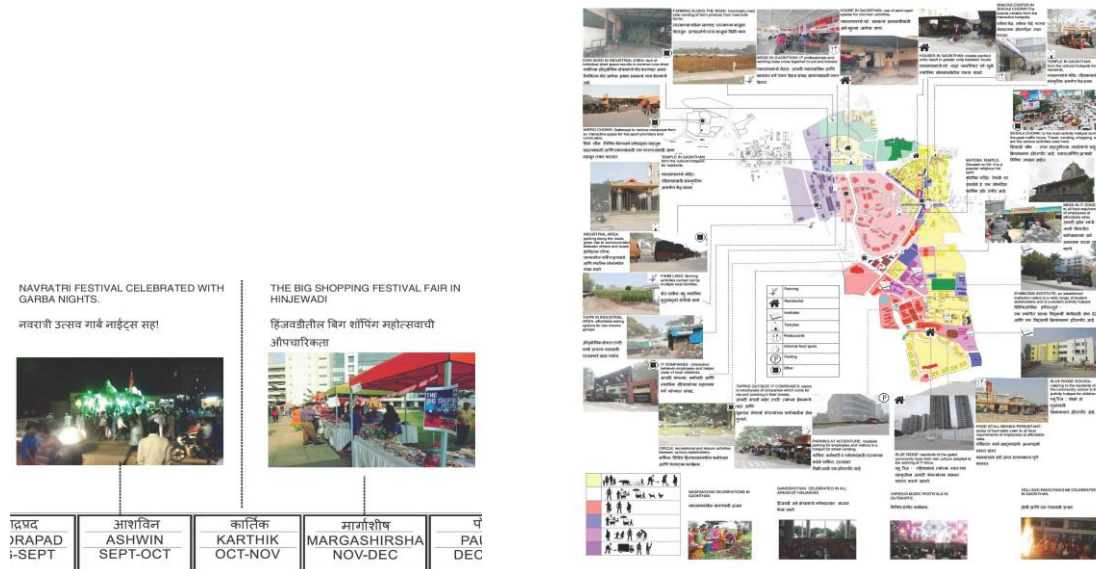


Figure 13: Cultural mapping Hinjawadi area
 (Image credit: PVPCOA 4th year students
 Ac-year 2017-18)

6) Built environment

This includes aspect study of predominant building typologies and the activities within them. Studied by documenting them in form of drawings, it also includes reasons for their emergence. The various typologies documented give insight on how people live and work. They also give an idea of the aspiration of people, as they come up in response to the need of the development.



Figure 13: Built form typology in Hinjawadi area
 (Image credit: PVPCOA 4th year students Academic year 2017-18)

7) Livelihood & Occupation

The aspect of 'Livelihood and Occupation' or identification of 'Local Economies' is covered under this aspect including the study of the 'Work Environment' for various different types of people both formal & informal. This study brought out the economic interdependencies of local and new population moving in the area.

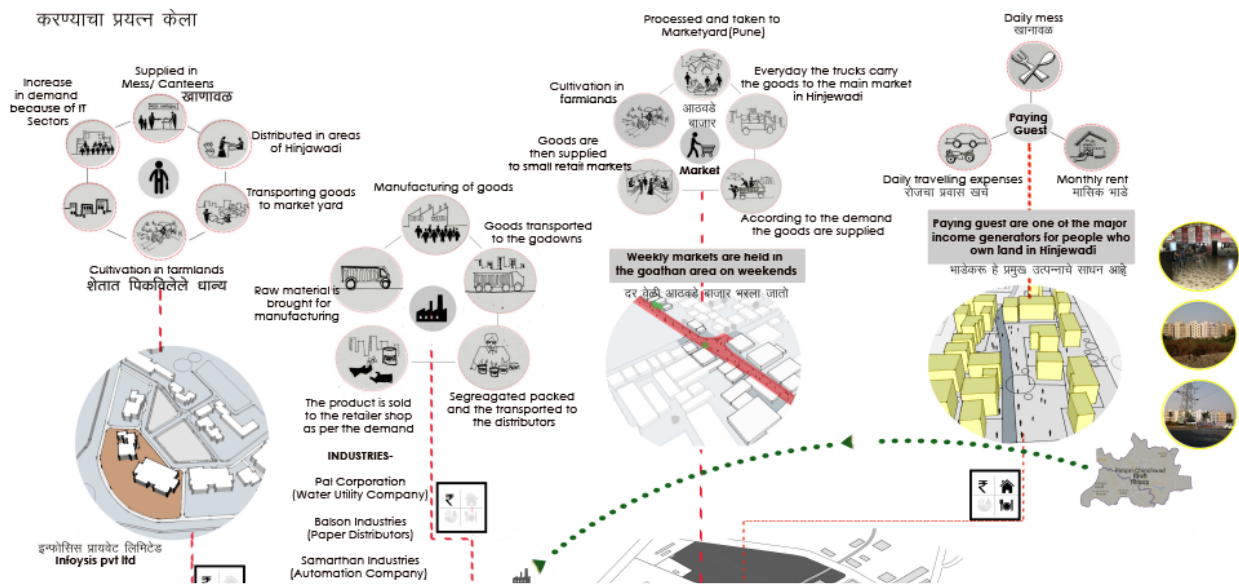


Figure 14: Documenting Livelihood interdependencies in Hinjawadi area
 (Image credits: PVPCOA 4th year students – Academic year 2017-18)

8) Mapping Specific concerns in the Area

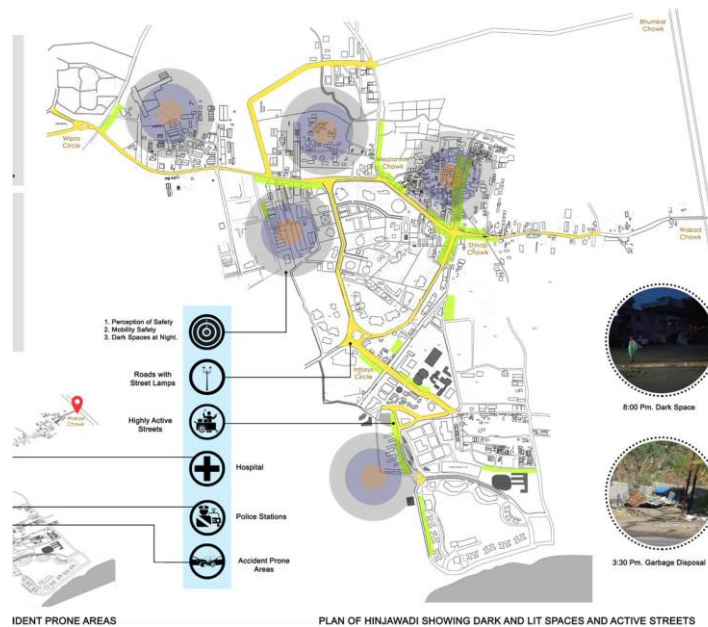


Figure 15: Mapping dark spots & well lit zones under ‘Safety & Security’ in Hinjawadi. (Image credits: PVPCOA 4th year students Academic year 2017-18)

‘Specific’ concerns in the area are identified and study of ‘Specific aspects’ of the area are done. For example – ‘Safety & Security’ was a common concern in Hinjawadi area on streets located in IT industry phases in post office hours. These dark spots were mapped by observation as well as questionnaire in public exhibition where people were asked the question to identify safe and unsafe areas. Similarly the specific aspect of ‘Heritage’ was more critical in the study of pilgrim town of Dehu and few socially significant places.

d) Analysing outcomes & coming up with broad solutions

Identifying the major strong points & issues in the areas selected and listing down policy level solutions which can help make the area liveable based on interaction with the people while documenting the area. This also involves, coming up with Guidelines for development based on the study in form of area plans locating required inserts, local movement network plan, interventions and proposals for taking care of missing amenities, open space network and physical infrastructure in the area of study.



Figure 16: Broad structure plans for the areas locating movement routes, amenities, open spaces etc (Image credit: PVPCOA 4th year students Academic year 2017-18)

The broad plan above indicates the location of various urban insert projects with required amenities. A list of required amenities is given along with the plan. The yellow dotted line indicates the pedestrian linkages.

e) Presenting the above in form of public exhibition to various stakeholders and people to get their feedback on the study and proposals

This step first involved identifying public forums or public spaces, where a public exhibition is put up for various types of people or stakeholders to go through the above aspect studies. Many times it involves creating a social gathering with local leaders to create sufficient interest.

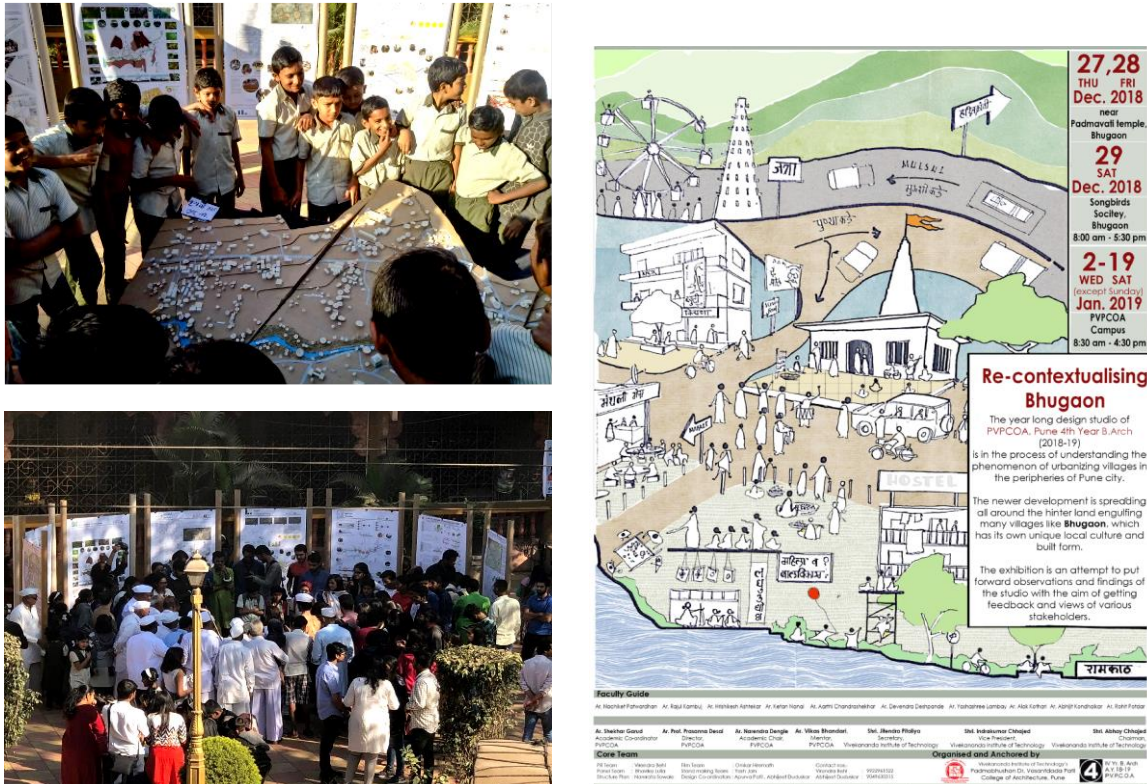


Figure 17: Public exhibition at Bhugaon
(Image & Photo credit: PVP COA 4th year students Ac year 2018-19)

f) **Based on the feedback develop a qualitative** document which includes a refined Area ‘plan’, proposals for amenities, facilities and character of development that addresses both the ‘Generic’ and ‘Specific’ concerns. These concerns also led to identifying the various amenities that are missing or required in these areas.



Figure 18: Based on the feedback received , the specific area proposals were prepared as part of the academic projects , also locating and detail planning of various ‘Amenities’ projects
(Image credits: PVP COA 4th year students Academic year 2017-18)

A structured feedback is taken on various aspects in the area through questionnaire in local language, in which students are involved to interact with people. For e.g, in Hinjawadi, for the aspect of ‘Safety and security; the question was asked to name the safe and unsafe areas in the locality. Invariably most people who interacted with students answered that the areas around ‘Goathan’ and along main road with commercial edge were safer than the deserted wide streets in the Industrial area. The plans below developed by students indicate additions of commercial edge to existing IT buildings and also detail projects like Bus terminus that is required in the area.

Results and discussions

Although the above methodology of studying the various peripheral areas is largely qualitative or even observational, the comparative observations under common aspects, for various areas studied are put forth in the table below. The detailed studies of individual areas cannot be shared in detail under the purview of this research paper.

Table 5: Comparative observations based on Aspect studies

No	Aspect	Hinjawadi area	Bhugoan	Dehu area
1	Image & Identity	Perception of the ‘I.T. Park’ as a predominant image in minds of people with Goathan area also being a continued image for residents in the area for longer time. Goathan area viewed as area with traffic nuisance.	Wider perception of residents of Bhugoan to still be a ‘Village’ core with ecological surroundings. But the perception is also of a village caught up in urbanization and traffic issues, developing as an urban suburb.	Predominant image of Dehu as a religious place related to saint ‘Tukaram’, especially where the yearly ‘Wari’ procession begins. There is also a duality of the surrounding areas of Talawade, Chikahli & Nighoje as new growth centres of northern Pune region.
2	Mobility	Mobility concerns due to heavy traffic of personal vehicles generated by IT workplaces. Existence of para transit systems to support existing non frequent public transport	Typical case of an urban village cut through by transit route with heavy traffic. Activity generators like marriage halls, bars and restaurants along main road create traffic problems.	Mobility concerns mostly in form of issues related to ‘Connectivity’ to the main city. Existence of para transit systems to support existing non frequent public transport.
3	Environment & Ecology	Deteriorating condition of natural environment, especially land and air pollution due to development.	Deteriorating condition of natural terrain, streams and vegetation due to development.	Natural environment affected by land conversion in wake of current development of residential projects and work places. Pollution and flooding issues of river ‘Indrayani’.
4	Public Amenities	Density of public amenities more near existing development & ‘Goathan’ area. Lack of essential amenities like healthcare and education at various scales.	Density of public amenities more along the highway cutting through the village. Lack of essential amenities like healthcare and education at various scales.	Density of public amenities more near existing three ‘Goathans’ with more amenities like eateries, hotels etc catering to floating population. Lack of essential amenities like healthcare and education at various scales.

5	Culture and Lifestyle	Associations between places and people vary in different areas. Traditional festivals are celebrated in Goathan area. Organised traditional festivals like Navratri are also celebrated in organised manner in IT offices and few residential colonies. Day to day culture of association with public spaces differs based on social groups. While public spaces and temples are more occupied by local population, new residents, as well as IT employees have parallel associations in places like local restaurants. Inter social groups interaction is low.	Lifestyle continues to be rural in the 'Goathan' area with aspirations for an urban lifestyle. Daily life continues with place and people association in Goathan area around the Bhugoan temple square, lanes and by lanes etc. Residents living in gated communities have very less interaction in Goathan based public spaces. Their associations are more with the open spaces, club houses etc within their gated housing projects. There are way by marriage halls and restaurants which attract large amount of floating population.	The popular cultural symbol of Dehu area continues to be the temple of saint Tukaram and the 'Wari' procession route which come along with it. The association of people living in both the 'Goathan' as well as the newly developed areas are with the lifestyle offered by the nearby developed Pimpri Chinchwad urban region . This area has got few marriage halls which attract floating population from other parts of city.
6	Built environment	Character of built environment defined by IT park buildings, industrial structures, and residential gated communities and redeveloped Goathan with P.G Hostels & Individual residences.	Character of built environment defined by mixed development of rural Goathan, gated apartment projects and intermittent highway side shops & commercial buildings.	Character of built environment defined by rural development of Goathans, new residential projects, IT work places and temporary structures of small industries.
7	Livelihood and occupation	Local economic interdependencies between employees of I.T industries and Goathan people through trade and transaction of goods, food items & services. Low cost P.G Hostel accommodation and mess services provided by locals.	Local economic interdependencies between residents in gated housing projects and Goathan people through trade of goods, food items and services. Highway side shops , bars , marriage halls and restaurants serving floating population & transit vehicles.	Local economy defined by tourism induced by saint Tukaram temple and 'Wari' procession in Dehu. Economic interdependencies between smaller industries supplying spare parts to larger automobile industries in vicinity. Interdependencies between local population and new residents through transaction of goods, services & low cost hostel accommodation.
8	Safety & Security	Issues related to safety predominant in I.T industrial area with low traffic & lack of commercial or residential buildings. Goathan area safer than new developed areas.	Safety issues Induced due to transit traffic through village.	Safety issues observed in non working hours especially in work place areas. Goathan areas safer than new developed areas.

Conclusions

1. The method proposed is based on aspect based studies in the area under certain common parameters.
2. The study of Image and Identity in three areas brings about the common concerns of parallel identities 'Rural' as well as 'Urban' that are cognised by the different people. There is overall lack of coherent image.
3. Study of mobility and movement addressed the common issue of connectivity of new development and transit traffic moving through existing settlements.
4. Study of environment and ecology brings on forefront degradation of natural environment due to development.
5. There is a lack of public amenities in the peripheral areas and the density of location of existing amenities is around the existing settlement.
6. Study of culture and lifestyle explains the dual culture which exists in the peripheral areas- Rural and Urban and their interactions which need to be addressed
7. Study of built environment reveals that there are multiple building typologies within old and new settlements that co-exist. The old built form gets gradually replaced by new construction, so as the farmlands.
8. There are economic interdependencies within people living in new and existing settlements that lead to gradual change in livelihood and occupation from agrarian to service based.
9. Aspect study of safety and security reveals the fact that street side development and mixed use projects are densely located form safe zones in the entire region.

Above are certain common conclusions on urbanizing peripheries. But the predominant activity in certain area which defines its character is required to be studied in detail through specific aspects focusing on the same.

Acknowledgement

We acknowledge our Institute- VIT's PVP College of Architecture for involving us as Faculty and Researchers in the Urbanizing Peripheries research project through the studio of 4th year B.Arch. We acknowledge the students and faculty of 4th year B.Arch from academic years 2017-18, 2018-19 & 2019-20 for their involvement in the research project.

We acknowledge the following faculty teams for their involvement in the project:

Prasanna Desai, Devendra Deshpande, Aarthi Chandrashekar, Yashashree Lambay, Garima Bhurogoain, Nachiket Patwardhan, Deepak Kambhuj, Alok Kothari, Abhijit Kondhalkar, Ketan Nanal, Rajul Kambhuj, Rohit Potdar & following experts -Pranjali Deshpande ITDP, Shirish Kembhavi from IUDI, Avinash Madhale, Sanskriti Menon & Amar Karan from CEE Pune.

References

1. Kostof, S. (1992). *City Assembled*. New York: Thames and Hudson.
2. Marron Institute of Urban Management, NYU Urban expansion program. (2019, October 26). *atlasofurbanexpansion.org/cities/view/Pune*. Retrieved from Atlas of Urban expansion: <http://www.atlasofurbanexpansion.org/cities/view/Pune>.

3. United Nations Department of Social Affairs Population division. (2019, October 26). The World cities in 2018 -the United Nations. Retrieved from www.un.org: https://www.un.org/en/events/citiesday/assets/pdf/the_worlds_cities_in_2018_data_booklet.pdf.
4. Wilbur Smith Asso, IL & FS Urban Infrastructure Services Ltd. (2019, October 26). Comprehensive mobility plan, Pune municipal corporation. Retrieved from www.pmc.gov.in: <https://pmc.gov.in/en/comprehensive-mobility-plan>.
5. Students and Faculty 4th year B.Arch –Academic year 2017-18, VIT’s PVP College of Architecture (Dec 2017), Urbanizing Peripheries, Academic work -Humanizing Hinjawadi, Unpublished raw data.
- 6 .Students and Faculty 4th year B.Arch –Academic year 2018-19, VIT’s PVP College of Architecture (Dec 2018), Urbanizing Peripheries, Academic work - Re contextualizing Bhugoan Unpublished raw data.
- 7 .Students and Faculty 4th year B.Arch –Academic year 2019-20, VIT’s PVP College of Architecture (2019-20), Urbanizing Peripheries, Academic work - Centres on the Peripheries. Dehu, Chikhali, Talawade, Nighoje – ongoing study -Unpublished raw data.